

# The importance of the electoral rule: Evidence from Italy

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## Abstract

We test the effect of an important electoral reform implemented in Italy from 1993 to 2001, that moved the system for electing the Parliament from purely proportional to plurality rule (for 75% of the seats). We do not find any effect on either the number of parties or the stability of governments (the two main objectives of the reform) that remained unchanged at their pre-reform level.

**Keywords:** Electoral system; Plurality rule; Duverger's law; Bootstrap;

**JEL:** H7

## 1 Introduction

Among political institutions, the most widely studied is certainly the electoral rule. This reflects the crucial importance that both political scientists and economists assign to the rules governing the ballot box in shaping the characteristics of the political system, the behaviour of voters, the selection of politicians, the policies chosen by governments and finally, the economic outcomes. For instance, among political scientists, Duverger (1954) analysis has spanned an enormous literature attempting to connect the features of the electoral rule with the equilibrium number of parties and candidates (e.g. Cox (1997)). On their side, economists have developed several models explaining policy and economic outcomes as the result of the contrasting incentives generated by the different electoral systems (for a survey, see Persson and Tabellini (2001)). This focus seems also to be justified on empirical grounds. According to Persson and Tabellini (2005) extensive empirical analysis, for example, the electoral rule is indeed the "key" political institution: *ceteris paribus*, a switch from proportional voting to plurality rule should generate an impressive 5% GDP decrease in public spending<sup>1</sup>. But this analysis, as many others addressing similar relationships between the electoral system and economic outcomes (see for instance, Alesina and Drazen (1991), Alesina and Perotti (1994); Persson et al. (2003)), is based on comparison across countries that differ along many other dimensions beyond the electoral rule. And however clever devices one can imagine for trying to identify a causal effect, there always remains the doubt that the relationship between the electoral rule and the outcome of interest may be generated by

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<sup>1</sup>See also Persson and Tabellini (2004). For a contrary view, see Iversen and Soskice (2006) and Ticchi and Vindigni (2010).

some other uncontrolled factor that "cause" both the electoral rule and the outcome<sup>2</sup>. Besides, reforms of the electoral system are in reality rare events<sup>3</sup>, so that we generally lack the kind of variation that could help us in identifying casual effects.

This suggests that to get more convincing evidence one should rather try to concentrate on the few existing examples of electoral reform inside a single country, where the *ceteris paribus* assumption is more reasonable. On these grounds, we discuss here the effects of an important reform introduced in Italy in 1993 (and then repealed again in 2005)<sup>4</sup>. This reform changed the electoral rule for the national parliament, moving it from a pure proportional system to a mixed electoral one, where 75% of the seats were assigned through plurality rule in single candidate districts and the rest by proportional voting (e.g. Soberg Shugart and Wattenberg (2001); see below for further details). The reform, somewhat imposed on the Italian parliament by the results of a national referendum (D'Alimonte (2001)), had, according to his advocates, several objectives. The first and foremost was to increase the accountability of parties and politicians, forcing them to form pre-electoral coalitions on well defined policy platforms. But it was also expected that the reform would solve some long term problems of the Italian party systems, such as the excessive fragmentation of the political landscape and the short duration of governments and legislatures. The majoritarian prize in the single district would force the different parties to merge together and eliminate the smaller and more extreme parties from the political arena. The stability of governments and legislatures would raise as the electoral cost for parties to dissolve existing coalitions (once they were formed) would increase. Accordingly, we compare here before and after reform values of several variables capturing these expectations, such as the number of parties represented in Parliament, the number of parties in the ruling coalition, the duration of governments and of legislatures and the seats of the major party in the ruling coalition.

To perform our analysis, the crucial problem we face is that our sample size is small in some cases. Statistical inference (based on asymptotic theory) would not be appropriate. For this reason, our statistical inference is based on the bootstrap (Efron (1979)), that has been shown (Hall (1992)) to deliver much more accurate inference in finite samples (while in large sample is at least as accurate as the approximation obtained from first-order asymptotic theory<sup>5</sup>). We also use several tests to check the robustness of our findings.

We do not find *any* effects of the reform on the stability of government or on the number of parties. Looking at both time series the average duration of Italian governments and the number of parties represented in Parliament we do not find any structural change in spite of the changed electoral rule. Also, the number of seats of the major party fell, whereas the number of parties inside the ruling coalitions increased, meaning that if anything the reform had the effect of increasing the instability of the ruling coalitions, contrary to the expectations.

