THE DETERMINANTS OF THE REFERENDUM VOTE: EVIDENCE FROM
2016 ITALIAN EXPERIENCE
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ABSTRACT

This work provides new evidence on the socio-economic-demographic determinants of the referendum outcome held in Italy on the 4*th* December 2016 by analysing the voting patterns at municipality level. The results suggest a strong ideological vote, thus meaning that the personal choice has been significantly influenced by the voters' political orientation of the previous elections, in 2014. Also, the evidence reveals how the youth vote has caused the rejection of the reform only to a small extent, as the unemployment rate and the percentage of commuters in municipalities show. Overall, the vote was determined mainly by the political affiliation and by a self-assessment of one's own socio-economic conditions and, residually, by a personal opinion on the contents of the reform. The widespread knowledge of the linkage between basic rules and social and economic wellbeing may build up a brake to the increasing demagogic sentiment of the public opinion.

*Keywords*: referendum, voting intention, elections, political ideology, voting behavior
*JEL Classification*: B55

1. OBJECTIVES AND SCOPE OF THE STUDY

This study provides new evidence on the socio-economic-demographic (SED) determinants for the outcome of the referendum held on December 4, 2016 using the actual results of the election aggregated on 7,755 municipalities. There are no other studies on this topic based on detailed data. Althought three years have passed since the Referendum, the relevance of the issues is still topical. There is no specific theory that could directly drive the empirical analysis,

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which is therefore based on a regression strategy linking political preferences, features of the electorate and outcome of the referendum. Since it is a constitutional matter, therefore pre-political by definition, the complexity is greater than an empirical approach to the ideological and SED determinants of purely political election outcomes. Consequently, the research emphasizes the (deliberate) shortcomings in the communication of the political leaders, which were aimed at confusing voters who were unlikely to be well informed on the argument. We have attempted to outline these aspects to conclude that a large percentage of the outcome is driven by ideological reasons behind the voters' choice; in the explanation of the vote in more than 8,000 municipalities the coefficient of the political leaning of voters is significantly different from zero in statistical terms (contradicting the 'Rawls-like' conjecture of deciding under a veil of ignorance when it comes to basic rules).

Moreover, several hypotheses released in the media do not appear completely well-founded after studying them on an empirical basis. It was not the youth vote that has caused the rejection of the reform as social malaise, which is revealed by the unemployment rate and the percentage of commuters in municipalities. This combination also entails that local variables have reduced explanatory value for interpreting the vote.

However, it is evident how important is the comprehension of the vote to ensure that the difficult prospect of returning to institutional reform topics does not become impossible. Obviously, this is relevant because political institutions contribute not only to improve the quality of community life, but also to boost the medium-long term dynamics of the potential output, thus influencing the real performance of the economic system (Acemoglu *et al.* (2005), North (1991)). The antidote to the ideological and idiosyncratic voting and to the personalization of choices when it comes to constitutional rules, is the knowledge of the political system and the awareness of its relevance. In conclusion, this study provides room for re-introducing an updated version of civic education in the 'economic' sense in secondary schools and throughtout the duration of the entire curriculum.

## 2. EXISTING LITERATURE

This study aims to analyze the ideological and socio-economic-demographic (SED) motivations behind the NO result characterizing the majority of Italians vote on the referendum ballot paper. The bibliography on this topic is very recent, and does not analyze political choices of this calibre (constitutional referendum). The type of analysis that has been carried out and the variables chosen to explain the vote are, however, the result of a careful reading on such topic, mostly related to issues such as Brexit and the vote for Trump in the US primary elections. Our work identifies two main pillars explaining the referendum result: the political ideology of voters and their socio-economic-demographic features. Adkisson and Peach (2017) identify three main pillars in the voting decision in the primary elections that have seen Trump gaining the support of Americans. These pillars are ideology, socio-demographic features

and economic rationality (the latter two are comparable to our SED variables). Trump's electoral campaign, which was based on rhetoric, therefore certainly influenced the vote by presenting him as the Messiah or saviour of the US he who would restore America's greatness. There are several suggestions indicating that ideology, political exaggeration, political friction, retrospective voting, voter turnout, historical moment, economic rationality, socio-political factors and geography, have therefore played a vital role in the behaviour of American voters. For example, the strong anti-immigration campaign against Mexicans and Islamists which is demonstrated by the positive and statistically significant relationship between resident foreign population and votes for Trump (which is unusual, but which makes sense if we consider the potential resentment by legal foreigners against illegal ones) and the negative and significant relationship between the Hispanic population and the vote. To operationilize this economic rationality, they consider income per capita, poverty rate and unemployment, which all show positive and significant relationship with electoral results. Moreover, in this study we analyze variables of this type in explaining the referendum vote, considering the connotations that the constitutional referendum took on and its 'propaganda' or political veto features against the government.

Picascia *et al.* (2016) investigate the expression of the vote underpinning Brexit focusing on how and whether this was really the result of anti-European resentment or, instead, the manifestation of other phenomena such as prosperity, security and the health of local economies. In these cases, the use of SED variables is necessary to carry out the 'grounding' (Pickels, 1995) of the vote, which mirrors historically and territorially defined contexts, and interacts with social and economic relations. This has led to choose indicators such as the level of education or the professional position, or an indicator of social malaise, as revealed by the deprivation index. The vote for Leave took on the features of a protest vote: the vote for this outcome came from areas with concentrations of low levels of education, low-quality employment, and high deprivation indexes.

Matti and Zhou (2016) use socio-demographic variables in an OLS model to explain the Leave vote. These variables are average age, percentage of female voters, population density, high-level education, occupational status, ethnicity, and religion. The results show how female gender, population density and high degree of education are inversely correlated with the Leave choice, while average age and employment in the financial sector have positively influenced the Leave choice, even if they seems to have marginal relevance in the votes choice. This because people did not vote taking into account economic aspect, contrary to the emphasis placed by the electoral campaigns of the parties in favour of leave and remain.

Finally, both Obschonka *et al.* (2018) and Van Zomeren *et al.*(2018) focus the analysis on the neuroses that could generate fear in the electorate, therefore populism. These show how the correlation between Leave and a high degree of education is negative, while it turns out to be positive with factors such as unemployment. A common element between Brexit and the vote for Trump is

the use of populist issues, with a particular focus on the purpose to instill the fear into the electorate.

