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EFFECTS ON TURNOUT OF CONCURRENT ELECTIONS IN ITALY: AN EMPIRICAL ANALYSIS

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Introduction

In the last 50 years, researchers have noticed that electoral turnout in most democracies around the globe is experiencing a decline. The turnout's decline is deeply negative in a democracy since a too low turnout implicates that the government is not actually representing the whole population, indeed, this might lead legislators to be isolated from citizens' actual preferences.
If a low turnout is bad for the representation of the populations' interests, policy makers should find a way to boost turnout at least for the elections in which the turnout is structurally lower.
Most of the times, in turnout literature, when researchers desire to comprehend which are the factors that affect turnout they are more focused on the voters' individual behaviour or on a cross country comparison between states.
Instead, in this analysis we are going to focus on the overall effect of a concurrent Local election to the turnout of a National election in Italy. Hence, we are going to analyse a aggregate case in a single country.
We are interested to see if the concurrence of elections is a feasible way to boost turnout since this is one of the cheapest and easiest way for policy makers to incentive citizens to vote. Of course there are some downside in the concurrence of two elections but we are going to discuss them as well as the upsides.
To answer to our research question, "which is the effect of a concurrent election on turnout?", we are going to exploit an Italian case, in which we are going to take into consideration three National elections. The first one, is the Chamber of Deputies election occurred on the 13^{th} of April 2008. The second election in consideration is the Chamber of Deputies election of 24^{th} February 2013 and the last election in consideration is the European election of 25^{th} May 2014. The concurrent election in our case is a Municipal level election that happened in 3.918 municipalities simultaneously to the European election of 2014. We selected these three National elections because the entitled voters are the same, since they are National elections in which every citizen above 18 years of age is entitled to vote, and because these elections are close in time.
We are particularly interested in this Italian case since this analysis and its results might be com-

pared or even repeated with the two National elections that have occurred in the last two years. Hence, the Chamber of Deputies election occurred on the 4^{th} March 2018 and the European election of the 26^{th} May 2019 during which a Local concurrent election have occurred as in our analysis.

For this reason, it is interesting to see if the concurrence of elections have any effect on the turnout and if policy makers should try to organize as many concurrent elections as possible.

The structure of the analysis is organized as follows. In the first Chapter the focus is on the literature on turnout, elections and voters mobilization. In the second Chapter are summarized the main rules of the Italian electoral system, with a particular interest for the elections in consideration. The third Chapter presents the dataset used for the analysis and its two main sources, as well as some considerations on the data itself. In the fourth Chapter is discussed the model used in this study, its assumptions and the issues that might apply to our case. The results of the baseline analysis are reported in the fifth Chapter as well as two robustness checks and an alternative setting. Finally, we are going to conclude with some considerations on the results and their implications.

Chapter 1

Literature review

1.1 Importance of turnout

The outcome of an election is determined by voters' decisions. "Hence, citizens' participation and voting decisions in elections are fundamental inputs in the political process that shapes the policies adopted by democratic societies." (Degan and Merlo 2011).

It is important to focus on variations of turnout since it is not only a relevant political outcome but has also practical implications like "influencing electoral results, public goods provision, and minority-group representation." (Heath and Ziegfeld 2018). By highlighting these factors, it seems clear that "low turnout is intrinsically bad for democracy" (Heath and Ziegfeld 2018). Therefore, if more people do vote the government is more responsive to the citizenry whereas an inadequate turnout would provide legislators insulation from the citizens themselves (Matland and Studlar 2004).

Nowadays there is more than an unique form of political participation, indeed potential voters can choose the form of participation that best suits them. Some examples of other forms of participation might be binding referendums and protesting or, on a more local level, round tables and municipal meetings (Vetter 2015, Jackman 1987, Kostelka 2017). This is well described by the Modernization theory, in which theory citizens have an instrumental orientation towards participation and choose their preferred form of participation basing their choice solely on a "cost-benefit calculation"; hence, turnout would increase only if the population would find it optimal to vote rather than opting out or designate a different form of political participation (Wilford 2017).

Despite the fact that there exists more forms of political participation, elections are still the best way of casting a preference and participate in local, national and supra-national politics (Vetter 2015). As Vetter 2015 points out, elections remains important for four main reasons:

1. Voting in elections is the most cost efficient way of political participation since it requires the least resources in terms of time, knowledge and money; thus, it is the most common way of political engagement. As a matter of fact, "the rate of participation is still considerably higher than with other forms of political involvement as the latter are more resource dependent".

2. While casting a vote in an election citizens are sure that their decision has equal weight as the others voters since one person can cast an unique vote.

3. The process of an election is usually highly institutionalised and therefore it is more transparent than other forms of political participation.

4. Finally, "the outcome of elections is binding, that is, the constituents' decisions have to be implemented" (Vetter 2015). The fact that a result in an election is binding reinforce the citizens' idea that their vote matter and that the nuisance they bear to vote is not wasted.

1.2 What affects turnout

1.2.1 Classic voter turnout predictors

Most of the literature supports the theory that the main voters' turnout predictors are factors linked with political, institutional and socio-demographic factors (Kostelka 2017). These factors may have a positive or negative effect on the overall turnout, and this effect may be modest or considerable in size.

Jackman 1987 article is focused on the institutional factors that might affect the turnout's level. He assumed that these institutional factors are: nationally competitive districts, electoral disproportionality, multipartyism, unicameralism and compulsory voting. For this reason, one of the main institutional factors is the type of political system and its rules; for example, if the president is directly elected from the citizens or if there are multiple institutions for which citizens are voting for. We can safely assert that if the powers are focused in an unique institution (i.e. unicameralism) the turnout is going to be higher, since there is more at stake in this type of election. In fact, Jackman 1987 argues that the more powerful the institution citizens are voting for the stronger is their incentive to vote and the higher the turnout. Whereas, in the case of coexistence of more institutions the turnout would be lower than in the previous case, and between two institutions the turnout is going to be higher for the institution that the voters

consider more salient[1].

Another important institutional factor is compulsory voting. As it would seems obvious, Jackman 1987 asserts that compulsory voting has a positive effect on turnout, and estimates that it increases turnout by 13 points on average. However, Jackman 1987 didn't interrogate himself on which types of enforcement or sanctions are necessary in order to generate this effect. It is clear that compulsory voting increases the cost of not voting as Mattila 2003 highlights, but only if the sanctions are actually enforced. There are some examples of European countries that enforce voting through fines; i.e. Greece, Luxembourg and Belgium. However, in countries like Greece the fine in modest and not always imposed.

The Italian case is a peculiar example of compulsory voting, in fact, in Italy, until 1993, voting was compulsory. However, there weren't actual fines, it was regulated by the Constitution as a civic duty and "the only penalty incurred by an offender is to have its name posted outside the town hall in his commune residence, and to have his 'certificate of good conduct', now fallen largely in disuse, stamped 'Did not vote' for five years" (Mattila 2003, Jackman 1987).

Blais 2006 sums up the literatures' knowledge on compulsory voting: "we know that compulsory voting increases turnout and that its impact depends on its enforcement. But we do not know how strict that enforcement must be in order to work. [...] If a sense of duty is a crucial motivation for voting, most people should be predisposed to vote, and loosely enforced, light fines should be sufficient to produce a high turnout. And according to rational choice, the factors that shape the decision to vote or not to vote should be very different when there is a concrete financial cost associated with abstention.".

For what concerns political factors, two of the most interesting highlighted by literature are Competitiveness and Decisiveness. Competitiveness and Closeness of an election are synonyms used to define the difference in the share of votes gained by the winner of the election and the share of votes of the second most voted party in that election. Whereas, Decisiveness is " the absolute value of the difference between 50% of the votes and the vote share of the party with the highest percentage of votes" (Kostelka 2017). The higher these values the lower should be the final turnout of the election, indeed a high spread of votes between the two most voted parties make it less likely that a vote will have an effect on the outcome of the election[2] and this lowers the incentives for the individuals to vote.

Socio-demographic and socio-economic factors can be analysed both at aggregate level[3] and on an individual level. Kostelka 2017 asserts that more populous countries show an inferior turnout

[1]This effect is well described by the First and Second order election theory. We are going to focus on this theory in a subsequent section.

[2]We are going to discuss this aspect in the "Models of mobilization" section.

[3]This is the most common way to implement a cross country comparison.

than smaller ones, this might be linked with the fact that a more numerous population would lower the importance of a single vote, thus lowering the citizens' incentives. Another possible explanation, summarized by Wilford 2017, is that countries that are smaller in size might have a greater cohesion and a deeper sense of civic duty. Blais 2006 argues that in his studies the highest level of voting participation was reported in smaller countries such as Malta. He thought of three possible explanations for this effect: the first explanation might be the result of a stronger social network in smaller communities, the second might be due to the fact that voters have the perception that their vote will have an higher impact on the overall final election result, and the last explanation, the most plausible in the mind of the author, is that these countries have a lower ratio between electors and elected, thus making it easier for parties to mobilize voters.

It is well established that age and education have a significant effect on turnout, in fact older and better educated citizens are more likely to vote. As Blais 2006 summarized, the lowering of voting age from 21 to 18 has decreased the overall turnout in most democracies by around 3% points. However, Nikolenyi 2010 have shown that in India, when the voting age of the population was lowered from 21 to 18 years in 1989 the turnout have slightly increased.

On the individual level Jiang 2018 proved that there is a difference in voting behaviour in US between homeowners and renters in Local elections, but this difference disappears when you look at the participation on National elections. Homeowners tend to participate more actively in Local elections driven by their economic self-interest, in fact they are interested on how local policies might be affecting their property value, or at least they are focused on keeping taxation policies linked with homeownership as low as possible. Moreover, homeowners are less mobile than renters and for this reason they are more involved in which policies are implemented in their residence area and, for their lower mobility, they are more forward looking since they enjoy a longer utility flow from local public goods.

Many studies support the hypothesis that vote-facilitating rules, such as weekend voting or mail voting, do increase turnout since in the first case voters have more time to go to the polling stations and in the second case the cost and the nuisance of voting is lowered (Blais 2006). Jiang 2018 underlines the fact that citizens with an higher income would prefer to vote in the case of weekend voting, since if they should vote during their working hours it would be way more costly for them to do so, this means that a higher labour income lowers turnout in working days since the opportunity cost of voting is higher.

There are mixed theories on the effect of marriage on turnout, Jiang 2018 asserts that "marriage may depress turnout if married couples need to spend time with their children at home, which prevents them from going to the polls. On the other hand, if couples have school-aged children that they drop off to school and the pooling stations are close to local schools, it might be

convenient for them to vote.". However, in his study the overall effect hasn't a significant effect on turnout, at least not in the case of Local elections.

1.2.2 Number of Parties and Parties Polarization

Past literature has shown that there is a self-evident relationship between number of parties and the level of turnout (Jackman 1987); "as the more parties voters have to choose from the greater the chance that a voter will find a party close to his or her preferred position" (Wilford 2017). On the other hand, more recent studies proved that there were some mixed results on the effect of number of parties; for example, Nikolenyi 2010 article showed that the number of parties have an inverse relationship with turnout, even if these results are not statistically significant. The predictive results of number of parties on turnout are mixed and modest, for this reason Wilford 2017 propose an alternative approach that considers jointly the number of parties and the polarization of the party system.

As defined by Wilford 2017, "polarization represents the "spread" of the parties across an ideological spectrum, or how polarized a party system appears to voters". The theory of party polarization presupposes that a higher level of political differentiation generates a higher turnout. The reasons underlying a higher turnout due to a polarized system are linked to the fact that "the ideological spread of a party system should affect the range of choices available to the voter and the voter's proximity to a favoured party". The simple idea is that it's easier for a potential voter to find a party whose ideology is closer to his preferences when the system is more polarized; moreover, if a citizen can find easily a party that embodies his preferences it is more likely that he would vote since voting is seen "as an opportunity for individuals to express their political view. A wide political spectrum stimulates individuals to vote, which then increases levels of turnout." (Wilford 2017).