In our view, these results raise considerable doubts on the trust that economists and other social scientists have on the importance of the electoral rule for political behaviour or on their ability to predict the effect of a reform. Electoral rules are just one component of the general

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<sup>2</sup>For a criticism along these lines see for instance the Acemoglu (2005) review of Persson and Tabellini (2005).

<sup>3</sup>Indeed, in the sample of 60 democracies studied by Persson and Tabellini (2003) only two enacted important reforms of their electoral system between 1960 and 1990 (Cyprus and France).

<sup>4</sup>In December 2005, just a few months ahead of 2006 national elections, Italy's electoral system was again reformed moving to a system of "bonus-adjusted" proportional representation (see Renwick et al. (2009)). The reform was the result of tough bargaining inside the then ruling centre-right coalition and was approved with only the votes of the parliamentary majority. The new system is not comparable either with the previous proportional rule or with the majoritarian one and for this reason we do not consider it in the present analysis.

<sup>5</sup>However, the idea to use the bootstrap in empirical analysis related to electoral system is not new. Fredriksson and Millimet (2004) investigate the effect of electoral rules on environmental policymaking and their inference is based on the bootstrap.

structure of the political system, which is the result of the sedimentation of long run historical process. As such, this cannot be changed that easily.

The rest of the paper is organized as follows. Section 2 provides further information on the 1993 Italian reform. Section 3 present our data and empirical analysis. Section 4 concludes by discussing our results more extensively.

## 2 The Italian reform

In 1993, Italy adopted a mixed electoral system for the election of both branches of its bicameral legislature, abandoning the proportional electoral rule that had characterized the country for 48 years. The reform was not based on the result of an extensive discussion in the country or in the Parliament on the shortcomings of the former electoral system (as it happened, for instance, in New Zeland in the same year), but it was rather the result of a somewhat random process<sup>6</sup>, involving (in order): 1) the results of a 1992 judicial investigation ("clean hands") that had revealed the extent and depth of political corruption, undermining popular consensus in the old political parties and creating support for radical reforms; 3) the results of a national referendum<sup>7</sup> on the electoral system for the upper house, that given the constraints imposed in Italy on this legislative tool<sup>8</sup>, could only change that system in the direction of introducing plurality rule for 75% of the seats; 4) the subsequent decision by the Parliament to uniform the system for electing the Chamber as much as possible to the new one for the Senate<sup>9</sup>, in order to guarantee political congruence between the two houses (deemed necessary in the perfect Italian bicameralism system). Some differences however remained (due to constitutional constraints), as the rules employed to elect the Chamber allowed voters to cast two separate ballots, one for each tier, while in the election of the Senate the proportional and majoritarian votes were fused into one<sup>10</sup>. The seats not allocated through plurality rule were assigned on the basis of the votes received by the different lists at the national level, through a mechanism (called *scorporo*) that was meant to protect the best losers, with again some small differences between the two houses<sup>11</sup>. A threshold was also imposed, so that only lists that had gained at least 4% of votes at the national level could participate to the proportional distribution of seats.

Despite the confuse path of the reform, the introduction of the new electoral laws was accompanied by a lively debate, inside and outside the Parliament, to which all main Italian political scientists participated (see Katz (2001) and D'Alimonte (2001) for a detailed review of the main positions). And while reservations were raised by many analysts on pieces and bits of the reform, there was also a widespread consensus on its ability to bring about its main objectives. The most cited one was to (1) "secure the stability of parliamentary majorities and hence a greater capacity to govern". A second was for a (2) "simplification ("aggregation") of the party system, at the minimum by encouraging the formation of stable governing coalitions, if not simply the merger of many parties into larger formation" (Katz (2001, p. 102))<sup>12</sup>. Related objectives were 3) to

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<sup>6</sup>See Katz (2001) for a detailed account.

<sup>7</sup>Held in April 1993 and approved by 83% of voters.

<sup>8</sup>Popular referenda in Italy can only erase some existing pieces of legislation but cannot propose new one.

<sup>9</sup>Law n.276 and Law n.277, both approved in August 1993.

<sup>10</sup>See Ferrara (2006) for a detailed analysis of the consequences of this difference for strategic entry by candidates.

<sup>11</sup>See again Katz (2001) for details. Basically, the votes used to elect the candidates in the single district by plurality rule were subtracted by the total votes received at the national level by the lists supporting the winning candidates and the remaining votes were used to allocate the remaining seats of both the Chamber and the Senate.