## 3. WHAT ITALIANS VOTED FOR ON DECEMBER 4, 2016

On December 4, 2016, the Italian people rejected the constitutional reform proposed by the Renzi government. The law, which would have entailed major changes to the structure of the institutions - such as the overcoming of the system based on two chambers of parliament with equal powers and the reform of Chapter V of the Constitution - has been submitted to the popular will[1]. The procedure for approving the law began in April 2014 with a text that, in the course of the debate, was amended by both the Chamber of Deputies and the Senate. The reform related to more than one-third of the Articles of the Constitution (47 out of 139) and would have been the largest since 1948, when the Italian Constitution came into force.

Did the Italians votes for that? It doesn't seem so. According to the opinion poll carried out by Demopolis[2] 67% of the voters have voted for "interrupting the experience of the Renzi government". According to Quorum[3] the use of the vote to send a political message amounted to 46% among the NO (29% among the YES). It is worth to note that, according to this opinion poll, the majority of respondents agreed with key aspects of the reform (the overcoming of a system based on two chambers of parliament with equal powers, the reform of Chapter V and the abolition of the CNEL (*Consiglio Nazionale dell'Economia e del Lavoro* [National Council for Economics and Labor]). In other words, it seems that many voted NO whilst thinking YES.

Therefore, the willingness to accept the idea of a vague decision-making rationality of voters, is an obvious choice to find reasons alien to the contents of the reform, or only indirectly linked to it.

Some conjectures may help explaining this phenomenon, starting with the voting guidelines on the reform provided by the main political leaders, in par-

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[1]According to the provisions of Art. 138(2) of the Constitution, a confirmatory referendum of a constitutional law approved without a two-thirds majority in the second vote, may be requested by one-fifth of the members of a chamber of parliament (126 for the Chamber of Deputies, 63 for the Senate) or by 500,000 voters, or by five regional councils. In the case of the so-called Renzi-Boschi reform, on May 6, 2016 the Central Office for the Referendum of the Supreme Court of Cassation issued a Ruling declaring several requests for referendums on that constitutional law admissible, after they had been put forward by groups of members of parliament, both from the governing majority and the opposition. Specifically, on April 19, a request submitted by 166 MPs in office with authenticated signatures; on April 20, two requests submitted, respectively, by 103 senators in office and 237 MPs in office, with authenticated signatures; on May 3, a request submitted by 151 Senators in office, with authenticated signatures. On August 4, 2016, still the same Office issued a Ruling declaring admissible the request for a referendum promoted by the Committee for the Yes, which deposited 579,514 signatures at the Court's registry, of which 504,387 were deemed valid, therefore exceeding the minimum number required.

[2]Quoted in YouTrend, all the figures of the referendum, viewed on of 12-20-2017 (www.youtrend.it).

[3]The December 4 Quorum opinion poll for Sky TG24 included 1,500 full interviews (17.9%) on a total of 8,357 contacts. The representation of the sample shows an absolute sampling error of 2.3%. Full details on the website http://www.sondaggipoliticoelettorali.it/GestioneSondaggio.aspx.

ticular from the centre-right. The arguments of Silvio Berlusconi close to the vote help introduce a first conjecture, which we can define as 'the Eden paradox', for reasons that will be immediately clear.

**Silvio Berlusconi** (TG5 interview, October 18, 2016)

"A strong, determined, and responsible NO to this reform, which would favour an authoritarian drift, with the true risk of only one man in charge. The opposite of democracy. You know well the difficulty of these times, the economy is not growing, jobs are lacking, poverty is increasing, immigration continues unchecked, everybody's safety is in danger, in Europe we fail to assert our arguments".

"Yet, incredibly, this government is focusing on a poorly written and dangerous constitutional reform to regain the support. For this reason, we must respond with a strong, decisive and responsible NO".

"We say NO so that, after the NO, it is possible to approve, all together, a real reform, a different one, a new reform", Berlusconi underlined. This reform, he explained, had to have the following features: "It must include the President of the Republic being directed by the people, a true cut in the number of members of parliament, a number that must be cut by more than half, with an imperative mandate, whereby an elected official cannot swap sides without resigning, a constitutional limit to taxes, to the tax burden that no government is able to overcome", and, finally "a true reform of the Regions, which have now become yet another great and costly bureaucracy".

Ignoring the fact that in December 2016 economic recovery was already underway, despite its moderate rates, the misunderstanding that may have been reflected in the vote of many centre-right voters was the creation of confusion over the terms of the vote, as shown in Figure 1.

FIGURE 1. – *Confusing the terms of the vote: the Eden paradox*
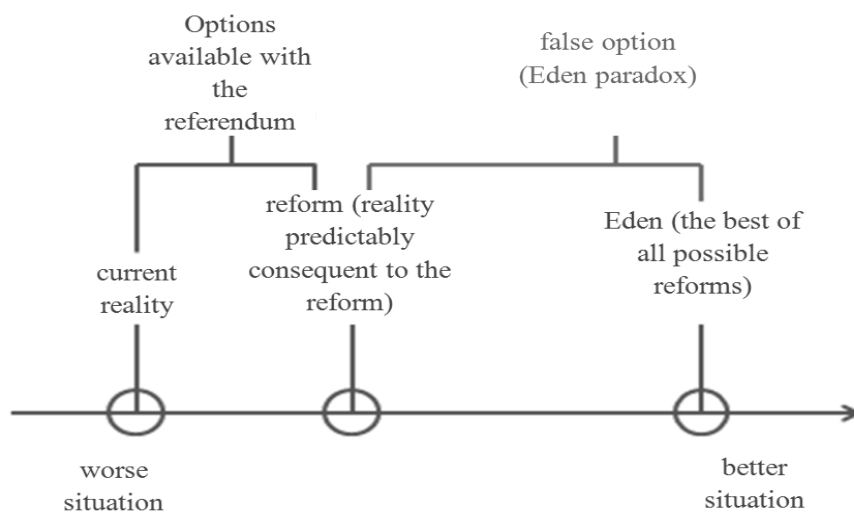
The fact of having aligned the terms as in Figure 1 does not imply a judgment of the reform's merits, but it is only a way of demonstrating what was confusingly implied by the centre-right. In other words, the evocation of Eden is inherent in the explanations of the voting intentions of this political side because alternatively, it would have been sufficient to explain the reasons why the predictable consequences of the reform should have been put to the left (thus worsening the status quo) and not to the right of the axis (along which situations go from the worst to the best, thus justifying the rejection vote). Likewise, it is clear how to instil the doubt that someone was voting (i.e. choosing) between the reform and Eden, it is necessary to treat the comparison between the actual options superficially, as shown by the description of the features of Eden above.