Wilford 2017 points out that there exists a conditional relationship between party polarization and number of parties and that it's not reasonable to assume that they work independently since they both form the political system in which the voter forms his political choices. By implementing "multiplicative interaction models with fixed effects for countries and year" and by using the data from the Comparative Manifesto Project data that included 26 democracies, Wilford 2017 was able to show that a highly polarized system with few parties increments turnout, whereas, many parties and low polarization level reduces turnout.

1.3 Models of mobilization

In this section we are going to have a brief summary of the two main models of voting mobilization in which we are going to show how voters decide if it is better to vote or opt out and how electoral rules may have an impact on turnout.

1.3.1 Pivotal voter model

The classic problem of voting rationality on electoral turnout was firstly introduced by Riker and Ordeshook 1968 whose work inspired several theoretical studies on rational choice and turnout. This model states that an individual vote only if the probability that his vote is going to influence the outcome of the election and any benefit that he might get by the act of voting fully compensates the costs of voting itself.
The model implies that it is rational to vote if:

$$pB + D > c \tag{1.1}$$

Where p is the probability of his vote being decisive of the election, B is the benefit he gains if his favourite candidate does win, D are any direct benefits gained by the simple act of voting (an example might be the sense of fulfilment), whereas c are the costs of voting. In reality, with this model it wouldn't be rational to vote for a normal individual since p is extremely small in democracies and mass elections; however, individuals tends to overestimate p in the case in which they still do vote even if the benefit of voting is small (D small). This explains why individuals still vote, as Cox 1999 summarize, "p is extremely tiny in any mass election, the model predicts that no one should vote unless B is toweringly large, voters systematically and grossly overestimate p, or $D \geq c$.". The model, however, doesn't take into account the role that institutions might have on turnout and on the incentives that parties might have to mobilize voters. For this reason it is interesting to see Cox 1999 model on electoral rules and the calculus of mobilization.

1.3.2 Electoral system and mobilization

It is well described in the literature of electoral participation that the electoral system has a significant effect on mobilization and thus turnout. Cox 1999 provides us a definition of electoral system: "By an electoral system I mean a set of laws that regulate electoral competition between and within parties" and he shows "how electoral laws affect parties' mobilizational incentives".

In this study Cox 1999 theorizes a mobilization model in which he implements a "calculus of mobilization"[4] that makes it possible to predict how different electoral systems drives parties to mobilize for voters and in the same time how voters react to parties' mobilizational effort. Parties usually prefers to target with their mobilization effort citizens that are "embedded in denser social networks" (Cox 1999) since they are more likely to spread their political preference and mobilize other potential voters[5]. For this reason, when parties decide who to target the best choice would be citizens that have a strong community ties due to long residence or citizens that are involved with churches activities.

The model is structured as:

$$u_s S(V(e)) + u_P P(S(V(e))) > c(e) \tag{1.2}$$

In this model e is the effort, u_s and u_p are respectively the seats in the legislature and the control over executive portfolio utilities. Hence, the parties' effort for mobilization are going to translates in increments in votes $V(e)$ that translates in an increase in parliamentary seats or in executive portfolio[6]. So the parties are going to execute effort to mobilize voters if the sum of the utility increment given by the effort is strictly higher than the cost of effort ($c(e)$). From this model it is clear that parties are going to mobilize citizens depending on how their effort translates into votes ($V(e)$), how those votes translates into seats ($S(V)$) and how seats translates into executive portfolios ($P(S)$).

It is shown that the level of effort increases when the possible result of an election is really close, we know thus that closeness of an election increments turnout; indeed, as stated by Denver and Hands 1974 "higher turnout in marginal seats[7] is rarely a product of a 'rational' appreciation of the situation by voters, but results from parties crating greater awareness amongst voters or simply cajoling them into going to the polls.".

With this model Cox 1999 confronts some different electoral rules and how these rules affect the convenience of parties to exert effort and mobilize potential voters. The model is able to predict which type of electoral system have a structure of rules that improves turnout through parties' mobilization effort.

It is proven that the structure of the electoral system have a significant effect on turnout; However, when comparing for different Electoral Systems the evidence is moderate, nevertheless, most of

[4] In Cox 1999 model, mobilization is seen as a group of activities that are regulated by the electoral system itself. Those activities are: coordination between different parties, persuasion of voters to mobilize and possibly to drive secondary mobilization, this means that voters themselves mobilize other voters to support their preferred party. This set of activities drives turnout, since the more people are mobilized the more people do vote.

[5] Secondary mobilization.

[6] Parliamentary seats $S(V)$ and executive portfolio $P(S)$.

[7] Hence when the election is close.

the literature tends to confirm that proportional systems boost turnout more than single member plurality systems.

1.4 Democracies and decline in turnout

"In the last 50 years, observers have noted with some concern decline in rates of voter turnout in democracies across the world" (Wilford 2017).

Numerous studies highlight the drop in turnout in established democracies, Wilford 2017 points out that turnout have dropped from an average of 80% to 50% in more recent times. For this reason, it is interesting to focus on some of the possible causes of this decline.

As Kostelka 2017 highlights, "according to conventional wisdom, democratic consolidation depresses electoral participation because by the time democracy is consolidated, voters have become disillusioned with democracy or are apathetic in the face of reduced electoral stakes". However, by conducting a study on 91 democracies Kostelka 2017 proved that the decline in voter turnout didn't occur in all the consolidations processes but only in one out of two consolidated democracies. In this article it appears evident that the consolidation of a democracy itself isn't the only aspect that have a significant effect on the decline of turnout, in fact another major cause is the democratization contest[8].

As summarized by Kostelka 2017, two theories tried to explain the peak in turnout during the democratic consolidation. The "stakes-based hypothesis", that relies on the fact that voters are more incline to vote when there is "more at stake" in an election, helps us to understand why the turnout in the early phase of a democracy is usually higher. This is explained by the fact that the form of the new regime is going to be chosen in this election, so it has a greater importance for citizens' lives. In stark contrast with the "stakes-based hypothesis", the "disenchantment hypothesis" gives as an explanation for the higher initial turnout the "generalized enthusiasm and citizens' unrealistically raised expectations for the new democratic regime". The second theory is also linked with the subsequent decline in turnout because it states that the decline is caused by the confrontation with the reality of a democratic system that leads to a disenchantment and to a lower turnout.

The democratization context itself has a strong effect on the initial mobilization. Indeed, the way in which the democratic change occurred might have a strong effect on turnout, it seems obvious that if it came from an internal revolution or from an external international intervention

[8]Democratization is the the process in which an authoritarian regime adopts a democratic elected government. This process ends when the first democratic election takes place. Instead the democratic consolidation is the process in which citizens gets used to the new democracy.

the level of turnout would be different. Moreover, there are also intrinsic effect linked with the voting habits of the country, these are involved with the participation during the democratization phase, therefore the way in which the election were held before the democratization phase have a significant effect on turnout.

One of the possible reasons that Kostelka 2017 points out for the decline in turnout might be the "demobilizing mechanism" that is linked with the disenchantment hypothesis. This mechanism captures the fact that the reasons that lowers turnout aren't present while a democratic regime changes but appears when it is fully consolidated. As a matter of fact, Kostelka 2017 describes this disenchantment in the perfect way "when people realize that democracy is not a panacea for all social and economic problems and that the power of the people to affect decision-making is limited, their political efficacy and their willingness to vote will decrease", of course the disenchantment hypothesis is not based solely on the psychology of the voters, but also on the actual performance of the new democracy, hence, the worse the performance of the new government the lower the level of political participation.

Other factors that might have a strong impact on the decline of turnout might be liked with the generational change of voters. In fact, it doesn't seem plausible to assume that the citizens' characteristics are unchanged throughout generations. As we all know, in the last 50 years there have been strong changes in the technological, economical and social aspects of everyday lives. Moreover, citizens are on average better educated and informed on politics. It seems that these global changes have had an effect on the political engagement and have shifted citizens' preferences of political participation from electoral voting to other forms of political participation (Vetter 2015, Jackman 1987, Kostelka 2017).

1.5 First and Second Order elections

Nowadays, in most countries, the responsibilities of a government are split between the supra-national, the national and sub-national level. These different authorities are directly elected by citizens; hence it is possible for the population to choose national, local and supra-national (i.e. European) representatives.

Reif and Schmitt 1980 developed the concept of First and Second Order elections that explains the different attitudes to elections for the various level of authorities. Citizens give a greater importance to the First order election and thus the turnout is expected to be higher than in the Second order election. The literature agrees that National election are First order elections, whereas the Second order election usually comprehends all the other types of election (Munici-

pal, Provincial, Regional and European elections).

One of the most relevant characteristics of the Second order election is that there is "less at stake" since the supra-national and sub-national authorities have lower power and fewer responsibilities than national parliaments. In fact, most of the times, the authority of the Second order election could not decide the tax level or the level of public services that citizens are going to have (Mattila 2003), the population understands this and give to the Second order election a minor importance than to the national election. "Since less is at stake in secondary elections, fewer voters may consider them sufficiently important to cast ballots" (Reif and Schmitt 1980), for this reason the lower importance of this type of elections diminish the level of overall participation; however, this reduction is also explained by the fact that parties themselves are less interested in votes and mobilize less citizens than in national elections. Media too are less involved in Second order elections, in fact, they normally give less coverage to Secondary elections and "a generally subdued campaign means that fewer voters may even learn that elections are being held" (Reif and Schmitt 1980). Media might be interested in Second order election for other reasons than the elections itself, in fact, they might use this election results as a proxy of citizens' opinions on the government performance. Voters might use Second order elections to reward or punish the national government rather than expressing their real preference (Cabeza 2018).

The less at stake dimension implies that voters tends to casts their vote less strategically. We can safely assert that in more important elections citizens may prefer bigger or more established parties in the general area of their political preference. They might prefer more established parties that doesn't represents perfectly their preferences because they think that these parties have an higher chance of winning an election rather than a niche party. However, they might actually prefer a smaller or a newer political party and, since there is less at stake in a Second order elections, they are more prone to show their real preference[9]. For this reason bigger parties tend to gain a lower share of the votes than in First order elections and usually the government party does loose votes as Reif and Schmitt 1980 proved in their article.

In Second order elections most of the voters tend to choose who to vote for by taking into account factors that are linked with others electoral levels, this means that when voting for the European Parliament many citizens cast their vote thinking about national level issues and not focusing on the European level issues. A complex institutional setting with many levels of different authorities makes it harder for the population to get the relevant information about the responsibilities, the policies and the performances at each level (Cabeza 2018). For this reason, the population might decide that acquiring these information is too costly and would prefer to

[9]Heath and Ziegfeld 2018 empathized the fact that since there is less at stake in a Second order election voters are less worried to waste their vote, for this reason they are more prone to vote for parties that have no real chance to actually form a government like a new or a small party.

infer their political choices from the national level for all the other electoral levels.

In more recent studies, Regional and Local elections seems to have a different behaviour than expected by Second order nature elections. Level-specific considerations are taken into account by voters in these elections, for this reason many recent studies classify Local and Regional elections in between First and Second order elections. In this line, Heath et al. 1999 says "if the elections to the European Parliament are regarded as second-order, then we might think of elections to local councils as 'one and three-quarters order'".

Cabeza 2018 study is focused in the micro-foundations of First order thinking in Second order elections[10] and by using a self reported Spanish survey, adjusted by the actual individual behaviour, she was able to prove that First order thinking was high in Regional and Local elections, whereas, in European elections is rather unusual[11]. Moreover, individual that have an higher level of education or a higher level of political awareness are more likely to increase First order thinking in all types of elections.

1.6 Concurrent elections

Literature on turnout confirms the positive and significant effect of concurrent elections on turnout. Concurrent elections do increase the decisiveness of the votes' results "with regard to the distribution of power and policy-making authority in the political system, thus creating stronger incentives for parties to mobilize and for voters to participate in the electoral exercise." (Nikolenyi 2010). On the other hand, it is proved that by separating elections the level of turnout would be lower and, as we have already discussed, a low turnout leads to a bad representation of citizens' political preferences.

However, in most federal states concurrent elections are seen in a negative way; in fact, in countries like Canada or Australia the separation of elections on different levels of authority[12] is regulated by law. In Australia the separation of the elections is ruled by the Commonwealth Election Act of 1918, whereas in Canada it is simply a convention to preserve the autonomy of the different levels authorities. In federal states it is usual to keep separate national and sub-national elections because federal states believe that this distinction safeguards the autonomy of

[10]Here Cabeza 2018 focus her research on individual level factors that affects citizens to vote thinking about specific level issues.

