Let the Voters Choose Women*

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Abstract

Female under-representation in politics can be the result of multiple obstacles in the political selection process. This paper assesses the role of parties' recruitment of candidates and voters' electoral preferences by exploiting the introduction of an Italian law, which prescribes both gender quotas on candidate lists and double preference voting conditioned on gender. Using a regression discontinuity design, we estimate that the law raises the share of elected female politicians by 22 percentage points. The result is driven by the increase in preference votes cast for female candidates, suggesting a salient role of double preference voting in promoting female empowerment in politics.

Keywords: gender quotas, municipal elections, regression discontinuity design.
JEL classification codes: D72, J45

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1 Introduction

Gender gaps dominate the political arena. According to the Global Gender Gap Index (World Economic Forum, 2015), the world has closed only 23% of the gender gap in politics. In Europe, women represent 28% of politicians in legislative bodies and 27% in government cabinets (European Commission, 2015). In Italy, women represent approximately 30% of members of Parliament.

How to promote female political empowerment? This paper concentrates on the role of parties' recruitment of candidates and voters' electoral preferences. We examine a recent Italian law (215/2012) that requires, for municipal elections, both gender quotas on candidate lists and double preference voting conditioned on gender, whereby voters can express two preferences if they vote for candidates of different genders.[1] The former is designed to affect the behavior of parties, and the latter the behavior of voters. The law targets all Italian municipalities with more than 5,000 residents, allowing us to implement a regression discontinuity design around this threshold. The first elections under the new law took place in May 2013. We assemble a unique dataset on municipal elections in this year, which includes information on all candidates and their ranking on the ballot, the number of preference votes obtained and the elected politicians. We estimate that the policy leads to a 22 percentage-point increase in the share of elected female politicians. We find no robust evidence of a discontinuity in the share of female candidates around the threshold, while there is a significant increase in the share of preference votes cast for female candidates. Moreover, we document an upward shift in women's post-election (based on preference votes) placement on candidate lists, compared to their pre-election ranking decided by parties. All in all, this evidence suggests an important role for double preference voting.

Female under-representation in politics may result from various obstacles in a multi-step ladder process of political recruitment (Norris and Lovenduski, 1995).

[1] Since 2013, in French subnational elections, voters can elect two members of the opposite sex on a "binôme"or tandem ballot, whose names are arranged in alphabetical order. This new system of nomination of both female and male candidates ("binôme") guarantees the achievement of parity in departmental councils.

First, women may not be willing to or may not be interested in competing for political seats, for instance due to time constraints associated with child care duties (e.g., Schlozman et al., 1994) or the lack of self-confidence or external encouragement (Fox and Lawless, 2004). Second, parties, in their role as gatekeepers, may not put women forward as candidates (e.g., Kunovich and Paxton, 2005). Third, voters may be biased against female candidates and not cast votes for them (e.g., Schwindt-Bayer et al., 2010; Black and Erickson, 2004).

The promotion of female participation in politics is justified on the grounds of equity considerations (Stevens, 2007), since women represent 50% of the overall voting population. Moreover, female politicians are less corrupt and show higher cooperation and team working skills (Epstein et al., 2005). A gender-balanced political body may have an impact on the implemented policies and the allocation of resources across different programs, giving more consideration to health and welfare expenditures (Funk and Gathmann, 2014; Jaronicki, 2013; Duflo and Chattopadhyay, 2004; Brollo and Troiano, 2014).[2] Female participation in politics may also create role models for other women, who may decide to pursue a political career (Gilardi, 2015).

How to design policies to increase the presence of women in political institutions has attracted a large attention. While promoting gender equality at large can foster female political participation, parties and voters can be targeted more directly with specific policies, such as gender quotas, zipping, reserved seats, placement restrictions, open lists or constraints on preferences.

Gender quotas are a common policy for tackling gender imbalance and are in place in a few countries, either at the national or the subnational level (Krook, 2010). They are often accompanied by additional measures to further support female political representation, such as zipping, placement mandates (Schmidt, 2009; Schwindt-Bayer, 2009) or list-proportional representation systems (Tripp

[2]The evidence in this regard, though, is not fully conclusive. For example, Ferreira and Gyourko (2014) find that having a female mayor in the United States does not change the policy outcomes such as the size of the local government, the composition of municipal spending, employment, or crime rates. Similarly, Rehavi (2007) only finds marginal effects of female political leadership on policy in the United States.

and Kang, 2008). However, their effectiveness is under scrutiny. Dahlerup and Freidenvall (2008) explain that the success of these policies depends on the combination of several factors, such as the level of enforcement, the type of electoral system, and the real willingness of parties to move towards more equal representation. Indeed, reserving seats for female candidates on party lists does not necessarily raise the chances of having female politicians elected. De Paola et al. (2010 and 2014) show that gender quotas on candidate lists increased the share of female politicians elected to Italian municipal councils and voters' turnout. However, Bagues and Esteve-Volart (2012) study the case of the Spanish senate and find that women remain "pawns" in the political game. In fact, Bagues and Campa (2015) and Casas-Arce and Saiz (2015) show that female access to political institutions can be challenged by the strategic positioning of female candidates on male-dominated party lists. Besides the effects of gender quotas on female presence, and contrary to the concern that gender quotas lower the quality of politicians, Baltrunaite et al. (2014) show that binding gender quotas lead to the election of more educated male and female politicians.