It is worth to repeat that different political parties against the reform has presented the referendum choice as if it were not concerned with the reform and the reality, but merely with a poorly reformed Constitution and a properly reformed Constitution (indeed perfectly, as in Eden). However the perfect reform, as known, was never presented as an option one could choose.

In our opinion many centre-right voters strengthened their rejection of the reform on the basis of the shifting of the alternative options of the vote: that is, they have not voted between the real alternatives - namely, the current reality and reform - but between the reform and Eden, with the inevitable consequence of rejecting the former (Eden is, by definition, unbeatable[4]).

A second conjecture on the modification of the exact terms of the options offered by the referendum is also interesting. We define this conjecture as 'snowball effects'. Let us return to the remarks made by Berlusconi, which were made immediately after those quoted above, in the same interview.

(...) So, Berlusconi emphasizes: Constitutional reform is dangerous "because it could deliver Italy and the Italians to only one man and one party". The FI [Forza Italia] leader argued: "With just 15% of those eligible to vote, a small minority, Grillo for example, who is already the master of his party, could become with 55% the master of the only Chamber that will pass ordinary laws. Then he would become the one who chooses the President of the Republic and the members of the Constitutional Court. This would mean being the 'master of Italy and the Italians'. And we are not saying NO" - he pointed out - "to leave things as they are".

It is not relevant to comment about the confusion between constitutional reform and the law whereby votes are turned into seats in parliament. The same is true for the fact that the complex mechanism for the election of the federal Senate in the reform being voted on December 4 was designed precisely to

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[4]In theory, there could also be another conjecture on the potential confusion on the terms of the vote, the discussion of which is omitted because it seems not to have operated significantly in the context of December 4, 2016: namely, the misleading rapprochement between the two points to the left of Figure 1 ("the reform is useless because it changes little"). If the above hypothesis were true, the bias for rejection would be justified by the voter's inability to distinguish the pre-reform reality from the one likely to prevail after the reform, if it was approved. However, the political debate on both sides, for and against, has always emphasized the scope of the major change in the constitutional reform law. Therefore, the potential applicability of this pattern is not likely.

prevent the governors of Regions, at that time largely from the centre-left, from colonizing the upper chamber[5]. What matters here is that the political-media debate has associated the potential approval of the reform to a snow-ball effect consequential to the strengthening of Prime Minister Renzi's leadership. This is perfectly legitimate, and even rational, in the sense that it can be admitted that a good reform - assuming it is deemed to be such - could have negative consequences for contingent reasons connected to the way the political power is managed by the reform's main stakeholder.

The confusion induced by those who supported this argument consists in having neglected another snow-ball effect: once again it is not necessary to consider this neglected effect as positive, because the mere fact of having neglected it betrays the intent to engender confusion or make political capital. Naturally, the snow-ball effect that was not considered related to the consequences of strengthening leadership. The re-centralization of some tasks from regions to the state would have had positive effects that no one could dispute - think of networks or energy. Nor is it difficult to imagine a process of simplification of bureaucracy, administrative justice, justice in general, given that the reform was aimed at re-allocating (almost) all legislative powers to one side (the Chamber of Deputies), entrusting the other - that is, the (perfectible) federal Senate - with the role of coordination between issues involving multiple and different levels of government, as is the case in any even vaguely federal states[6]. This process of de-bureaucratization has always been, albeit very confusedly, on the agenda of all political parties. But it was not considered in the voting guidelines that were offered.

Using these misleading tricks of the terms of the vote, by addition or omission, it appears simpler to rationalize ex post why even those who theoretically agreed on the merits of the constitutional reform voted against it[7].

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[5]This association is also legitimate because the outcome of the referendum would have had an effect on the electoral law, and possibly also on its evaluation to be made by the court assessing laws, taking into account the change of the Constitution itself. However, the superficial and excessively simplified treatment of the link between constitutional change involved in the reform and the impact on the electoral law has led, in our view, to greater voter confusion, and not to a correct representation of the risks and opportunities of the potentially reformed structure. It has to be said that the supporters of the reform have largely underestimated these objective elements of complexity, in front of which, those who decide under conditions of imperfect information - the citizens - suffer from a bias toward rejection. On this point, treated in a micro-economic, decision-making context, it is worth mentioning the work of Samuelson and Zeckhauser (1988), in which the authors identify an exaggerated preference for the status quo, with the bias consisting in a non-rational behavior by individuals. Taking all this into account, perhaps, in a potential future referendum, there will be an adequate reflection also on the formulation of the questions - in terms of language and content - to be submitted to the public vote.

[6]In reality, there is no federal state that has only one chamber; the abolition of the Senate as a hypothetical counter-proposal for improvement did not make sense, as a matter of fact.

[7]Needless to say, other voting guidelines, including the following ones, are less suitable for a logical assessment.
Matteo Salvini (RaiNews, 11-27-2016): "I will vote no because I am opposed to the strategy of the single thought, of the jam man, of making everything precarious [...] People are studying this greatly and will understand how confused, botched, and dangerous this reform is".
Giorgia Meloni (RaiNews, 11-27-2016): "A reform made against citizens [...] it is a step behind

4. POLITICAL LEANING AND REFERENDUM VOTE

Besides the already eloquent statements on the reasons of their vote - for or against the government rather than the contents of the reform - there exists a general test to verify whether people voted mainly at the outcome of an autonomous and personal reflection or not can be made by comparing the voting declarations of people with their own political orientation. If people had voted on the content and completely independently from the voting guidelines of their party, we should have observed a percentage of people in favour of (contrary to) the reform that is rather homogeneous among voters who have different political leanings: to give an example, given that the NO majority was about 60%, we should have observed, independently of one's statement of political leaning, a percentage of around 60% of NO votes in every political side.