[11]In fact, Cabeza 2018 reports "whereas only a minority takes European issues into account when voting in European elections, most people report that local and regional issues determine their behaviour in local and regional elections, respectively". She proved that First order thinking in European elections might happen in the case of a positive opinion for the EU, to confirm this result the probability of First order thinking between Eurosceptics is really low.

[12]The so called vertical alignment.

both of the national and state level authority (Nikolenyi 2010).

In Nikolenyi 2010 article, it was discussed the change in timing of elections for the federal case of India. This change resulted in the separation of national and sub-national elections that until 1971 were held in a concurrent election. Separate elections of national and sub-national pools in India have lead to the formation of new local parties that were more responsive to local needs and to an higher autonomy for the federal states. However, separated elections have also resulted in a lower level of participation and on weaker incentives for the voting population when deciding whether to vote or to abstain from voting. The Indian case proves that the decline in turnout is one of the costs of the adoption of non-concurrent elections.

The general argument against holding concurrent elections for more levels of authorities[13] or holding all the elections for the same level across all states in the same day[14] is the loss of autonomy for the less relevant election. This is due to the fact that the "more at stake" election might get more attention and people might vote not thinking about the responsibilities and competences of the authorities they are voting for but, as we already have discussed before, by inferring informations from the "more at stake" election. This would imply that the election results would be more uniform vertically as national parties would exert an higher mobilitizational effort and media would give an higher coverage to national parties rather than local parties.

Nevertheless, this does not always happens, for example, as Vetter 2015 explains in the case of German states local elections concurrent to national election: " the option to cumulate and split votes in local elections in many states today weakens the influence of parties and places greater weight on individual candidates. Thereby national parties' impact on local electoral results is less strong than might be expected.". In stark contrast with common literatures' knowledge, Vetter 2015 affirms that "a stronger vertical and/or horizontal alignment would not only lead to higher local turnout, but local politics would generally be awarded a more visible role in the multi-level political decision making process in Germany.".

It would be interesting to see how the timing of Second order elections, being concurrent or separate from First order elections, have an effect on turnout. Which would be the effect of a Second order election on the turnout of a First order one and vice-versa? How does the turnout of two Second order concurrent election behaves? Vetter 2015 addresses these questions in her publication, in fact, she investigates whether combining local and European elections does have an effect on citizens' perceptions on the importance of these elections, and if concurrent elections of local and European level authorities does increase overall turnout. The study argues that organizing combined elections is more cost efficient than running two different elections

[13]The so called vertical alignment.

[14]The so called horizontal alignment.

both for the monetary costs that the government have to bear and it is also cost efficient from the point of view of voters. In support to this statement, voters might feel that there is more at stake in concurrent elections and their voting costs' are reduced, indeed, it is more costly to go to the pooling station and cast two votes in different days rather than cast two votes in the same day in the same electoral office. For these reasons the opportunity of casting two votes in one trip increase citizens' willingness to vote, Vetter 2015 article results prove that a concurrent elections of a local and a European Parliament election does increase turnout by an average of 3% to 4% points when compared to separate elections.

Chapter 2

Italian electoral system

As defined by Cox 1999, the electoral system of a country is the set of rules that determines how politicians are elected in the various level of authorities and how the votes are counted to determine the final outcome. In this chapter we are going to summarize the main aspects of the Italian electoral system. After the discussion on these main characteristics, we are going to focus in separate sections on the rules of the elections that will be relevant in our analysis.

Since 1945 the whole Italian population was entitled to vote[1] and from 1975 the voting age was lowered from 21 to 18 years for most of the elections, nowadays, only the Senate of the Republic still requires citizens whose age is above 25 years to vote for its composition[2].

The Chamber of Deputies is composed by 630 deputies, any citizen could be elected as deputy if he meets two main requirements: being at least 25 years old and not being disqualified from the public offices[3]. Whereas, the Senate of the Republic is composed by 315 senators and each region couldn't have less than 7 senators[4]. A citizen to be eligible to become a senator should met the same requirements as a deputy, the only difference is that the required age is at least 40 years of age[5].

Both the Chamber of Deputies and the Senate of the Republic are elected every five years in a concurrent election, this election might be postponed only in case of war[6] and could be called in less than five years only on extraordinary cases[7].

It is possible to vote from abroad for the Chamber of Deputies, the Senate of the Republic and for the European elections[8], on the other hand, it is not possible for Regional, Provincial and

[1] Hence female were entitle to vote too.

[2] For further details please refer to Article 48 and 58 of the Italian Constitution.

[3] For further details please refer to Article 56 of the Italian Constitution and article 28 of the Italian Penal Code.

[4] With the exception of Molise and Valle d'Aosta that have 2 and 1 senator respectively.

[5] For further details please refer to Article 57 and 58 of the Italian Constitution and article 28 of the Italian Penal Code.

[6] For further details please refer to Article 60 of the Italian Constitution.

[7] As it happened in 2008 elections.

[8] For further details please refer to Article 48 of the Italian Constitution.

Municipal elections; in fact, if an Italian citizen desire to vote for one of those elections, the only way is retuning to Italy and asking for the possibility to vote in its own Municipality.

2.1 Chamber of Deputies election

The Chamber of Deputies elections that are relevant in our analysis are the 2008 and 2013 elections which refers to the same law: Calderoli law, that is also called "Porcellum".
The law n. 270 of 21 December 2005 (Calderoli law) was used for the 2006, 2008 and 2013 elections, in January 2014 some of its parts were declared against the Italian Constitution and it was fully abrogated in 2017. The most discussed features of this law were the closed lists and the Majority premium.
During the political campaign parties have to submit their political agenda and decide which of the party components would be the leader of the party. Parties might decide to form a coalition and, if they do so, they should indicate who would be the leader of the whole coalition.
Citizens are able to vote only for fixed lists of candidates, making it impossible to cast preferences. This gave parties a huge power to decide their internal compositions in the two Chambers. Once voted the seats were assigned to the coalitions and then to the lists on a proportional level with some restrictions. The threshold for a seat in the Chamber of Deputy was set at 4% for a party outside a coalition and at 10% for a coalition. Inside the coalition an ulterior threshold of 2% was set in order to get a seat.
The seats are then divided between the parties following the largest remainder method; in this method it should be defined the Hare-quota which is simply $Q = \frac{totalvotes}{totalseats}$ and from this quota it is possible to calculate the number of seats for the party i by $Seats_i = \frac{Votes_i}{Q}$. Most of the times the result is not an integer number, hence, the remaining seats are divided between the parties depending on $R_i = Votes_i - (ISeats_i * Q)$, in which $ISeats_i$ is the integer part of the previous expression. Each party is ordered in a decreasing manner depending the value of R and the remaining seats are assigned between the parties starting from the one with the higher value of R.
The 630 seats in the Chamber of Deputies were elected by three different circumscriptions:

- 1 seat was elected directly by Valle d'Aosta region.
- 12 seats were elected by Italian citizens that lived abroad through foreign voting. The foreign section had the possibility of casting a preference while voting, so they didn't have the closed lists like the rest of the Italian voters.

- 617 seats were elected by the rest of the Italian territory.

Finally, the party or coalition that received the most votes in the election, but wasn't able to reach by itself 340 seats was awarded the remaining seats through the majority premium taking the seats in a proportional way from other parties.

2.1.1 Chamber of Deputies: 2008 election

The 2008 election was called before its normal 5 years gap, it was anticipated due to the collapse of the Prodi's government that happened on the 6^{th} of February 2008. In fact, the previous election was in 2006 and the established government governed for only 2 years.
This election was held on Sunday 13 and Monday 14 of April, and the final turnout for the Italian territory[9] was of $80,51\%$[10].
Berlusconi's coalition won these elections but they were forced to leave the government due to the sovereign debt crisis to Mario Monti executive government in 2011.

2.1.2 Chamber of Deputies: 2013 election

The 2013 election was called after its normal five years gap between elections, however, it happened after the collapse of Berlusconi's government in 2011 and Mario Monti's executive government resignation in 2012. The law that ruled this political election was still Calderoli law even if there were pressures on the previous governments to change this electoral law.
The election was held on Sunday 24 and Monday 25 of February and the final turnout for the Italian territory[11] was of $75,20\%$[12]; the turnout was indeed lower than the previous political election.
In this elections there were four main coalitions:

- Bersani's coalition, which leader was selected through an internal election;
- Berlusconi's coalition, whose return to the political arena stopped the internal election process for the selection of the coalition's leader;

[9]Excluding foreign voting, which turnout was only $38,95\%$, and Valle d'Aosta region, which turnout was $83,45\%$.
[10]Data available from the Ministry of the Interior in the "Archivio storico delle elezioni".
[11]Excluding foreign voting, which turnout was only $31,59\%$, and Valle d'Aosta region, which turnout was $76,96\%$.
[12]Data available from the Ministry of the Interior in the "Archivio storico delle elezioni".

- Grillo's coalition, a new coalition whose possible parliamentary members were chosen through an internal election between the members of the five stars party that haven't already run in previous elections;

- Monti's coalition, that decided to continue its political work after the resignation in 2012.

The final result of the election was really peculiar: the Chamber of Deputies election was won by Bersani's coalition with only a $0,3\%$ difference with the second most voted party, nevertheless, their coalition gained the majority premium. In the Senate of the Republic, instead, the majority wasn't reached by any party. This problem was solved with the establishment of Letta's government in which Bersani's coalition and Berlusconi's coalition ruled the country together.

2.2 European election

The European elections in Italy are regulated by Law of 24 of January 1979, n. 18, also called "Elezione dei membri del parlamento Europeo spettanti all'Italia" that was slightly modified by Law 20 February 2009, n. 10, that introduced a threshold of 4% to be elected and by Law 22 of April 2014, n. 65, in which they implemented some rules for gender parity in the three preferences that might be cast in the election.
Citizens that are entitled to vote are any Italian citizen that are at least 18 years old and that are registered in the voting lists; moreover, it is possible to vote for any European citizen that has formally requested to do so in the municipality where they do live. Any citizen, Italian or European, can be elected if the required age of 25 years old is met and if he isn't already working for an incompatible position[13].
It is possible for Italian citizens that live abroad to vote in three ways: they might return to Italy to vote, they might request to vote from abroad in the Italian consulate or they might request to vote for the representatives of the European country in which they live.
The Italian territory is divided in 5 circumscription: North-Oriental Italy, North-Occidental Italy, Central Italy, Southern Italy and Insular Italy. The 73 seats of the European parliament are divided between the five circumscription in a proportional way depending on the number of citizens living in that circumscriptions as reported in the most recent census. Voters are able to cast three preferences in their circumscription, however, as stated in Law 22 April 2014 n. 65 those preferences couldn't be for three candidates of the same gender, in fact if this is the case, the third preference is eliminated.

[13]For further details please refer to Article 3 and 4, Title II, of Law 24 of January 1979, n. 18.

As already mentioned before, lists should reach at least the threshold of 4% to gain seats in the European parliament and those seats are divided between the elected following the largest remainder method[14].

2.2.1 European election of 2014

The European election of 2014 was held on Sunday 25^{th} of May. The overall turnout of the election for the Italian territory was of $58,69\%$ and the turnout for Italian citizens voting from foreign countries was of $5,92\%$. The most voted party was "Partito Democratico", whose leader was the Prime Miniser of Italy Matteo Renzi, with the vote share of $40,82\%$ and resulting seats of 31 out of the 73 for the Italian territory[15]. The two others most relevant parties for vote share and resulting seats were Five stars movement[16] and "Forza Italia"[17].

2.3 Regional and Municipal elections

For what concerns the Regional and Municipal elections, in our analysis we are interested in the fact that citizens to be entitle to vote should be at least 18 years old, hence the same entitled voters of the Chamber of Deputies election and of the European election. Furthermore, it is important to underline that the usual gap between two Regional election or two Municipal election is 5 years, this gap can be reduced only in extraordinary cases like for the national elections. On the other hand, it is not possible for Regional and Municipal elections to vote from abroad.