<sup>12</sup>As Mario Segni, the proponent of the 1993 referendum put it "governability cannot be assured unless there is

create the possibility of alternation in government<sup>13</sup> and 4) to increase the direct accountability of individual members of Parliament to their electors. Objective 3) was certainly reached as the parliamentary majority shifted from the center right to the center left and back in the three national elections held with the new system (1994, 1996, 2001). There is also some evidence that objective 4) was also reached to some extent, at least in competitive districts (Galasso and Nannicini (2011)). What about objectives (1) and (2)?

### 3 Data set and Empirical Analysis

To answer the question, we collect data for all Italian political elections in the time span going from 1948:04:18 to 2001:05:13. Over this period, there were 14 general elections: 11 under proportional representation, and 3 under the mixed electoral system described above. During the period, 55 governments were in office: 47 before the 1993 electoral rule reform and 8 after the reform.

To test the impact of the 1993 electoral reform, we estimate five regressions of the following form

$$y_t = c + \beta D_t + \epsilon_t \quad (3.1)$$

where  $t = 1, \dots, N$ , where  $N$  is the sample size, and  $D_t$  is a 0, 1 dummy variable which is equal to 1 after the 1993 electoral reform and zero otherwise.  $y_t$  represent the way we capture the expectations (1) and (2) above<sup>14</sup>. Specifically, we use a) the number of days the parliament is in office and b) the number days the government is in office as alternative measures for the stability of government or government coalitions, prediction (1) above. We use c) the number of parties in the Parliament, d) the number of seats of the majority party, and e) the number of parties in the coalition government as alternative measures of the fragmentation of the political system. The descriptive statistics of the five variables are reported in table 1.

Variable	Average	Median	Minimum	Maximum	Std. dev.	Sample size
N. of parties	10.071	10	9	14	2.01	14
N. of seats maj. party	236.36	260.5	122	305	48.47	14
Days Parliam. in office	1475.9	1589	633	1874	411.53	14
Days Gov. in office	353.96	326	9	1414	275.24	55
N. parties coal. gov.	3.12	3	1	6	1.57	55

Table 1: Descriptive statistics of our sample.

The error term  $\epsilon_t \sim (0, \sigma_t^2)$  with possibly  $\sigma_t^2 \neq \sigma_s^2$  for  $t \neq s$ . The value of the constant ( $c$ ) provides the average value of the dependent variable up to the 1993 electoral reform. The

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also a simplification and homogenization of the political stage”

<sup>13</sup>It should be recalled that in the aftermath of the second world war Italy had basically the same government majority for all the years preceding the reform, due to the dominant role played by the Christian Democratic Party and the exclusion to power of the Italian Communist Party, the largest communist party in the western world.

<sup>14</sup>For simplicity, we only concentrate here on the Chamber. However, we repeated the exercise for the Senate too, obtaining basically the same results (available by the authors on request).

value of  $\beta$  provides an estimate of the change of the constant after the 1993 electoral reform. In this framework, clearly, if  $\beta$  is statistically significant it means that the dependent variable experienced a structural break<sup>15</sup>. Moreover a significant  $\beta$  can be interpreted as a Welch's  $t$ -test which rejects the null of equal means between the two periods. To obtain consistent empirical evidence there are two issues to consider: the small sample size, and the short period during which the dummy variable is equal to one.

As anticipated in section 1, we tackle the first issue by using bootstrap methods. These were originally proposed by Efron (1979) and have become the standard approach to obtain robust inference when the sample size is small. Davidson and Mackinnon (2004) (p. 171) and Davidson and Flachaire (2008) show very good performance of the bootstrap using a sample size of 10 observations. When the time series is homoscedastic the appropriate bootstrap is the regular bootstrap, while if the time series displays heteroscedasticity, the appropriate bootstrap method is the so-called wild bootstrap (see for details Davidson et al. (2007) and Davidson and Flachaire (2008)). In brief, we pre-test for homoscedasticity (the White's test for heteroscedasticity is reported in table 2), and if we reject the null hypothesis, we compute the standard errors and the  $p$ -values by the wild bootstrap.

Concerning the second issue, to check whether the (short) length of the dummy variable can distort our  $t$ -statistic, we have performed some Monte Carlo experiments<sup>16</sup>. In those experiments, we have tried to re-create the conditions met in the worse case of empirical analysis. Then, we have computed the power function (Davidson and Mackinnon (2004, p.170)) for both the bootstrap  $t$ -test and the asymptotic  $t$  test at the .05 level. The highest curve is for the test based on the wild bootstrap. Moreover, the two curves are smooth giving evidence in favour of a consistent inference.