To introduce the topic, it may be useful to draw a comparison with another great referendum that went down in history as the expression of an extra-political vote or, namely the conscience vote: the referendum on divorce, a repealing referendum with whose in 1974 the Italian citizens were asked to express themselves to repeal the law that had introduced divorce in Italy four years earlier[8]. Table 1 shows the relationship between the results of the two referenda and the voting guidelines provided by the main political parties on the questions of the referendum.

Let us consider the referendum of 1974, for which we do not have the intentions/statements of vote broken down by political leanings. By summing up the total of the votes of the Christian Democracy (DC) and the Italian Social Movement (MSI) and the 50% of the 'other parties' - for which we do not have their voting guidelines - we obtain 52.6 for the NO, against a considerably more clear-cut result (59.26%). Therefore, the voting guidelines of the parties of the time are not sufficient to explain the outcome of the referendum. But they are sufficient in the case of December 4, 2016.

The extraordinary differences in the third column - which sums up the minimum and maximum percentages of declarations for the NO in three different opinion polls - testify to the decisive influence of parties in effectively orienting the vote of December 4, 2016. The sum of the voting intentions in the three different opinion polls and the valid votes obtained by the parties in the elections of 2014 provides a percentage in favour of the NO of between 56.3 and 59.2%, practically matching the actual result of the referendum.

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from the current Constitution, we want a Constitution in which citizens are more important".
Giovanni Toti (RaiNews, 11-27-2016, from Twitter): "It is a jumble where people paid by citizens to do something else will go" [...] "The new Senate is a life insurance for the PD".
Beppe Grillo (08-19-2016, rally, and 08-20-2016, report on Il Fatto Quotidiano): "Today the NO is the most beautiful and glorious form of politics" and "those who do not understand can go f...". "Italians, we have started, now the ball is in your court. This is your NO. Today the NO is the most beautiful and glorious form of politics".

[8]The referendum took place on May 12 and 13, 1974 and was aimed at repealing "Law 898/70, regulation of the cases of dissolution of marriage", otherwise known as 'Law Fortuna-Baslini', which had introduced divorce in Italy.

TABLE 1. – *Constitutional referendum 2016 and referendum for repealing divorce of 1974: some comparisons*

| constitutional referendum 2016 | | | | referendum for repealing divorce 1974 | | |
|---|---|---|---|---|---|---|
| | voting guidelines | % of votes in elections of 2014 | % no | | voting guidelines | % of voting in elections of 1972 |
| PD | yes | 40.8 | 23.0-25.0 | DC | yes | 37.4 |
| M5S | no | 21.2 | 86.0-94.0 | PCI | no | 26.3 |
| FI | no | 16.8 | 74.0-80.0 | PSI | no | 9.3 |
| LN | no | 6.2 | 80.0-83.0 | MSI-DN | yes | 8.4 |
| FdI | no | 3.7 | 74.0-80.0 | PSDI | no | 5.0 |
| Other | | 11.3 | 68.0 | Other | | 13.6 |
| turnout: 65%; result: no=59.12% | | | | turnout: 88%; result: no=59.26% | | |

 data processing and estimates based on data from Ministry of the Interior and opinion polls cited in the text and notes.

Alternatively, the counts that can be made from Table 1 indicate that the defeat of the reform depended on the percentage of voters of the PD who voted NO: by replacing the 23-25% of the negative orientations of the PD voters with 0%, the outcome would have been one of parity, or approval of the reform by a razor-thin margin[9].
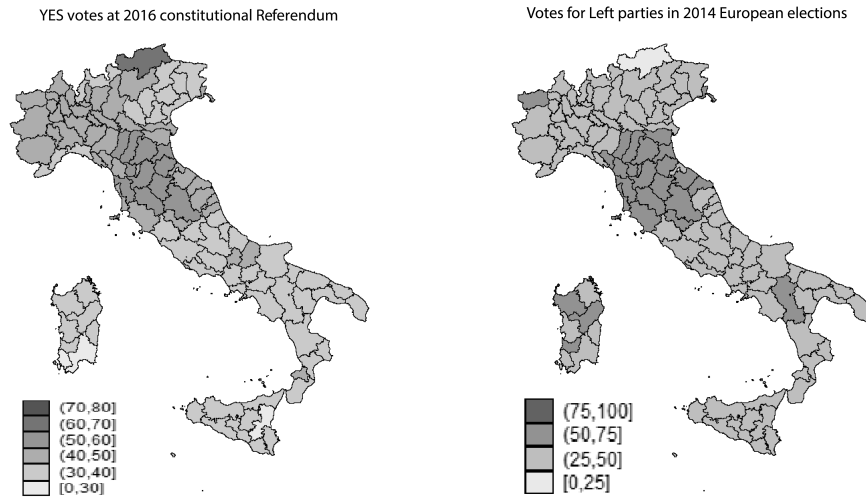
## 5. DATA AND METHODOLOGY

The influence of political leanings in the referendum is also evident in Figure 2, which analyzes, with aggregate data by provinces, the relationship between the belonging party and the vote expressed in the referendum in the various municipalities. In particular, Figure 2 shows for provinces the intensity of the YES votes and the distribution of votes in favour of left-wing parties in the European elections in 2014. As shown by the maps, the results of the last European elections in favour of left-wing parties are generally in line, with some exceptions, with a YES majority in the referendum of December 4, 2016.

Table 2 compares the result of the referendum with that of the 2014 European elections via a model of linear regression that has the NO percentage at the referendum for each municipality as dependent variable. As explanatory variables, there are the percentages of votes obtained by the different political parties in the elections in 2014, aggregating the municipal results in three

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[9]It can be objected that this is pure provocation, since a share of orientation different from that of the party one belongs to is natural in every party. Table 1 shows that this percentage is 20-25%, with the notable exception of the M5S. But this is precisely our point: Had there been such a remarkable exception (i.e. of the same size) in the side supporting the YES (in practice, the PD), things would have gone differently, not in terms of overall outcome, but of the gap between NO and YES, with political consequences that would probably be different from what we are experiencing till now. By substituting the percentages for the NO in the Democratic Party with those for the YES in the M5S the gap in the final outcome would change to 53% to 47%, still in favor of NO.