[14]For further details please refer to "Chamber of Deputies election" section.
[15]Data available from the Ministry of the Interior in the "Archivio storico delle elezioni".
[16]With share of votes of $21,16\%$ and resulting seats of 17.
[17]With share of votes of $16,81\%$ and resulting seats of 13.

Chapter 3

Data

The data used for the analysis are derived from three different sources. Mainly, the required data for the core analysis is available in the "archivio storico delle elezioni" that is held in the website of the Italian Ministry of the Interior. The second data source is a set of databases from ANCITEL, that is an association that provides services for the "Associazione nazionale dei comuni italiani" (ANCI). The last source is ISTAT website for the regional GDP.

3.1 "Archivio storico delle elezioni" databases

The "archivio storico delle elezioni" is an online data source in which it is available to the public the complete list of the results of any electoral consultation since 1946 for the "Assemblea Costituente", since 1948 for the Chamber of Deputies and Senate of the Republic elections, since 1979 for the European elections and since 1970 for Regional, Provincial and Municipal elections. The informations available in this online data source is based on the "Direzione Centrale dei Servizi Elettorali" documentation.
For the analysis, six databases were requested from the Ministry of the Interior data source:

- The 2008 Chamber of Deputies election ballots;
- The 2008 Municipal election ballots;
- The 2013 Chamber of Deputies ballots;
- The 2013 Regional election ballots;
- The 2014 European election ballots;
- The 2014 Municipal election ballots.

These six databases have a common structure, in fact they all report the same information on a municipal level for the various elections. After the basic information on the date and type of election, it is reported the circumscription if needed (i.e. in European elections), the region, the district and the municipality for which the data are reported.

The data collected for each municipality is the number of eligible voters, which are the citizens eligible by law to vote who are registered in that municipality as voters, and the number of male eligible voters from which number we can infer the number of female voters. Then it is reported the actual number of voters, the actual number of male voters, the number of empty voting sheets and the number of valid votes.

In the case of municipal elections there might have been more than one observation for some municipalities, in fact if there has been a second election pool due to a non decisive result in the first election another observation was reported for the second ballot; however, we are not interested in this information and we have dropped the second observation.

It is evident from Table 3.1 that the number of municipalities does change in the three national elections.

Table 3.1: Municipalities

Election	**Year**	**n. of municipalities**
Chamber of deputies	2008	8027
Chamber of deputies	2013	8018
European	2014	7983
Municipal	2008	423
Regional	2013	2058
Municipal	2014	3918

The table shows the number of municipalities in each database after excluding Valle d'Aosta municipalities.

In the analysis and in this table we have excluded Valle d'Aosta region because, being an autonomous region, it has a different regulation in the Chamber of Deputies election and, since this might involve a bias in our analysis, we have excluded it.

The difference in the number of municipalities in the national elections is given by the fact that some municipalities have disappeared or have been merged with other municipalities[1]. For example, between 2013 and 2014, 57 municipalities ceased to exist and 24 new municipalities were created by merging the ceased ones. The decision to remove or create a municipality is

[1]There are also few cases in which municipalities have been transferred from one region to another. An example is the case of seven municipalities (Casteldelci, Maiolo, Novafeltria, Pennabilli, San Leo, Sant'Agata Feltria and Talamello) that in 2009 were transferred, after a local referendum, from Marche to Emilia-Romagna region.

taken by the region itself after a "referendum consultivo" involving the local population[2].
The municipalities created by the fusion of the removed municipalities had the Municipal election on the 25^{th} of May 2014; however, we excluded from the sample all the municipalities in question. In fact, in order to have a coherent sample we have dropped from the final database the municipalities that have been removed or created between the first election in consideration[3] and the last one[4].
In Table 3.2 are reported the regions involved in the sub-national elections that we are using in our analysis. In the case of the 2013 Regional election as we have seen in Table 3.1 the municipalities involved are all the 2.058 municipalities in the three regions considered (Lazio, Lombardia, Molise). Whereas, in the 2008 Municipal election only 423 municipalities out of 15 regions were involved; similarly, in 2014, 3.918 municipalities have voted in 16 different regions.

Table 3.2: Regions involved in Local elections

Municipal - 2008	Abruzzo, Basilicata, Calabria, Campania, Emilia Romagna, Lazio, Liguria, Lombardia, Marche, Molise, Piemonte, Puglia, Toscana, Umbria, Veneto.
Regional - 2013	Lazio, Lombardia, Molise.
Municipal - 2014	Abruzzo, Basilicata, Calabria, Campania, Emilia Romagna, Lazio, Liguria, Lombardia, Marche, Molise, Piemonte, Puglia, Sardegna, Toscana, Umbria, Veneto.

The Table shows in which Regions there was an election in each election year. In the Regional election the regions involved were only three but all the municipalities in those regions have voted, instead in 2008 and 2014 Municipal elections the regions involved were respectively 15 and 16 but only some of the municipalities in those regions have voted.

In our analysis the dependent variable is the turnout, defined as the share of actual voters on eligible voters. We are interested in the turnout of the National elections. It is directly reported in the "archivio storico delle elezioni" that the overall turnout for the Italian territory[5] was:

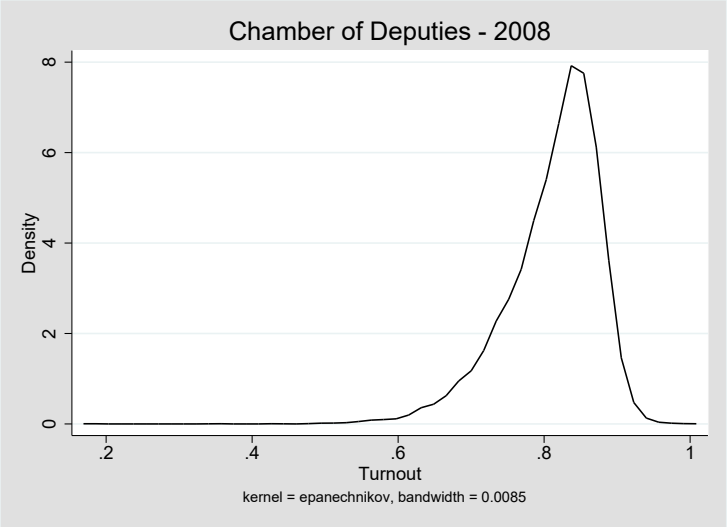
- 80, 51% in the 2008 National election;
- 75, 20% in the 2013 National election;

[2]For further details please refer to article 15 and 16 of D. Lgs n. 267/2000 "Testo unico delle leggi sull'ordinamento degli enti locali".
[3]In this case the elections of 2008.
[4]In this case the elections of 2014.
[5]We are considering the Italian territory without Valle d'Aosta region, hence we are not considering foreign voting too.

- 58, 69% in the 2014 National election.

These numbers seem coherent with turnout's literature, in fact, we see that there is a decline in turnout[6] and it seems quite clear the Second order nature of the 2014 election, that is an European election[7]. It is interesting now to see how the turnout, defined as the share between actual voters and eligible voters, on municipal level is distributed across the unrestricted sample. In Figure 3.1 it is plotted the kernel density distribution of the turnout across the municipalities in 2008 National election and in the following Table 3.3 are reported some relevant statistics.

Figure 3.1: Distribution of turnout for the 2008 Chamber of Deputies election



The graph plots the kernel density across municipalities of the turnout in the 2008 Chamber of Deputies election.

Table 3.3: 2008 - Chamber of Deputies election summary statistics

Observations	7.948
Mean	0,812
Standard Deviation	0,063
Skewness	-1,209

The sample of this analysis comprehends all the Italian municipalities with the exception of Valle d'Aosta region and the municipalities that have been removed or created between the 2008 election and the 2014 election.

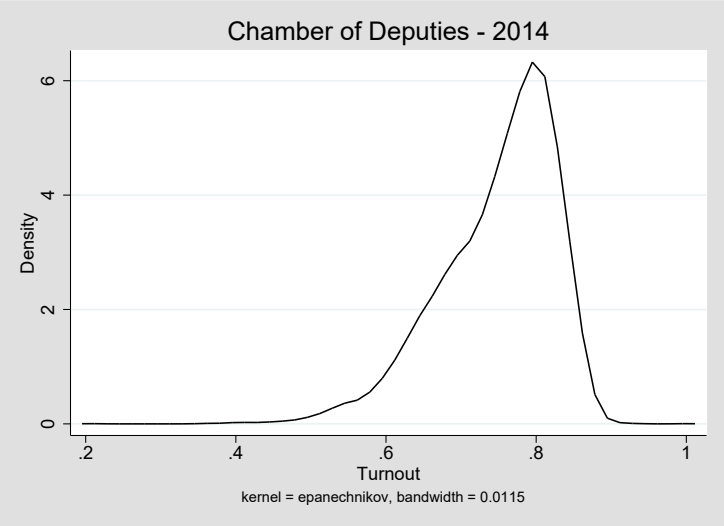
From this plot we have an idea of the distribution of turnout across the municipalities in 2008. It is possible to see in Table 3.3 that the average turnout of our unrestricted sample is $0,812$ with a standard deviation of $0,063$. Moreover, as we can see from the plot the distribution of

[6]As we have discussed in the section "Democracies and decline in turnout".
[7]As we have discussed in the section "First and Second Order elections".

turnout in the election has a long left tail, this is confirmed by the negative value of the Skewness $(-1,209)$. A long left tail means that most of the observations are concentrated in the right part of the graph, in fact most of the observations are close to the mean, this is confirmed by the low standard deviation.

Figure 3.2 and Table 3.4 show the same plot and statistics for the 2013 National election.

Figure 3.2: Distribution of turnout for the 2013 Chamber of Deputies election



The graph plots the kernel density across municipalities of the turnout in the 2013 Chamber of Deputies election.

Table 3.4: 2013 - Chamber of Deputies election summary statistics

Observations	7.948
Mean	0,749
Standard Deviation	0,077
Skewness	-0,969

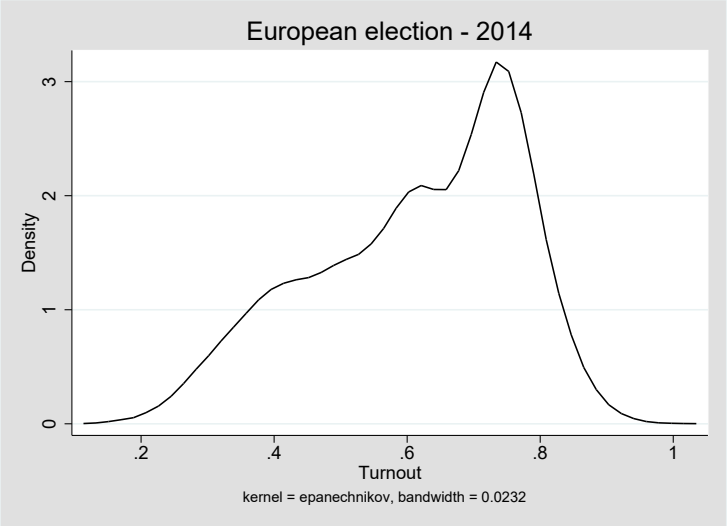
The sample of this analysis comprehends all the Italian municipalities with the exception of Valle d'Aosta region and the municipalities that have been removed or created between the 2008 election and the 2014 election.

In 2013 the average turnout is lower than in 2008, in fact, the average turnout is of $0,749$, a result that is quite close to the reported data in the "archivio storico delle elezioni", and the standard deviation is higher than the one calculated for the 2008 election since its value is of $0,077$. The plot still show a long left tail but it is less accentuated than before as we can see from the less negative value of the skewness $-0,969$.

Finally, Figure 3.3 and Table 3.5 show the distribution of municipal level turnout and the same

summary statistics for the 2014 National election.

Figure 3.3: Distribution of turnout for the 2014 European election



The graph plots the kernel density across municipalities of the turnout in the 2014 European election.

Table 3.5: 2014 - European election summary statistics

Observations	7.948
Mean	0,613
Standard Deviation	0,155
Skewness	-0,496

The sample of this analysis comprehends all the Italian municipalities with the exception of Valle d'Aosta region and the municipalities that have been removed or created between the 2008 election and the 2014 election.