Preference votes allow voters to select one candidate (or more) on the list in proportional representation systems and they were introduced in a number of countries[3] in the past decades. Preference voting is argued to create a direct link between voters and candidates and raise accountability, due to a "threat" that politicians in top ballot positions are replaced by candidates below them. In addition, parties may use preference votes cast for candidates in open list systems to test the popularity of politicians and then promote them to more powerful positions (Folke et al., 2016). However, preference votes appear to be highly ineffective, as voters continue to cast their preferences for the candidates at the top of the list (Farrell, 2001; Gallagher and Mitchell, 2005). There is evidence of general voters' predisposition to vote for male over female candidates or viceversa, which is often context-specific (Sanbonmatsu, 2002; Black and Erickson, 2003; Schwindt-Bayer et al., 2010). Up to date, there is no conclusive evidence about whether policies targeting parties are more or less effective than policies targeting

[3]Austria, Belgium, the Czech Republic, Denmark, Estonia, Lithuania, Norway, the Netherlands, Slovakia, and Sweden.

voters in achieving stronger female political empowerment.[4]

Our paper contributes to the existing literature in several ways. First, we shed some light on the effects of a new policy that combines gender quotas and double preference voting conditioned on gender. Second, we separately identify the effect of the latter tool, providing the first evidence of its potential to promote female political empowerment. For this purpose, we have hand-collected data on candidates and the preference votes they received.[5] This allows us to distinguish whether it is the change in the behavior of parties or of voters that triggers the increase in female presence on local councils. Overall, our contribution may guide the design of policies to promote female empowerment in politics.

The paper is organized as follows: Section 2 presents the institutional setting and the details of Law 215/2012, Section 3 describes our empirical strategy, Section 4 presents the results and Section 5 tests their robustness. Section 6 concludes the paper.

2 The institutional framework and the data

2.1 Law 215/2012

There are approximately 8,100 municipalities in Italy. They vary in terms of geographic, demographic and economic indicators. The municipal administration manages the registry of births and deaths, the registry of deeds, contracting for local roads and public works and, most importantly, social services. It is headed by a mayor, who is assisted by a legislative body, the municipal council (*Consiglio Comunale*), and an executive body, the executive committee (*Giunta Comunale*). Local elections take place every five years and municipal governments cannot

[4]Kunovich (2012) analyzes the Polish open-list system and shows that preference votes cast by the electorate are able to shift females higher up in the original ranking of the party and that these shifts result in a higher number of elected women. Shair-Rosenfield and Hinojosa (2014) show evidence from Chile which is consistent with a negative gender (female) bias among parties, but not among voters and argue for the introduction of policy measures that target parties.

[5]This is the first study that uses data on Italian candidates in municipal elections, in addition to data on the actually elected politicians.

affect their schedule.

The electoral rules of local Italian governments change at the 15,000 resident threshold. Since the regression discontinuity design in this paper exploits the 5,000 resident threshold, in order to keep the electoral institutions constant on both sides of the cut-off, we focus on municipalities with population of less than 15,000. In these municipalities, a mayor is elected according to a single-ballot system.[6] The mayoral candidate who gets the relative majority is appointed. Under this scheme, each candidate for the mayor position can be backed by one list only, with a substantial victory bonus: the list supporting the winner gets 2/3 of the seats in the municipal council, while the rest of the seats are assigned to the remaining lists according to a proportionality criterion. Candidate lists are formed by the local organization of a given party or by independently organized groups of citizens. The electoral system prescribes open lists, whereby voters vote for a party and can also cast a preference vote for an individual candidate from their preferred list. The list consists of at most as many candidates as the number of seats in the council and at least as many candidates as 3/4 of the number of seats for municipalities up to 15,000 inhabitants. The number of seats in municipal councils varies between 6 and 16, depending on the size of the resident population.

Italian Law 215 was passed in 2012 with the aim of increasing the female presence on municipal councils. The measures introduced by the law apply to municipalities with more than 5,000 residents. First, the law establishes that neither sex can represent more than 2/3 of the total number of candidates on party lists for municipal councils. This provision ensures the presence of candidates of both sexes and, in practice, compels parties to reserve at least 1/3 of the total number of positions for female candidates. In municipalities with less than 15,000 residents, non-compliance is punished by removing the names of male candidates exceeding 2/3 of the total. Second, the law introduces double preference voting conditioned on gender: voters are given the option of expressing their preference in favor of two candidates, instead of one, provided that they are of different genders.