FIGURE 2. – *Distribution of YES votes in 2016 constitutional referendum and vote for left-wing parties in 2014 European Elections - percentages*

YES votes at 2016 constitutional Referendum                    Votes for Left parties in 2014 European elections



(70,80]
(60,70]
(50,60]
(40,50]
(30,40]
[0,30]

(75,100]
(50,75]
(25,50]
[0,25]

Figures based on ISTAT and Ministry of Interior data

macro-classes: percentage of votes for left-wing parties, percentage of votes for right-wing parties and percentage of votes for the M5S. The results are presented both with standard errors derive with the normal least squared values and with the ones corrected for heteroscedasticity (robust standard errors).

As expected, the coefficients are all statistically significant: positive for the right-wing parties and for the M5S, negative for the left. The interpretation of the coefficients is immediate: from one municipality to another, or from one region to another, the difference between supporting a certain party corresponds to a difference in the vote orientation which is equal to the aforementioned difference for its parameter. For example, moving from a region where the M5S

TABLE 2. – *Relationship between NO% at 2016 referendum and votes for parties in the European elections of 2014 - municipal data (no. cases = 7,900)*

| dependent variable: % NO at the referendum | (1) | | | (2) | | |
|---|---|---|---|---|---|---|
| | coeff. | stand. err. | t | coeff. | stand. err. | t |
| % of right-wing votes | 0.24*** | 0.02 | 15.90 | 0.24*** | 0.04 | 6.47 |
| % of left-wing votes | -0.14*** | 0.02 | -9.34 | -0.14*** | 0.04 | -3.79 |
| % of votes for M5S | 0.53*** | 0.02 | 31.24 | 0.53*** | 0.04 | 13.73 |
| constant | 40.69*** | 1.57 | 26.00 | 40.69*** | 3.70 | 11.01 |

p-values are significant at 1% (***) and 5% (**).
Figures and estimates based on ISTAT and Ministry of Interior data.

had 10% of the vote at the 2014 European elections to a region where the same movement obtained 20%, it could be observed, *ceteris paribus*, an increase of about 5.3 percent in the NO choice (since 0.53 is the parameter of table 2 for the M5S): therefore, if in the first region the NO had 55% of the vote, in the second one we would observe the NO at 60.3%).

The main implication of these results is that the analysis of the SED determinants of the referendum vote could not ignore the influence of parties on voting intentions. One of the variables presented in Table 2 must therefore appear in the econometric analysis on the socio-demography of the referendum vote based on municipal results.

The use of socio-economic variables is necessary to carry out an analysis of the referendum vote that reflects not only a general malaise and discontent toward the government, but also a different territorial distribution of social and economic aspects which have contributed to a choice not based on the merits of the reform.

The data used are the results of the referendum vote at the municipal level obtained from the Ministry of the Interior (7,755, due to the lack of some data from small municipalities). Our variable of interest (this is the dependent variable that we want to explain via some census features of the population and other economic variables) is the NO percentage in each municipality whose frequency distribution is represented in Figure 2.

The variables chosen to interpret the municipal percentage obtained by the NO are those described in Table 3 in the quantitative profile[10].

Before describing the results of the regression, we provide some details regarding the construction of the variables used.

The municipal data referring to the SED variables come from census sources, referred to the year 2011, while the referendum was held at the end of 2016; therefore the indications had to be updated to 2016.

For the variable 'young people' we select the population between 13 and 25 years of age at the time of the census, that would actually be between 18 and 30 in 2016. This young population is a percentage of the total population between the ages of 13 and 90 years (aged 18-95 in 2016); the latter is the population segment that will always be referred to with the term 'population'.

The municipal unemployment rate (number of unemployed people out of total labour force, which includes the employed plus the unemployed), also from the census, was updated to 2016 using the variation of the provincial unemployment rate 2012-2016, obviously for each municipality belonging to the province (ISTAT source).

Public employees are expressed as a percentage of the population for each municipality (Census of 2011), but it was not updated to 2016.

The variable on commuting, taken from the census, represents the percentage on the population of the sum of workers and students in this condition.

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[10]The data from municipalities reveal surprises. For example, Table 3 reveals that there are Italian municipalities without young people (only citizens aged 30 or over), and even municipalities without unemployed people.

TABLE 3. – *Descriptive statistics of variables*

|  | No. Obs. | Average | St. Dev. | Min | Max |
|---|---|---|---|---|---|
| % NO | 7,755 | 59.59 | 8.63 | 14.84 | 88.24 |
| % young | 7,820 | 14.08 | 2.94 | 0.00 | 26.50 |
| % unemployed | 7,820 | 10.18 | 6.23 | 0.00 | 41.27 |
| % public employees | 7,820 | 1.14 | 1.90 | 0.04 | 62.90 |
| Var. % (2016 on 2013) of Real GDP | 7,820 | 0.99 | 2.90 | -7.67 | 10.10 |
| GDP per employed person (Euro) | 7,820 | 59.998 | 13.039 | 40.708 | 112.517 |
| Employed/population (%) | 7,820 | 44.40 | 8.46 | 18.53 | 74.05 |
| % of commuters | 7,820 | 52.98 | 10.93 | 8.86 | 89.84 |
| % of highly educated people | 7,820 | 38.99 | 7.66 | 6.13 | 71.92 |
| % votes for PD at 2014 European Elections | 7,820 | 38.25 | 9.90 | 0.00 | 79.31 |
| % no profit emp./employed | 7,820 | 4.08 | 1.48 | 1.47 | 8.05 |

note: The number of observations is not the same as that of the model due of the correspondence of observations between the different variables.

Figures based on ISTAT and Ministry of Interior data.

This variable is correlated (Table 4) in a fairly significant way with the rate of employment and with the percentage of highly educated population. This indicates that the reasons that lead to the condition of commuter are related to work and academic training.

The variable regarding education, still from a census source, links the percentage of the population in each municipality with a degree or equivalent diploma or a higher degree.