In this graph it is easy to see that the 2014 National election is different in terms of turnout's distributions from the precedent National elections. This plot shows that there is a different approach of citizens when they have to decide whether to vote or opt out in European elections; this proves the Second order nature of the European election. In fact, it is evident from the average turnout of $0,613$ that voters are participating less than in the previous two cases and the higher standard deviation of $0,155$ proves that in different municipalities citizens tends to have a different participation. Moreover, even if the skewness of $-0,496$ in 2014 elections is still negative, there are way more municipalities that have a turnout so low that is not even comparable with the previous two cases.

We need to remember that the calculated value of the turnout is going to be different form the one reported in the Minister of the Interior website since we have already excluded from the

analysis the municipalities that have ceased to exist or that have been created in the 2008 - 2014 period and we have already removed from the European election Valle d'Aosta region.
The final number of municipalities that are present in our sample is 7.948, this is the number of municipalities that haven't changed in our selected period. For the analysis we are interested on how the turnout of the national level election is affected by a concurrent election in the case of a Local concurrent election to the National election of 2014 and, in an alternative setting, in the case of a Local concurrent election to the 2013 National election.
In the analysis we are not interested in the data for the Local elections (Regional and Municipal elections). We are not interested in their overall turnout or other possible data, we are instead interested in the fact that they happened in some municipalities in the same time to another election. For this reason, we are going to use the information on the Municipal and Regional elections as dummy variable to see if there has been a concurrent election in the municipality in question. To create this set of dummies the databases of the local elections were merged in Stata to all the national level election and the resulting three databases were then appended to form a unique database.

3.2 2011 ANCITEL databases

ANCITEL is the technological services provider for ANCI association; ANCI is the national association of Italian municipalities. The databases provided by ANCITEL report a wide range of informations for all the Italian municipalities in 2011. The data are provided by various sources, for example some of the data comes from the ISTAT population census of 2011. The data collected in these databases covers these characteristics for all the Italian municipalities on a municipal level: Agricultural aspects, Industrial and Services characteristics, Population characteristics and Income informations.
We have selected from these databases some informations that might influence voters behaviour. For the income characteristics of the municipalities we have selected the share of houses, families, employed citizens and cars on the municipal population. With regards to the characteristics of the municipality we have chosen the number of agricultural holdings, the numbers of employers in the service sector on the population and the ratio of job demand and job offer. Whereas for the characteristics of the citizens in the municipality we have selected the education level (Degree, High school and Elementary level of education), the share of male and female voters

on eligible voters, the age of the population[8] and the share of foreign citizens over the municipal population.

In order to test the fact that the municipalities that have voted in the 2014 municipal election are as good as randomly assigned we have implemented a balance test over these characteristics. We want that the sample is homogeneous between the treated and untreated municipalities; this is testable through a balance test. With a balance test you are regressing the treatment on the chosen characteristics; if the treatment is insignificant with respect to the characteristic you are testing for, the sample is balanced and the treatment is randomly assigned. For example, if we want to see if the number of houses is balanced with respect to the treatment[9] we are going to implement this OLS regression:

$$Houses_i = a_0 + a_1 L_i + bX_i + \epsilon_i \tag{3.1}$$

The parameter of interest is a_1[10], this coefficient should be non significant for the sample to be balanced. The controls (X_i) used in the regression are: Regional fixed effects, the mean altitude of the municipality, the population density in the municipality, the disposable income, the level of unemployment and the regional GDP. We have included time invariant controls at the municipal level to account for some fixed characteristics of the municipality. Since there is a problem of heteroskedasticity, as it is possible to check through the Breusch-Pagan test, we have calculated the robust standard errors to account the fact that the residuals' variance isn't constant.

In Table 3.3 are reported the results of the balance test. To see if the sample is balanced and if there aren't characteristics of the municipalities that makes it more likely to have a Local election in 2014 we have to focus on the significance of the Local election (L_i) coefficient; if it is insignificant the sample is balanced, if it is significant there might be problems in our analysis.

[8]The the share of age on the population has been divided in three level: Young if their age is between 0 and 14, Adults if their age is between 14 and 65, Old if their age is above 65.

[9]The treatment in our case is having the concurrent election in 2014, hence Municipal and European election.

[10]The treatment's coefficient.

Table 3.6: Balancing

Variables	**Municipal election**	**Standard Error**	**P-value**	**R2**
Houses	-0.023	(0.016)	0.159	0.347
Families	-0.001	(0.001)	0.603	0.588
Agricultural holdings	0.008***	(0.003)	0.002	0.294
Service sector employer	-0.009***	(0.002)	0.000	0.271
Employed	0.003**	(0.001)	0.022	0.758
Auto	0.001	(0.003)	0.776	0.364
Education: Degree	-0.002***	(0.001)	0.004	0.364
Education: High school	-0.002**	(0.001)	0.044	0.463
Education: Elementary	0.003**	(0.001)	0.030	0.621
Male voters	0.001	(0.000)	0.117	0.114
Female voters	-0.001	(0.000)	0.117	0.114
Job Demand/Offer	7.758***	(2.384)	0.001	0.100
Age: 0-14	-0.001	(0.001)	0.334	0.277
Age: 14-65	-0.002	(0.003)	0.444	0.228
Age: +65	0.001	(0.001)	0.338	0.409
Foreign citizens	-0.003**	(0.001)	0.018	0.453
Observations	4664			

Robust standard errors in parentheses

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

The variables are reported as the share over the population, only the share of voting man and female are the share over the eligible voters. The sample size is the same in each regression.

Most of the characteristics that we are testing for are balanced (not significant), however, some of them are not. For some characteristics the treatment has a small but significant effect, so it seems that the sample is not balanced for these characteristics. Nevertheless, we have to take into account the fact that we are implementing a multiple comparison, in fact we are performing multiple analysis on the same sample of data. By implementing multiple analysis on the same sample of data the family-wise error rate increase and the Type I error increase[11]. For this reason it might be appropriate to apply the Bonferroni Correction. In the Bonferroni Correction the p-value threshold to reject the null hypothesis is reduced by dividing the usual threshold by the number of statistical analysis performed (in our case it is necessary to divide the usual threshold

[11]Type I error: erroneously reject the null hypothesis when it is actually true.

by 16, the number of analysis performed on the same sample). In this way the threshold of rejection of the null hypothesis is lowered.

Since we are performing a multiple comparison to implement the balance test, it is probable that once reduced the p-value threshold for significance the characteristics of the municipalities that are now significant might become insignificant. For this reason it is probable that the sample is balanced between the treated and the untreated municipalities even if, without applying the Bonferroni Correction, some characteristics appears unbalanced.

Chapter 4

Empirical strategy

The purpose of this study is to asses whether multiple elections have a significant effect on turnout. Differently from the main literature on turnout we are going to analyse the aggregate response on turnout to a concurrent election, hence we are not interested on the voters' individual behaviours nor we are interested on the actual result of the election. For this reason we are going to focus on the municipal level turnout and how it is affected by the concurrence of two elections. Since we are using data on an aggregate level, the effect of concurrent elections on turnout can be found by using a Difference in Difference model (DD). A DD estimation consists on identifying the effect of a specific treatment through the comparison of the difference in the outcomes post and pre treatment for the groups affected by this treatment to the same difference for the groups unaffected by it (Bertrand, Duflo, and Mullainathan 2004).

In our analysis the regressors varies at municipal level, for this reason, also the unobserved cofounders do vary at municipal level and we have three years of observations on turnout for these municipalities. Thus, it makes sense to implement a strategy that uses data with a time or cohort dimension to control for unobserved but fixed omitted variables.

We are considering three National elections in three different years[1] and a Difference in Difference model is the perfect tool to deal with the time invariant cofounders and compute the causal effect of concurrent elections on turnout. Indeed, the DD model is appropriate when the bias is given by fixed factors and the regressor of interest varies only at a more aggregate level (Angrist and Pischke 2008).

The identifying assumption is that a common trend exists and in absence of treatment there wouldn't be deviations from this common trend. This means that in our case there should be a common trend in turnout in each of the three National election; we are interested in the slope of this trend, not in the intercept. In fact, even if the level of turnout is different in the three

[1] We are considering the Chamber of Deputies election of 2008, the Chamber of Deputies election of 2013 and the European election of 2014.

elections it is not a problem for our identification assumption to hold as long as the trend is the same. As Abadie 2005 points out the common trend hypothesis might be implausible if there are pre treatment characteristics that are associated with the outcome variable and if these characteristics are unbalanced through the two groups (treated and control groups). To be sure that our identifying assumption holds we are going to implement common trend tests and we are going to implement two robustness checks of our results.
The Differences in Differences model sets up a treatment control comparison[2] and, as Angrist and Pischke 2008 point out "one potential pitfall in this context arises when the composition of the implicit treatment and control groups changes as a result of treatment". This means that if there are spillovers from a municipality to another caused by the treatment, the results of the analysis are going to be biased. However, this problem, that could arise using a DD model, is not relevant in our analysis. In fact, in our case, we are reasonably sure that moving from a municipality to another and thus changing legal residence is not linked with the treatment itself. Indeed, it wouldn't make sense to change legal residence only to vote in a concurrent election.

4.1 The empirical model

In the baseline specification of our model we are using three years of data, we have the 2008 National elction, the 2013 National election and the 2014 National election. The structural equation of the baseline specification is:

$$Turnout_{mt} = a_0 + a_1 L_m + a_2 T13_t + a_3 T14_t + a_4 L_m T13_t + a_5 L_m T14_t + bX_{mt} + \epsilon_{mt} \qquad (4.1)$$

In which $Turnout_{mt}$ is the turnout level defined as actual voters on eligible voters, $T14_t$ is the dummy that identifies the 2014 National election, $T13_t$ instead identifies the 2013 National election, while L_m identifies the municipalities that had the Local election in 2014 (the concurrent election). The parameter of interest is a_5, which is the effect of multiple elections on turnout. We expect that a_4 is insignificant; in fact we expect that the municipalities in which there has been a Local election in 2014 shouldn't be different from the others municipalities that hadn't the election in 2013, the pretreatment year. Hence, if a_4 is insignificant the common trend hypothesis holds and the treated municipalities are randomly selected from the sample. We add the regional controls[3] and we allow for interaction for period and regions in order to allow for

[2]In our case the treatment group is composed by the municipalities that had the concurrent elections, whereas the control group is composed by the municipalities who didn't have the election.

[3]We are using 19 regional controls instead of 20 because we have excluded from the analysis Valle d'Aosta region.

temporal effects to vary at regional level[4]. Finally, ϵ_{mt} is the error term.

The base assumption of the Differences in Differences model is that there is a common trend, hence without the concurrent election the 2014 election should have had the same trend as the previous two elections. The common trend assumption do hold if the coefficient a_1 is close to zero and the municipalities that had the concurrent election are not different from the others that didn't have it in 2013 (a_4 should be insignificant).

We are including two additional specifications for our baseline. In the second specification we add to the model time invariant municipal characteristics that comes from the 2011 database (X_{mt}). The characteristics are the same discussed in the section "2011 ANCITEL databases". This means that we are controlling for the number of houses and auto in the municipality over the inhabitants, the number of families, agricultural holdings and service sector employers (how rural is the municipality), the employment level and the share of job demand and offer, the level of education of the population in the municipality, the numbers of eligible male and female voters, the age level of the population and the share of foreign citizens on the total inhabitants of the municipality.

This second specification should show if fixed characteristics of the municipalities do affect the treatment selection. If there is an effect of this characteristics the common trend hypothesis does not hold, whereas if these characteristics do not affect the treatment, the common trend assumption holds (a_1 does not change when we include controls).

In the third specification we are including in the analysis the municipality fixed effects. In this last specification, we are not including the 2011 municipal controls of the second specification because it wouldn't make sense since these characteristics are at municipal level and by accounting for the municipality fixed effects we are already considering them.

To solve for serial correlation issues we have clustered at the municipal level in all three specifications.