The estimation results are shown in table 2. For completeness, we report in the table the Ljung-Box autocorrelation test (which shows no autocorrelation), the test for the null of normality of the residuals, and the adjusted  $\bar{R}^2$ .

Dep. Var.	c	$\beta$	LM Het.	Ljung-Box	Norm. Res.	$\bar{R}_{adj}^2$	N
N. of parties <i>p-value</i>	9.63*** (0)	2.03 (0.52)	3.30* (0.06)	0.684 (0.62)	1.11 0.57	0.115	14
N. of seats maj. party <i>p-value</i>	256.54*** (0)	-94.21*** (0)	0.20 (0.65)	5.11 (0.4)	0.66 (0.71)	0.658	14
Days Parliam. in office <i>p-value</i>	1503.45*** (0)	-128.78 (0.85)	0.77 (0.7)	3.22 (0.78)	5.54* (0.06)	-0.06	14
Days Gov. in office <i>p-value</i>	322.42*** (0)	216.82 (0.46)	3.95** (0.04)	1.84 (0.11)	13.04*** (0)	0.06	55
N. parties coal. gov. <i>p-value</i>	2.82*** (0)	2.04*** (0)	4.1** (0.04)	1.45 (0.19)	7.72** (0.02)	0.198	55

Table 2: (\*), (\*\*), and (\*\*\*) denote 10%, 5%, 1% significance level respectively, based on HC standard errors (shown in parenthesis).  $N$  is the sample size.

As shown in the table (2), the  $\beta$  is highly statistical significant in only two out of five regressions. In particular, the number of seats of the majority party decreased by 94 (on average) seats and the number of parties in the coalition government increased by 2 after the reform. This means

<sup>15</sup>In other words, the Chow structural break test rejects the null of no structural break in a regression of the considered dependent variable onto the constant only.

<sup>16</sup>To save space the results are not reported, but they are available on request

that, contrary to its main objectives, the reform did not affect either the stability of governments (legislatures) or the fragmentation of the political system. It had, however, the effect of making the ruling coalitions more unstable, increasing the number of parties inside it and reducing the role and the importance of the major party. This was again against expectations.

As a further check on our results, we test the null hypothesis of equal means before and after the 1993 electoral reform for all the five variables by the nonparametric Wilcoxon rank sum test<sup>17</sup>. Again, the Wilcoxon rank sum test rejects the null hypothesis of equal mean at the 10% level *only* for both the number of seats of majoritarian party and the number of parties coalition government, confirming the regression's results.

## 4 Conclusion and discussion

Our results may be interpreted in different ways. Possibly, the Italian reform was ill designed to reach its objectives, and possibly, Italian politicians and parties were smart enough to find ways to circumvent the constraints introduced by the reform<sup>18</sup>. But it is still surprising that none of the expected and plausible effects of the reform did actually take place and what happened, if happened, went in the opposite direction to expectations. It is also true that the reform has been in place only briefly. One could argue that the time period was indeed too short to affect the behaviour of voters, who did not have the time to learn and understand the new rules. But this argument is not entirely convincing. First, in a longer time span many other things also change, making in fact more difficult to identify the effect of a reform. Second, the point is that even in our limited time span, we could not find any tendency for our variables to move in the direction expected by the reform. Contrary to the main flavour of the literature surveyed above, the Italian experience then suggests caution in predicting the effects of a reform of the electoral rule, even on the political variables that are directly influenced by the electoral system.

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<sup>17</sup>The Wilcoxon rank-sum test is a nonparametric alternative to the Welch's t test which is based solely on the order in which the observations from the two samples fall.

<sup>18</sup>For instance, a possible explanation for the survival of small parties in spite of the first-past-the-post rule for 3/4 of seats is based on voters's loyalty to small and ideological parties (e.g D'Alimonte (2001)). Small parties could not possibly win in single candidate districts. But by presenting their own candidates, they could cause the defeat of the ideologically close larger parties. This threat forced the larger parties to find an agreement with the smaller ones, supporting their candidates in some districts and hence guaranteeing their survival. For an analysis that develops this intuition to compare single versus dual ballot elections at the municipal level in Italy, see Bordignon et al. (2010).

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