The variable on no profit employment is the percenatge of total no profit employees on the total employed persons.

The percentage variation of GDP between 2013 and 2016 is based on provincial data up to 2016 (ISTAT source). Finally, the two remaining economic variables - GDP per employed person and the percentage of employed persons on the population - have provincial dimensions, i.e. they are equal for each municipality belonging to the same province.

The product between the two variables provides per capita GDP; the subdivision into the two components makes it possible to appreciate the difference on the effect that each of them has in terms of orientation of the referendum vote.

From Table 4, which shows the correlation matrix of the variables, it is noticeable that the correlation between the percentages of young unemployed people is relevant. Particularly interesting is the simple correlation between the percentage of NO votes and the municipal unemployment rate. In addition to unemployment, a malaise variable has been considered, which can be identified in commuting, and it should not be overlooked that it has an average of as much as 52.98% on the total population: being a commuter for reasons

TABLE 4. – *Correlation matrix of the variables of interest*

| | % NO | % PD | % young | % unemp. | % public empl. | var. % GDP | GDP per emp. | Occ. rate (%) | % commuters | % High Educat. | % no profit on emp. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| % NO | 1.00 | | | | | | | | | | |
| % PD | -0.33 | 1.00 | | | | | | | | | |
| % young | 0.24 | -0.24 | 1.00 | | | | | | | | |
| % unemployed | 0.47 | -0.03 | 0.48 | 1.00 | | | | | | | |
| % public emp. | -0.04 | 0.03 | -0.06 | 0.02 | 1.00 | | | | | | |
| var. % GDP | -0.20 | 0.09 | -0.13 | -0.29 | -0.05 | 1.00 | | | | | |
| GDP per emp. | -0.33 | -0.07 | -0.05 | -0.41 | 0.05 | 0.26 | 1.00 | | | | |
| Occ. rate (%) | -0.25 | -0.06 | -0.14 | -0.49 | -0.03 | 0.20 | 0.29 | 1.00 | | | |
| % commuters | -0.16 | -0.05 | 0.17 | -0.46 | -0.09 | 0.21 | 0.38 | 0.48 | 1.00 | | |
| % High educat. | -0.15 | 0.04 | 0.01 | -0.22 | 0.12 | 0.10 | 0.23 | 0.23 | 0.46 | 1.00 | |
| % no profit on emp. | -0.21 | -0.01 | -0.21 | -0.41 | 0.05 | 0.16 | 0.65 | 0.31 | 0.37 | 0.10 | 1.00 |

Figures and estimates based on ISTAT and Ministry of Interior data.

of study or work is an individual feature present in almost 53% of the (adult) population.

The model chosen for the analysis of the determinants of the referendum vote is the following linear regression, whose results are given in Table 5.

$$\%NO_i = \alpha + \beta_1\%PD_i + \beta_2\%YOUTH_i + \beta_3\%UNEM_i + \beta_4\%PUBEMP_i$$
$$+ \beta_5\Delta\%GDP_i + \beta_6(GDP/EMPL)_i + \beta_7\%EMPL_i + \beta_8\%COMM_i$$
$$+ \beta_9\%DEGR_i + \beta_{10}\%NOPROF_i + u_i$$

where $i$ indicates the approximately 8,000 municipalities considered, $\%NO$ is the dependent variable (i.e., the % of votes NO at the referendum in each municipality), $\%PD$ is the percentage of votes obtained by the PD in the European elections of 2014, $\%YOUTH$ is the percentage of young people on the population, $\%UNEM$ is the rate of unemployment (i.e. the percentage of unemployed people compared to the sum of those unemployed and employed), $\%PUBEMP$ is the percentage of public employees on the population, $\Delta\%GDP$ is the accumulated percentage variation of GDP (real) between 2013 and 2016, $GDP/EMPL$ is the GDP per employed person in 2016, $\%EMPL$ is the percentage rate of employment (i.e. employed people on population), $\%COMM$ is the percentage rate of commuters (i.e. commuters on population), $\%DEGR$ is the percentage of people with a bachelor's degree or higher degree on the population, $\%NOPROF$ is the percentage of employed people in no profit firms on total employment. $\alpha$ (constant) and $\beta_j$ ($j = 1, .., 9$) are the parameters being estimated. The population considered is the number of people older than eighteen.

## 6. RESULTS

The model includes 108 fixed effects, one for each province. The role of these constants is to clear the estimate of these parameters from the residual effects of various nature[11].

The model presented in Table 5 contains a *dummy* that selects regression residues greater than three times the absolute value of the mean squared error[12]. This *dummy* does not affect the statistical significance of any coefficient of interest.

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[11]It should be stressed that the model without fixed effects would entail a modification of the sign of the youth variable, which would significantly and positively influence the orientation towards the NO, contrary to that highlighted by the results of the final estimate (Table 5). Moreover, the specification of the product per employed person in logarithm leads to an incorrect calibration of the constant, making the interpretation of the results more difficult, without changing the impacts and significance of the other variables. Therefore, it was preferred to use the specification presented in Table 5, in which the robust standard errors of heteroscedasticity calculated by the White method are not presented; robust standard errors do not, in fact, modify the significance of the final regression parameters.

[12]In particular this *dummy* selects 170 observations with residues in absolute value greater than three times the mean squared error. The *dummy* has been inserted to verify the robustness of the regression compared to outliers. Even including this *dummy* the results do not change.

TABLE 5. – *Estimation of NO determinants (OLS, fixed effects)*

| dependent variable: % NO | Coefficient | Standard error | t-stat |
|---|---|---|---|
| % votes for PD at 2014 European Elections | -0.437*** | 0.007 | -63.0 |
| % young people on population | 0.027 | 0.027 | 0.9 |
| % unemployed on labour force | 0.248*** | 0.017 | 14.8 |
| % public employees on population | -0.073** | 0.029 | -2.5 |
| var. % (2016 on 2013) Real GDP | -0.518*** | 0.061 | -8.9 |
| GDP per employed | -0.109*** | 0.031 | -3.5 |
| employment rate (%) | -0.015*** | 0.005 | -3.0 |
| % commuters on population | 0.103*** | 0.009 | 11.1 |
| % highly educated on population | -0.033*** | 0.009 | -3.5 |
| % no profit employees on employed | -0.256* | 0.154 | -1.7 |
| constant | 75.142*** | 1.803 | 41.7 |
| number of observations = 7,755; $R^2$ = 0.719; Adjusted $R^2$ = 0.716; | | | |

p-values significant at 1% (***), 5% (**) and 10% (*).
Figures and estimates based on ISTAT and Ministry of Interior data.