4.1.1 Pretreatment - verification of the common trend assumption

In the first robustness check we are focusing on two election years, the 2008 and the 2013 National elections. We a going to implement a simple Difference in Difference estimation in this two years, in which the treatment is still the 2014 concurrent election, hence we are testing the effect of a treatment that hasn't occurred yet. For this reason for the common hypothesis to hold we need that the effect of the treatment is null.

[4]This is done through a set of time-region dummy for 2013 and 2014 for the regions included in the regression. In our equation both the regional controls and the time-region dummies are included in X_{mt}.

The model in consideration will be therefore strucutred as:

$$Turnout_{mt} = a_0 + a_1 L_m + a_2 T13_t + a_3 L_m T13_t + bX_{mt} + \epsilon_{mt} \tag{4.2}$$

As before $Turnout_{mt}$ is defined as the ratio of actual voters on eligible voters. The variable $T13_t$ represents the National election of 2013. The variable L_m is a dummy variable that gets the value 1 if there has been the concurrent election in 2014, and this lets us divide the sample between treated municipalities ($L_m = 1$) and control municipalities ($L_m = 0$). The parameter of interest is a_3, which is the effect of a concurrent election in 2014 on the turnout of 2013. We expect that a_3 is insignificant for our assumptions to hold.

Moreover, as in the previous case, we are going to add the regional controls and we going to include the interaction between period and regions in order to allow for temporal effects to vary at regional level (X_{mt}). In this case the period-region interaction is only between 2013 and the 19 regions included in our sample.

As in our baseline, we are conducting two additional specifications for this robustness check. These two specifications are the same as in the baseline, in fact, in the second specification we are adding the municipal characteristics as controls and in the second we are including the municipality fixed effects.

Finally, to solve for serial correlation issues we have clustered at the municipal level in all three specifications.

4.1.2 Close elections - 2013 and 2014 national elections

In the second robustness check we are going to implement a Difference in Difference estimation for the years 2013 and 2014. This case is particularly interesting because, even if the two National elections considered are different[5] the proximity of the two elections make it less likely that there has been significant shocks that might have caused a deviation from the assumed common trend. Moreover, the vicinity of these two elections imply that it is likely that the political and economical aspects that might affect the municipalities are unchanged in this short time period.

The equation used for this estimation is:

$$Turnout_{mt} = a_0 + a_1 L_m + a_2 T14_t + a_3 L_m T14_t + bX_{mt} + \epsilon_{mt} \tag{4.3}$$

[5] A Chamber of Deputies election and an European election are different not only for the sets of rules that defines them but also for the perception that voters have on them as we have discussed in "First and Second Order election" section.

In which the $Turnout_{mt}$ is defined as the share of actual voters on eligible voters, $T14_t$ represents the 2014 National election and L_m is a dummy variable that identifies the municipalities that had the concurrent election in 2014, $L_m T14_t$ represents the interaction term of having an National and Local concurrent election in 2014. In this model we are adding regional level controls and ϵ_{mt} is the error term.

The coefficient a_2 shows the difference in turnout between the 2014 National election and the 2013 National election, assuming that the common trend holds, if this coefficient is significant it tells us that the trend between the two elections differs in the intercept. Whereas, the parameter of interest is a_3 which is the effect of the concurrent election on the 2014 National election turnout.

As in the previous two cases we are going to implement additional specifications. In the first we are going to add as control variables the 2011 municipal characteristics and if their inclusion in the model doesn't affect the a_1 coefficient we can say that there aren't municipal characteristics that makes it more likely that a municipality have a concurrent election. If the a_1 coefficient is not affected by the inclusion of these characteristics we can say that the concurrent election is random, hence the treatment is randomly assigned between the municipalities. If the treatment is randomly assigned through the municipalities, the common trend assumption holds and the results of this model are informative.

The third specification includes municipality fixed effects. In this specification the municipalities are treated as if they were included as dummy variables in the regression. We expect that the regional level controls are going to be omitted because of collinearity. Finally, as in the baseline and in the first robustness check cases we are going to cluster at municipal level to account for serial correlation.

4.1.3 An alternative setting

In 2013 there has been a Local election[6] concurrent to the National election in three regions: in Lazio, in Lombardia and in Molise. It is now interesting to see what is the effect of this different Local election on the turnout of the 2013 National election. We can already expect that the effect is going to be lower than the one of our baseline[7] since the National election of 2013 is a Chamber of Deputies election; it is a First order type of election and already have a high level of voters' participation.

In this specification we are using two years of data for implementing a Difference in Differences

[6]The Local election in consideration is a Regional election concurrent to the 2013 Chamber of Deputies election.

[7]European and Municipal concurrent election.

approach. We are going to use the 2013 National election as the one in which there is the treatment (the Local concurrent election) and the 2014 National election as the pre-treatment year. In this way we are switching the two years and for the purpose of the analysis we are treating the 2014 election as if it happened before the 2013 election. Hence, in this analysis the pre-treatment is in year 2014 and the treatment happens in 2013; in addition, the treatment is at regional level for the three regions that had the Regional election.
The model is therefore defined:

$$Turnout_{mt} = a_0 + a_1 L_m + a_2 T13_t + a_3 L_m T13_t + bX_{mt} + \epsilon_{mt} \tag{4.4}$$

As in the previous cases $Turnout_{mt}$ is defined as the share of actual voters on eligible voters, $T13_t$ identifies the 2013 National election, L_m represents the municipalities in which there has been the Local election in 2013[8], $L_m T13_t$ is the interaction term of having the simultaneous election at Local and National level in 2013, while ϵ_{mt} is the error term.
The parameter of interest is a_3, which is the causal effect of concurrent election on the 2013 National election turnout. We expect that this effect is lower than the one of our baseline because we are considering a First order election that should already involve a high number of voters.
In this case we are going to cluster at regional level, this type of clustering, even if it is necessary to deal with serial correlation issues, might give us biased standard errors since we are in the contest of few clusters. In fact, the Italian regions are only 20, way below the 42 threshold proposed by Angrist and Pischke 2008. Moreover, we are excluding from the sample Valle d'Aosta region since it has a different regulation for the Chamber of Deputies election and this difference might lead to biased results. For this reason, the total number of clusters is 19 so it is important to highlight that it is likely that the standard errors are going to be biased.
In this alternative setting we are going to implement two other specifications as in the previous cases. We are going to include in the second specification the 2011 municipal characteristics to test our common trend hypothesis but we are clustering at regional level. In the third specification we are still including the municipality fixed effects but we are going to cluster at regional level.

4.2 Inference issues

The Differences in Differences estimates and standard errors are computed through an Ordinary Least Squares regression in a repeated panel of data on a treated and a control group for at least

[8]Lazio, Lombardia and Molise.

one year before and after the treatment. The standard errors thus calculated are likely to be subject to a serial correlation problem that lead to a biased estimate of the standard errors.
Bertrand, Duflo, and Mullainathan 2004 discussed thoroughly how the Differences in Difference estimation can be subject to a relevant problem of serial correlation. This serial correlation biases the standard errors estimates and the magnitude of this bias is linked on how much the independent variable is serially correlated and on the length of the time series[9]; a positive serial correlation[10] in the error term causes a downward bias on standard error estimates, whereas a negative serial correlation is going to report an overstatement of the standard errors. Bertrand, Duflo, and Mullainathan 2004 identified three factors that make serial correlation an important issue to take into account in DD models:

1. usually DD estimation uses long time series;
2. the dependent variables in DD estimation are typically highly positively serially correlated;
3. The treatment variable changes only a little through the different periods. Usually, the treatment has value 0 until the treatment occurs and then changes its value to 1.

For this reasons, it is important to discuss serial correlation in DD models and choose a way to deal with it in the analysis.
In order to solve the serial correlation problem in our analysis we have clustered our standard errors at the municipal level[11] and calculated the robust standard errors in order to account for any within cluster correlation due to unobserved cluster effects[12]. Angrist and Pischke 2008 highlight that, in the case of heteroskedasticity of the regression residuals, robust standard errors lead to an asymptotically valid inference; however, they work well only in situations in which heteroskedasticy is really relevant. In addition, in cases in which there is a problem in correlation over time in the data, so a serial correlation problem, like it happens when estimating a DD method, the asymptotic approximation relies on a large number of clusters.
Another way proposed by Bertrand, Duflo, and Mullainathan 2004 to deal with serial correlation is to collapse the data into only two time periods, pre treatment and post treatment[13]. We are going to implement a specification that uses only two years but we are still going to use clustered data with robust standard errors. These two ways of accounting for serial correlation do work

[9]The longer the time series the the higher the bias might result.
[10]As in our case.
[11]It is important to cluster at the appropriate level, usually the most appropriate level to cluster is the most aggregate level feasible (Abadie et al. 2017). In this case it is appropriate to cluster at municipal level in the baseline model and at regional level in the alternative setting.
[12]As Wooldridge 2010 suggests, the clustering of our sample requires the use of White standard errors to account for heteroskedasticity.
[13]Bertrand, Duflo, and Mullainathan 2004 propose a third way to account for serial correlation: Randomization Inference. This procedure is not feasible for our analysis hence we won't consider it as a possible solution.

well only in case that the sample size is large enough and there is a sufficiently high number of clusters.

When econometricians deal with data presenting a group structure they have to remember that, if the regressors varies only at the group level, not accounting for this factor leads to a sharp increase of the standard errors. As Moulton 1990 points out there is a possibility that the "random disturbances in the regression are correlated within groups" and also a low level of correlation within groups can cause standard errors calculated through a OLS procedure to be downward biased; this biased standard errors "can result in spurious findings of statistical significance for the aggregate variable of interest".

The Moulton factor shows how much ignoring the intra class correlation actually leads to an overestimation of the precision. Using Angrist and Pischke 2008 notation, the Moulton factor is the square root of:

$$\frac{V(\hat{\beta}_1)}{V_c(\hat{\beta}_1)} = 1 + (n-1)\rho \tag{4.5}$$

In which n is the group size and ρ is the intraclass correlation, whereas $V(\hat{\beta}_1)$ and $V_c(\hat{\beta}_1)$ are respectively the regressions slopes of the correct sampling variance given the error structure and the conventional OLS variance formula for the regression slope. Here we are considering the special case where the regressors are fixed within groups and the group size is constant[14].

From this equation it is evident that the Moulton factor increases with group size (n) in a finite sample, this is due to the fact that the lager the groups the fewer the clusters. Fewer clusters indicate that there is less independent information in the sample (Angrist and Pischke 2008). When the correlation within the group is really high (ρ is high), clustering has a huge impact on standard error estimates, instead if there isn't a within group correlation the group structure is irrelevant.

A straightforward solution to this problem, between the ones summarized by Angrist and Pischke 2008, is to "generalize the White (1980) robust covariance matrix to allow for clustering as well as heteroskedasticity". This solution does work well when the clusters are a lot, however, in the case of few clusters the results are not as reliable.

Both in serial correlation contexts and in Moulton problems few clusters lead to biased standard errors. In fact, if our sample presents few clusters we are going to underestimate the intraclass correlation (ρ) in the Moulton problem or the serial correlation.

But how many clusters are necessary to get an unbiased result? Angrist and Pischke 2008 propose 42 clusters as a threshold, hence, if our sample has less than 42 clusters the results are likely to be unreliable. On the other hand, Pfaff 2013 suggests that the threshold below which

[14]Of course this equation can be generalized to account for different group sizes and to allow for regressors to vary on individual level, but to understand the basic idea of the Moulton factor this simplified case is enough.

"the bias become sizeable depends on the specific data structure" and suggest to run simulations in order to understand which is the appropriate threshold for the data in consideration. Cameron and Miller 2015 agree with Pfaff 2013, they confirm that the threshold for which clusters are too few might depend on the situation in consideration. In fact, they claim that few clusters might be between 20 to 50 depending on the case and the characteristics of the data in consideration. The ideal way to solve this problem would be to collect more data and gain more clusters, but this is not always feasible[15]. An interesting solution to this problem proposed by the literature is the use of block bootstrap since it works well both with Moulton problem and serial correlation problem.

[15]For example in our expansion we are clustering for regions, and the number of Italian regions if fixed and well below the 42 threshold proposed by Angrist and Pischke 2008. For this reason, it is not possible to acquire more clusters.

Chapter 5

Results

In this chapter we are going to focus on the results of our analysis and we are going to discuss if these results are coherent with our hypothesis and the literature. First of all, we are going to focus on the baseline, then on the two robustness checks and, finally, we are going to present the alternative setting results.

5.1 Baseline results

The baseline of the analysis is a DD estimation for three years, the National elections of 2008, of 2013 and of 2014. As we can see from Table 5.1 the number of observations in this sample is 13.992, this means that there are 4.664 municipalities and, hence, 4.664 clusters in our sample. For conducting this analysis we had to reduce our sample size to be sure that the results wouldn't be biased. In fact, we have excluded form the sample Valle d'Aosta region since it has a different regulation than the other regions in the Chamber of Deputies election. Moreover, we have excluded from the analysis Friuli-Venezia Giula, Trentino-Alto Adige and Sicilia regions since in these three regions there hasn't been the Local election in 2014 and their inclusion in the analysis wouldn't be informative since we wouldn't have a treated and control group in the same region. Finally, we have excluded from the analysis all the municipalities that have had a Local election concurrent to the National one in 2008 and in 2013[1].
In Table 5.1 we can see the results of the baseline analysis for the three specifications described in the "empirical model" section.

[1]As we have pointed out in the section "Archivio storico delle elezioni databases", in 2008 there has been a Municipal election in 423 municipalities concurrent to election of interest, whereas, in 2013 there has been a Regional election in 2.058 municipalities concurrent to the Chamber of Deputies election.

Table 5.1: Baseline

	First specification	Second specification	Third specification
	Turnout	Turnout	Turnout
Local election (L_m)	0.006***	0.005***	-
	(0.002)	(0.002)	-
National election 2013 ($T13_t$)	-0.039***	-0.039***	-0.039***
	(0.002)	(0.002)	(0.002)
National election 2014 ($T14_t$)	-0.312***	-0.312***	-0.312***
	(0.003)	(0.003)	(0.004)
National 2013*Local ($L_m T13_t$)	0.002	0.002	0.002
	(0.002)	(0.002)	(0.002)
National 2014*Local ($L_m T14_t$)	0.194***	0.194***	0.194***
	(0.003)	(0.003)	(0.004)
Municipal fixed effects	NO	NO	YES
Time-region interaction	YES	YES	YES
Municipal controls (2011)	NO	YES	NO
Constant	0.787***	0.718***	0.795***
	(0.003)	(0.036)	(0.001)
Observations	13,992	13,992	13,992
R-squared	0.762	0.801	0.908

Robust standard errors in parentheses

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

In the Table we have reported if we have used municipal fixed effects, region-year interactions to let time effects to vary across regions and if we have included municipal level characteristics as controls in the regression.

Let's now focus on the effect of the 2014 concurrent election on the 2014 National election turnout. The effect reported in the Table is positive and significant in all the three specifications and it shows that the Local election concurrent to the National election boost its turnout by $19,4\%$[2]. This means that, if the assumptions of the model hold, a concurrent Local election to an National election actually boost turnout in a significant way.

But does the common trend assumption hold in the model? From the results in Table 5.1 we

[2]From Table 5.1 it seems that all the three specification gives the same result for the effect on turnout, whereas in Stata the result is really close but not equal, they are equal when rounded to the third decimal place.

are confident to say that the common trend assumption holds. First of all, the coefficient of the Local election (in our model a_1) is close to zero in the first specification and its value is not strongly affected by the inclusion of municipal characteristics in the second specification[3]. This means that being treated, hence having the concurrent election, does not depend on some municipal characteristics but is mostly random. If the municipalities that had the concurrent election are randomly selected the common trend hypothesis holds and this give us the certainty of identifying a causal effect in our model.

Furthermore, by including in the regression the interaction between the treated municipalities and the 2013 National election (a_4 coefficient) we are implementing another test for the common trend hypothesis. The fact that the coefficient is insignificant tells us that our assumption holds and that the treated municipalities hadn't a different behaviour from the others in the year before the concurrent election. As a result, the fact that both common trend hypothesis tests hold in all three of the specifications makes us more confident of our results.

It is now interesting to have a look at the coefficients a_2 and a_3 that shows how the turnout in 2013 and 2014 respectively differs from the turnout of the 2008 National election. Before going on with the discussion, it is important to highlight that from the previous tests we can say that the trends in these three elections are parallel between each others[4] and that they are following a common trend, however there might be a difference in the intercept between these three elections. From Table 5.1 we can say that in the 2014 National election the overall turnout was $31,2\%$ points lower than in the 2008 election, whereas, the 2013 National election has a turnout of $3,9\%$ points lower than the 2008 election.

The lower turnout in 2013 and 2014 points out to two issues that we have discussed in the "Literature review" chapter. It is quite clear that in the period of consideration (2008 to 2014) there has been a decline in turnout and that the 2014 National election, that is an European election, is a Second order election, in fact, a turnout of $31,2\%$ point lower than the 2008 National election can be explained only by the fact that voters think that there is less at stake in this election.

From this analysis we can say that the effect of a simultaneous Local election to the Second order National election in 2014 have a strong effect on turnout and the concurrent election boost turnout by $19,4\%$ points.

[3]In the third specification the coefficient of the municipal election is omitted because of collinearity; this is going to happen in all the regression in which we account for municipal fixed effects.

[4]Since the common trend assumption was verified.

5.1.1 Differences in North, Center and South Italy

Since the Italian nation is composed by regions that are actually different between each others it is interesting to split Italy between Northern, Center and Southern regions and repeat the same analysis in order to see if there are differences in the response to concurrent elections in the different areas.

The model used in this analysis is the same as the one used in the baseline, the sample is the same, but we have used only the Northern regions in the first case, the Center regions in the second case and the Southern regions in the third case.

We can expect that there are going to be some differences not only in the effect on turnout of the 2014 Local and National concurrent election, but it is likely that there are going to be differences also in the turnout of the 2013 and 2014 National elections compared to the one of the 2008 National election. If that is the case, it means that there are difference between Northern, Center and Southern regions in citizens' voting behaviour.

Since we have excluded some regions from our baseline sample, the regions in the North case are: Liguria, Piemonte, Emilia Romagna and Veneto. The total number of municipalities, hence clusters, is 2.253. Whereas the number of observations is 6.759 since we are implementing an analysis on three years of National elections data. The Center regions considered in the analysis are: Marche, Toscana and Umbria. The total number of municipalities, hence clusters, is 574. This means that the total number of observations in the center regions sample is going to be 1.722 since we are considering three years of data. Finally, the Southern regions considered in the analysis are: Abruzzo, Basilicata, Calabria, Campania, Puglia and Sardegna. The total number of municipalities, hence clusters, is 1.837 and the total number of observations is 5.511 since we are considering three years of data.

It's important to point out that in the North, Center and South cases the common trend assumption still holds since in all the three cases the Local election coefficient is close to zero and is unaffected by the inclusion of the 2011 municipal controls, moreover, the municipalities that had the concurrent election in 2014 have the same behaviour as the others in the pretreatment year (2013). For this reason we are sure that the common trend assumption holds and that there are not municipal characteristics that makes it more likely to be treated.

In Table 5.2 we can see the results of the analysis for the Northern regions with the three specifications described in the "empirical model" section.

Table 5.2: North

	First specification	Second specification	Third specification
	Turnout	Turnout	Turnout
Local election (L_m)	0.004*	0.004**	-
	(0.002)	(0.002)	-
National election 2013 ($T13_t$)	-0.039***	-0.039***	-0.039***
	(0.002)	(0.002)	(0.002)
National election 2014 ($T14_t$)	-0.282***	-0.282***	-0.282***
	(0.003)	(0.003)	(0.004)
National 2013*Local ($L_m T13_t$)	0.002	0.002	0.002
	(0.002)	(0.002)	(0.003)
National 2014*Local ($L_m T14_t$)	0.146***	0.146***	0.146***
	(0.003)	(0.003)	(0.004)
Municipal fixed effects	NO	NO	YES
Time-region interaction	YES	YES	YES
Municipal controls (2011)	NO	YES	NO
Constant	0.853***	0.921***	0.821***
	(0.002)	(0.061)	(0.001)
Observations	6,759	6,759	6,759
R-squared	0.589	0.687	0.855

Robust standard errors in parentheses

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

In the Table we are including only the Northern regions of the baseline model sample. Hence, the regions included are: Liguria, Piemonte, Emilia Romagna and Veneto.

From the results of the Table 5.2 we see that the concurrent Local election boost the turnout of the 2014 National election by $14,6\%$ points. This result is a bit lower than the one of our baseline. The decrease in turnout from the 2008 National election to the 2013 National election is the same one on the main analysis ($3,9\%$), instead the decrease in turnout of the 2014 National election is a bit lower ($28,2\%$).

In Table 5.3 we can see the results of the analysis for the Center regions with the three specifications described in the "empirical model" section.

Table 5.3: Center

	First specification	Second specification	Third specification
	Turnout	Turnout	Turnout
Local election (L_m)	0.010***	0.009***	-
	(0.003)	(0.002)	-
National election 2013 ($T13_t$)	-0.057***	-0.057***	-0.057***
	(0.003)	(0.003)	(0.004)
National election 2014 ($T14_t$)	-0.228***	-0.228***	-0.228***
	(0.006)	(0.006)	(0.007)
National 2013*Local (L_mT13_t)	-0.001	-0.001	-0.001
	(0.003)	(0.003)	(0.004)
National 2014*Local (L_mT14_t)	0.161***	0.161***	0.161***
	(0.005)	(0.005)	(0.006)
Municipal fixed effects	NO	NO	YES
Time-region interaction	YES	YES	YES
Municipal controls (2011)	NO	YES	NO
Constant	0.824***	0.918***	0.836***
	(0.003)	(0.095)	(0.001)
Observations	1,722	1,722	1,722
R-squared	0.696	0.750	0.879

Robust standard errors in parentheses

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

In the Table we are including only the Northern regions of the baseline model sample. Hence, the regions included are: Marche, Toscana and Umbria.

In Table 5.3 we see that the concurrent Local election boost the turnout of the 2014 National election by $16,1\%$ points, a results that is still lower than the one that we have found in our baseline model. This might mean that the Southern regions are the ones in which the effect of a concurrent election is higher, we are going to see in Table 5.4 if this is the case.

Differently from the previous case the decease in turnout in 2013 is of $5,7\%$ points whereas the decrease in turnout in the 2014 National election is of $22,8\%$ points.

In Table 5.4 we can see the results of the analysis for the Southern regions with the three specifications described in the "empirical model" section.

Table 5.4: South

	First specification	Second specification	Third specification
	Turnout	Turnout	Turnout
Local election (L_m)	0.007**	0.007**	-
	(0.003)	(0.003)	-
National election 2013 ($T13_t$)	-0.057***	-0.057***	-0.057***
	(0.002)	(0.002)	(0.003)
National election 2014 ($T14_t$)	-0.362***	-0.362***	-0.362***
	(0.003)	(0.003)	(0.004)
National 2013*Local ($L_m T13_t$)	0.002	0.002	0.002
	(0.003)	(0.003)	(0.003)
National 2014*Local ($L_m T14_t$)	0.263***	0.263***	0.263***
	(0.006)	(0.006)	(0.007)
Municipal fixed effects	NO	NO	YES
Time-region interaction	YES	YES	YES
Municipal controls (2011)	NO	YES	NO
Constant	0.786***	0.611***	0.749***
	(0.003)	(0.065)	(0.001)
Observations	5,511	5,511	5,511
R-squared	0.787	0.820	0.918

Robust standard errors in parentheses

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

In the Table we are including only the Northern regions of the baseline model sample. Hence, the regions included are: Abruzzo, Basilicata, Calabria, Campania, Puglia and Sardegna.

As we can see in Table 5.4 the effect of a concurrent election on the 2014 national election turnout is the highest, in fact, the concurrent election boost turnout by $26,3\%$ points. The decrease in turnout is the same as the center regions in the 2013 National election, whereas the decline in turnout of the 2014 National election compared to the one of the 2008 National election is of $36,2\%$ points. It is clear that there are differences between North, Center and South Italy, but is is important to remember that in all the three cases the turnout actually increases thanks to a concurrent election.