The orientation for the YES appears closely related to the choice of having voted for the Democratic Party in the last European elections, shown by the negative and statistically significant coefficient: *ceteris paribus*, with a 10% growth[13] of the share of votes for the PD at the European elections of 2014, the percentage of NO votes at the referendum is reduced by more than 4.3%.

In general, the regression appears to have hit the mark: in particular, the implicit result of the estimates (fit) is 59.43% in favour of the NO (the actual result was 59.12%).

The preference for the NO grows in areas marked by high unemployment and high commuting of students and workers. These two variables, which have a positive sign and are statistically significant, contribute to define a situation of general malaise, which may have led to accuse the government action with a NO at the referendum. On this, David (2016) points out that the unemployment variable in the South of Italy may have influenced the accentuation of the NO despite the good results of the Jobs Act. In that area the problem of the labour market may not be the supply - on which the reform acted - but the demand[14].

The issue of the malaise-vote at the referendum is also addressed by G. Resce (2016) with a strategy[15] that we could not replicate, due to the lack of municipal data. Instead of introducing several variables linked to malaise - as unemployment rate or the importance of commuting - one could have pro-

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[13]Possibly shifting from one municipality to another. The regression analysis is confined to a single time observation, precisely 2016, partly reconstructed, for all the Italian municipalities.
[14]P. David (2016), Referendum: The NO changes from north to south, lavoce.info, December 20th.
[15]G. Resce (2016) in www.economiaepolitica.it/lavoro-e-diritti/distribuzione-e-povert/referendum-costituzionale-il-dualismo-generalizzato-boccia-la-politica-che-lo-ignora, December 28th.

ceeded, in the presence of SED data on a municipal basis, to introduce in the regression a unique and synthetic indicator of malaise. From the regional BES (*Benessere Equo e Sostenibile*) data, there exists an appreciable positive correlation between the high values of the indicator and an accentuation of the YES.

Unlike the bi-variate analysis suggests, the relationship between the orientation for the NO and the age of the voters does not appear significant. The results obtained indicate that age has only had an influence mediated by the unemployment and commuting status.

Despite the result revealed by post-vote surveys, we found that having a degree or an equivalent diploma, or a higher degree of qualification, reduces the coefficient of having voted NO, given that this variable is negative and statistically significant. More conservatively, it is sufficient to interpret this result to exclude that the degree of education implies a precise orientation in the referendum vote (rather than claiming a correlation between education and a precise orientation: indeed, the degree of education can be used with different intensities, providing contradictory or poorly significant results, if for example, a high school degree is also included).

The impact of being public employees on the voting decision remains uncertain, since this variable is not very statistically significant[16].

In areas marked by a higher percentage variation in real GDP between 2011 and 2016, there is a greater prevalence in the choice to support the reform (or, rather, the government), as well as in areas with a higher occupancy rate. Both variables are negative and statistically significant, confirming the fact that where the economic well-being is greater, trust in the political institutions is small and traducing in a preference for the YES.

A careful evaluation of the individual provincial fixed effects has also led us to exclude, due to lack of significance, those relating to the Tuscan provinces, while the role of the South in voting against the reform is found in a rather heterogeneous way in the real data, excluding the unequivocal interpretation of the voting orientation on the basis of living in different geographic macro-divisions.

Finally, the variables related to the newly-created provinces, special-status regions, large cities, and the interaction effects of among these last three variables were not significant.

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[16]The variable relating to the percentage of public employees (on population older than 17) reaches its peak (62.9%; Table 3) in correspondence with the municipality of Rome; the reasons for this exceptional value are obvious. The poor correlation with the referendum orientation (Table 4) and the ambiguity of the coefficient of the percentage of public employees in the regression model could depend on the concentration observed in Rome. Given how the data that feed the model are constructed, we cannot investigate this point in depth (i.e. whether there was a specific preference by public employees in the referendum vote). In fact, even inserting a dummy that excludes or selects observations relating to the municipality of Rome, the result does not change, and the variable relating to public employees remains statistically not very significant. But this depends on the fact that Rome is treated like any other municipality: to understand how the relevant mass of public employees has actually voted in Rome and, therefore, given the absolute weight of public servants in Rome, how they have actually voted on a national basis, it would be necessary to analyze the vote by electoral sections, for which however, in any case, SED features, including the status of public employee, are not available.

The intensity of the effect of the determinants on the vote is given by the magnitude of the relative parameters. As an example, we can consider the unemployment parameter, which is equal to about one quarter of a point. If, for each municipality observation, one replaces the real unemployment with the value observed in Milan in 2016, which is four percent lower, the preferences for the NO would come down by more than one percent (to 58%). Therefore, as regards the unemployment rate, while it is likely that it has affected the rejection of the reform, it could not be held to be responsible. It is the combination of all the variables identified that has determined it.

Obviously, the growth experienced between 2013 and 2016 has a preponderant role, since the estimated parameter is close to the unit. In fact if one replaces the observed growth by municipality (even if is the same for all the municipalities belonging to the same province) with the one experimented by the most dynamic province, i.e. Bolzano, we would go from a reduction of GDP on average of 2.6 percent as a provincial average, to a growth of 5.6% and therefore for the whole country, since this value was recorded in the province of Bolzano. Approximately, this substitution involves a reduction in the percentage of the NO of the same amount (over 7%), bringing the hypothetical result to a NO percentage of around 51.5%.

From these two examples it can be inferred that an economically more dynamic Italy, where the recovery had not met the obstacle of 2012, and consequently with a reduced unemployment rate, especially in the South, would have been divided perfectly in half by the orientation for the vote in the referendum of December 2016.

### 7. VALIDATION TEST

In order to validate the adaptation of the model, we used a simple validation test. A random 5% sample was selected from the reference population (391 observations). This sample was momentarily excluded. Therefor, the model was estimated again to obtain new coefficients on the variables of interest. Once estimated, the coefficients were used to simulate the NO percentage. This time the population is the sample of 391 observations previously extracted and momentarily excluded. The results of this exercise are displayed in Table 6.

The test confirms the validity of the model in adapting to different compositions of the population. The estimated NO percentage is not significantly different from the observed NO percentage.

These suggestions are also confirmed by the mean squared error. Obviously, the test may have distortions caused by the random extraction of the reference sample (391 observations).

Only 9.5% of the municipalities of the extracted sample have the variation between the relation of estimated NO percentage and real NO percentage ($\epsilon$) exceeding 5% in absolute value.

TABLE 6. – *Model validation test*

| | |
|---|---|
| % NO estimated | 59.86 |
| % NO observed | 59.57 |
| | |
| Mean squared error (MSE) | 0.08 |
| | |
| municipalities percentage $\epsilon >5\%$ | 9.46 |
| municipalities percentage $\epsilon >20\%$ | 0.77 |
| | |
| number of observations | 391 |

Figures and estimates based on ISTAT and Ministry of Interior data.

8. CONCLUSIONS

Ignoring the fact that in December 2016 economic recovery was already underway, at moderate rates, the misunderstanding that may have been reflected in the vote of many voters was the confusion over the terms of the vote. To instil the doubt that someone was voting (i.e. choosing) between the reform and Eden, it is necessary to treat the comparison between the actual options and those in the description of the features of Eden. Many voters strengthened their rejection of the reform on the basis of the shifting of the alternative options of the vote: they have not voted between the real alternatives - namely, the current reality and reform - but between the reform and Eden, with the inevitable consequence of rejecting the former (Eden is, by definition, unbeatable). The results only partially confirm the emphasis on some SED features as determinants of the rejection of the reform[17], which were identified via pre-and post-vote opinion polls. In the geographical areas marked by higher unemployment, higher unemployment growth and lower economic growth, there has been, *ceteris paribus*, a clearer prevalence of the NO. However, the role of the vote of young people does not emerge clearly. Rather, the condition of youth malaise seems to have determined the rejection of the reform. In fact, unemployment and commuting greatly prevail over the age variable. The role of education in determining the defeat of the YES is not confirmed. Holding a degree or an equivalent diploma or a higher degree moderately reduces the probability of having voted NO.

The impact of being public employees is still uncertain and statistically insignificant, while the role of the South, in the vote contrary to the reform, is found in the real data even though there is not a clear and unequivocal association between voting orientation and residence of voters in specific macro-geographic areas.

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[17]It should be recalled that the question on the referendum ballot paper was formulated as follows: "Do you approve the text of the Constitutional law concerning provisions..." approved by Parliament and published in Official Journal 04-15-2016: YES-NO.

Considering the non-strictly SED conditions the relationship between political leanings in that electoral round and the referendum vote appears to be solid, with the YES being concentrated where the vote for the Democratic Party (PD) in 2014 was greater.

The strong correlation between vote and political leaning raises a crucial question: what did Italians vote for on December 4, 2016?

If someone imagines that the SED variables mentioned above have influenced the vote in a precise direction, as it actually seems to be, a fairly homogeneous percentage of rejection should have been observed among the voters of the different parties, a circumstance clearly contradicted by the results of the opinion polls (see notes 5 and 6). Therefore, it must be assumed that the Italians did not vote on the merits of the reform - as they themselves stated at the time according to reliable opinion polls. Moreover, they did not vote mainly on the basis of their own socio-economic condition.

The orientation for the referendum vote appears to be developed in successive stages (or according to hierarchically ordered criteria): (1) The primary determinant is the political leaning (endorsement of the voting guidelines proclaimed by the preferred party leader(s) who one had voted for in the previous political elections), (2) the socio-economic condition played a role, and finally, (3) the vote was based on some opinion on the actual contents of the reform.

We give a negative interpretation of the above finding, the hierarchical criteria, since the basic rules, such as the constitutional ones, should ignore political leanings and the short-term expediency of people in charge of deciding the laws itself (Rawls, 2001). It is worth to say that the idea of a system based on rules drawn-up by disinterested actors, authentically freed from their personal advantages, is clearly highly ambitious.

Hence, according to this rationale, the vote that largely disregards the electoral reform content is certainly legitimate and fairly comprehensible; furthermore, the same is true when the vote acts as a reaction to give vent to a widespread malaise, proxied by the SED variables used in our empirical analysis.

However, despite that, it is extremely important to deepen the knowledge about the institutions and their own fundamental role, also as a catalyst for a long-term economic growth, thus keeping the sense and the value of institutional innovations high.

It remains to be understood whether these are fruitful strategies, for oneself and for the community, in a medium-long term perspective. In any way, more than two years after that vote, it is necessary to note the total abandonment of any project of organic reform of our country's institutions.

Nowadays, all over the world, it is widely accepted the idea to reconcile citizens with politics and institutions. Moreover, even though it is evident how politics and institutions should conduct its own role separately, at least at the starting time of definition of the basic rules, it seems reasonable to consider the citizens' knowledge of the institutional framework a fundamental requisite to carry out the reform. With this in mind, how could someone manage to be closer - or less distant - to something while he/she does not know anything concerning the argument itself? This topic is extremely related to the "prepara-

tion of mastering the voter's job", recently relaunched by Brennan (2018) who calls for a revision of the role of citizenship in light of a re-evaluation of the rights and duties of citizens.

Our modest proposal suggests the introduction of subjects, in high-schools and during the entire academic career of young people, which are able to teach politics and political institution systems - not merely an updated re-edition of the old Civic Education. The update, compared with past experiences, would consist in providing an 'economic' version of these political institutions to highlight, even if just superficially, the link between the correct functioning of the basic rules and the institutions and the performance of the civilian and economic life of both individuals and organizations.

Then, in the years to come, a constitutional referendum will probably be more difficult to personalize and the political parties will have less space to exploit it through threats and announcements alien to the merit of the reform. At the same time, on the side of citizens, there should exist greater awareness of the view that we vote and discuss about something real which is influencing our daily life and the entire community.

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