5.2 Pretreatment - verification of the common trend assumption results

In the first robustness check we are going to implement a DD estimation on two years, the 2008 and the 2013 National elections. The sample is formed as in our baseline analysis but the number of observations is lower (9.328) since we are focusing on only two years of data instead of three. In Table 5.5 we can see the results of the analysis for the three specifications described in the "empirical model" section.

Table 5.5: Pretreatment - verification of the common trend assumption

	First specification	Second specification	Third specification
	Turnout	Turnout	Turnout
Local election (L_m)	0.006***	0.004***	-
	(0.002)	(0.002)	-
National election 2013 ($T13_t$)	-0.039***	-0.039***	-0.039***
	(0.002)	(0.002)	(0.002)
National 2013*Local ($L_m T13_t$)	0.002	0.002	0.002
	(0.002)	(0.002)	(0.002)
Municipal fixed effects	NO	NO	YES
Time-region interaction	YES	YES	YES
Municipal controls (2011)	NO	YES	NO
Constant	0.787***	0.761***	0.795***
	(0.003)	(0.035)	(0.000)
Observations	9,328	9,328	9,328
R-squared	0.538	0.662	0.920

Robust standard errors in parentheses

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

In the Table we have reported if we have used municipal fixed effects, region-year interactions to let time effects to vary across regions and if we have included municipal level characteristics as controls in the regression.

It is easily seen that, as in the baseline case, there is a decline in turnout from the 2008 election to the 2013 election; in fact, the turnout of the 2013 election is lower by $3,9\%$ points when compared to the one of the same kind of election in 2008.

In this robustness check we are going to confirm, by making some changes in the analysis, that the common trend assumption holds. First of all, in this case we are focusing on only two election years before the actual concurrent election and the results concerns two election of the same kind[5].

The common trend hypothesis needed for the DD estimation to be informative is verified by the coefficient a_1 that is really close to zero and doesn't change significantly when municipal characteristics are included as controls to the regression, this means that the sample is homogeneous between treated and untreated municipalities even when we control for many municipal characteristics.

In the same line, from the coefficient a_3, hence the difference in the 2013 turnout for the municipalities that had the concurrent election in 2014 from the ones who weren't treated, it is possible to see that there isn't a significant difference in turnout behaviour. This means that before the treatment the municipalities that had the concurrent election in 2014 had the same behaviour as the ones that weren't treated. This allows us to confirm that the common trend hypothesis is supported by this robustness check.

5.3 Close elections - 2013 and 2014 national elections results

The second robustness check is quite interesting because we are going to focus on two elections that are close in time, only one years between each other; in fact, we are going to focus on the National election of 2013 and on the National election of 2014. We have already pointed out that, even if the nature of the two elections is different[6] and this might lead to a different propensity of the voters to cast their preferences, the vicinity of the two elections makes us more convinced that the common trend assumption holds. In fact, the short period between the two elections make it less likely that there has been mayor shocks that might have lead the assumed trend to deviate from its path. To make this aspect clearer we might think that the political parties haven't significantly changed and that in one year gap we may assume that the economy hasn't changed significantly too.

The sample for the analysis is formed as in the previous two cases and the number of observations

[5]Chamber of Deputies election.

[6]Since we are considering a Chamber of Deputies election and an European election that are respectively a First order election and a Second order election.

is the same as the one in the previous section case (9.328 observations) since we have two years of data.

In Table 5.6 we can see the results of the analysis for the three specifications described in the "empirical model" section.

Table 5.6: Close elections - 2013 and 2014 national elections

	First specification	Second specification	Third specification
	Turnout	Turnout	Turnout
Local election (L_m)	-0.000	-0.000	-
	(0.002)	(0.002)	-
National election 2014 ($T14_t$)	-0.237***	-0.237***	-0.237***
	(0.002)	(0.002)	(0.002)
National 2014*Local ($L_m T14_t$)	0.207***	0.207***	0.207***
	(0.002)	(0.002)	(0.004)
Municipal fixed effects	NO	NO	YES
Municipal controls (2011)	NO	YES	NO
Constant	0.751***	0.668***	0.737***
	(0.004)	(0.044)	(0.001)
Observations	9,328	9,328	9,328
R-squared	0.726	0.769	0.908

Robust standard errors in parentheses

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

In the Table we have reported if we have used municipal fixed effects and if we have included municipal level characteristics as controls in the regression.

When taking into account the 2013 National election and the 2014 National election it is possible to see that the common trend assumption is verified by the fact that the coefficient of the treatment (a_1) is so close to zero that when we approximate at the third decimal number the value reported is still zero. This means that the sample is homogeneous between treated and untreated municipalities; this is confirmed in the second specification, in which we control for municipal characteristics.

Now that we have discussed that the common trend assumption holds, we can focus on the different behaviour that voters have between the 2013 National election and the 2014 National

election. We see that the National election of 2014 has a turnout that is $23,7\%$ lower than the one of the National election in the precedent year. This difference seems lower than the one we have found in the baseline of the analysis, but we have to remember that here we are comparing the 2014 turnout to the the turnout of 2013 and not to the one of 2008; this value have sense if we remember that the turnout in the 2013 National election had a decline in turnout from 2008 to 2013. We can say that the difference in turnout reported in Table 5.6 shows the difference in turnout between a First order election and a Second order election and a bit less the overall decline in turnout since we are taking into account two elections that are really close to each other.

Finally, the the concurrent election boost by $20,7\%$ points the turnout of the 2014 National election. The effect here is a bit higher than the one calculated in the three year model but still really coherent in sign and magnitude. For this reason we can safely confirm that this result is compatible with our main findings and that the concurrent election in consideration actually boost turnout.

5.4 Alternative setting results

In the extension we are going to focus on the effect of a concurrent Local election on the turnout of the National election of 2013[7]. The sample, as it is possible to see in Table 5.4, is a bit wider than the ones in the previous analysis; in fact, we are including in our sample all the regions with the exception of Valle d'Aosta but we are going to exclude the municipalities that had the Local election in 2014 and in 2008. The final sample is composed by 7.300 observation, hence 3.650 municipalities reported for two years of data.

It is important to remember that in this case we have switched the years of our analysis. The 2014 National election is treated as if it had happened before the 2013 National election. Moreover, we have to remember that in this case the treatment is the 2013 Local election concurrent to the 2013 National election and that our aim is to highlight the effect of this concurrent election on the turnout of the 2013 National election.

Finally, it is important to remember that, in this last case, we have clustered at regional level instead of at municipal level and the fact that there are few clusters (19 in total) is likely to give us biased standard error.

In Table 5.7 we can see the results of the analysis for the three specifications described in the "empirical model" section.

[7]The two election in consideration are the Regional election and the Chamber of Deputies election of 2013.

Table 5.7: Alternative setting

	First specification	Second specification	Third specification
	Turnout	Turnout	Turnout
Local election (L_m)	0.078*	0.027	-
	(0.042)	(0.023)	-
National election 2013 ($T13_t$)	0.237***	0.237***	0.237***
	(0.016)	(0.016)	(0.023)
National 2013*Local (L_mT13_t)	-0.016	-0.016	-0.016
	(0.032)	(0.032)	(0.046)
Municipal fixed effects	NO	NO	YES
Municipal controls (2011)	NO	YES	NO
Constant	0.483***	0.163	0.497***
	(0.026)	(0.114)	(0.010)
Observations	7,300	7,300	7,300
R-squared	0.590	0.773	0.920

Robust standard errors in parentheses

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

In the Table we have reported if we have included municipal level fixed effects and municipal level characteristics as controls in the regression.

The coefficient a_2, that is the difference in turnout between the 2014 and 2013 election, is coherent with the one found in the previous section; in fact, the 2013 National election had a turnout of 23.7% point higher than the one of the 2014 National election. This is also consistent with the literature of First and Second order elections since the First order election presents an higher turnout.

The coefficient of the Local election shows that there is actually a difference between the treated and untreated municipalities. This is probably linked with the nature of the concurrent election, in fact we are looking at a Regional election and not at a Municipal election across the whole Italian territory. For this reason, it is likely that there are some characteristics of this regions that are different from the others. This is confirmed by the fact that once municipal level controls

are included in the regression[8] this difference becomes insignificant. Of course, in the third specification this coefficient is omitted because of collinearity as it happened in the previous cases.

Let's focus now on the effect of the concurrent election on turnout. From the analysis the effect that we were searching is insignificant. This means that a Local election simultaneous to the 2013 National election has not any effect on the turnout.

How is it possible to explain the stark contrast between the findings in our baseline analysis and in this alternative setting? The main aspect that we have to remember is that in our baseline we were looking at the effect of a concurrent election on the turnout of a European election, a Second order election, and in the second case we were considering a Chamber of Deputies election, a First order election.

We already know, from the raw data in the " archivio storico delle elezioni" website that the 2013 Chamber of Deputies election had a turnout of $75,2\%$ and that the 2014 European election had a turnout of $58,69\%$; this means that the First order election already have mobilized the citizens that usually do vote, whereas the Second order election mobilizes only a fraction of this voters. Moreover, as we have seen in the "First and Second order elections" section Heath et al. 1999 pointed out that the Regional and Municipal elections don't really behave in terms of participation as a Second order election but are a "one and three-quarters order", this means that the participation of this type of election is between the one of a Second order election and a First order election. For this reason, it might make sense that the concurrent Local election boost the turnout of the European election, whereas the Local concurrent election has no effect on the turnout of the Chamber of Deputies election.

[8] In the second specification.

Conclusions

By exploiting the Italian case in consideration we were able to show that a concurrent Local election has a positive and significant effect on the turnout of the 2014 National election. The effect on the turnout of the 2014 National election is quite strong, in fact the Local concurrent election increases turnout by $19,4\%$ points.

The sign of this result is coherent with the literature, however, the magnitude is way higher than the results found in previous studies. Kostelka 2017 while analysing the sources of the decline in turnout in 65 countries found that concurrent elections boost turnout by $7,82\%$ points. Kostelka 2017 result is confirmed by the Indian case presented by Nikolenyi 2010 in which the concurrent election boost the National election turnout of the major states by $9,11\%$. Finally, if we consider the European case presented by Mattila 2003, in which he considers the European level elections between 1979 and 1999 for all the member states, the increase of European turnout due to a concurrent election is of $7,72\%$.

This difference points out that probably in Italy the general turnout is structurally high[9], whereas the European election turnout differs and shows such a low turnout that is not even comparable with the other elections. In fact, if we compare the 2014 European turnout to the 2008 Chamber of Deputies turnout we see that the European election has a turnout that is $31,2\%$ points lower. The lower turnout in the European election is explained by the the Second order nature of the election.

It is interesting that with only three election years the decline in turnout was quite evident; in fact, in only five years the turnout of the National election has experienced a decline of $3,9\%$ points.

The concurrent Local election of 2013 had no effect on the turnout of the 2013 National election. We didn't expect this result, we expected a effect lower in size but still significant, however it is possible to find a reasonable explanation for this result. In the extension we were considering the turnout of a Chamber of Deputies election, a First order election, this is the "more at stake" election for the voters, hence, we expect that all the citizens that would vote are already voting

[9]This is potentially linked to the fact that until 1993 voting was compulsory in Italy.

and a Regional election[10] might not be enough for other citizens to mobilize and decide to cast a vote.

It would be interesting to extend the analysis and see which is the effect of a concurrent election not only on the turnout of a National election, but also see what happens to the turnout of the Local election. Which would be the election that gains more form this simultaneous election? Are there cases of selective abstention as suggested by Degan and Merlo 2011? This would be particularly interesting to decide which elections should be organized in the same day and which ones do not gain enough in terms of turnout but only loose autonomy (Nikolenyi 2010).

The result of this research is quite clear. A concurrent election has a strong positive effect on the turnout of Second order elections but not on First order ones in Italy. For this reason, policy makers should be encouraged to plan as many concurrent elections as possible for those elections that have a structural lower turnout in order to make them more representative of the population. Doing so would not only increase turnout, but would also be cost efficient both for the State, in monetary terms, and for the population that would have to vote in only one occasion.

[10]A Second order election, even if Heath et al. 1999 refers to Regional elections as "one and three-quarters order".

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