[6] In municipalities above the 15,000 resident threshold the mayor is elected according to the run-off system.

The law was in force for the first time in the municipal elections in 2013. Among all municipalities that voted in 2013, only those with more than 5,000 residents were subject to the law, whereas for smaller ones neither gender quotas nor double preference voting conditioned on gender applied.

2.2 The data

We collect data on Italian municipalities that held elections in 2013. Out of the 706 municipalities that voted in 2013, we exclude the ones in regions exempt from the law (Sicily and Trentino), the ones with more than 15,000 residents and the ones where electoral quorum was not reached. Of the remaining 468 municipalities, 319 are below the threshold of 5,000 residents and are not subject to the provisions of Law 215/2012; 149 municipalities are above this threshold and must therefore comply with the law. For each municipality, we collect the publicly available data on the electoral results of the 2013 election and the previous election.[7] We have information on the total number and the identity of elected councilors, the number of female elected councilors, the political orientation of the majority party, and the gender of the mayor. In order to construct municipal-level control variables, we use the 2011 Italian Census data on demographic, occupational, and educational characteristics.

Data on candidate lists are difficult to obtain, as they are only gathered by local electoral offices and they are not published by the Ministry of Interior or made available on the internet. For this reason, we contacted all electoral offices of the municipalities in our sample in order to request candidate lists. If there was no response, we searched for candidate lists published in local newspapers, or directly contacted members of the municipal council or local politicians. On several occasions, the lists could only be obtained by watching parties' electoral campaign video material, or reading official documentation regarding nominations.

[7]Municipal elections take place every five years and, hence, the majority of municipalities voted in 2008 in their previous electoral round. However, as a municipal council may terminate its mandate earlier due to factors such as the unexpected death of the mayor or the resignation of the majority of the councilors, there are several municipalities that voted in the years from 2007 to 2012, and then again in 2013.

Moreover, when possible, we collected analogous data for the previous election in municipalities in our sample. In the end, we obtained data on the gender composition of candidate lists for 349 municipalities (out of the 468 included in our main sample) in the 2013 election. This amounts to a total of 1,038 party lists – 446 for municipalities above the 5,000 resident threshold and 592 for those below it. We also have data on candidates in 193 municipalities in the election prior to 2013, with a total of 531 lists (257 for treated and 274 for control municipalities).

We also collected preference votes cast for candidates for municipal councils to measure the direct effect of double preference voting conditioned on gender. Specifically, we contacted each municipality in our sample with a request to provide candidate lists presented by every party in the 2013 election with the original (party-composed) candidate ordering and the number of preference votes each candidate on the lists received.

Table 1 summarizes the sample coverage in terms of the number of municipalities and the party lists in the 2013 election, in the previous election and the geographical coverage.

[Table 1 here]

3 Empirical strategy

We adopt a sharp regression discontinuity design in order to estimate the effect of Law 215/2012 on the female presence in local politics. We exploit the fact that the measures included in the law, i.e. gender quotas and double preference voting conditioned on gender, only apply to municipalities with more than 5,000 residents. This results in a discontinuous variation in the institutional framework for municipalities of different size along a smoothly increasing forcing variable, namely, municipal population size. Our main regression equation is:

$$\begin{aligned} y_i = \alpha + \gamma_{01}\widetilde{x}_i + \gamma_{02}\widetilde{x}_i^{\,2} + \cdots + \gamma_{0p}\widetilde{x}_i^{\,p} + \psi Treatment_i + \\ \gamma_{11}\widetilde{x}_i * Treatment_i + \gamma_{12}\widetilde{x}_i^{\,2} * Treatment_i + \cdots + \\ \gamma_{1p}\widetilde{x}_i^{\,p} * Treatment_i + \varepsilon_i \end{aligned} \tag{1}$$

where y_i is the outcome variable of interest, e.g., the share of elected female councilors in municipality i. In the party-level regressions estimated for, e.g. the share of female candidates, subscript i is substituted with subscript is and all variables are defined for party s in municipality i.[8] $\widetilde{x}_i$ is the resident population size in municipality i, centered at the 5,000 resident threshold; p is the order of the control polynomial function, with $p = 1, 2, 3, 4$; and $Treatment_i$ is an indicator for municipalities with more than 5,000 residents ("treated municipalities"). The coefficients on the polynomial terms γ are also indexed by 0 and 1 because we allow for different polynomial coefficients on the two sides of the cut-off. The main coefficient of interest is ψ, which estimates the local average treatment effect of the reform.

We show three sets of results for every outcome variable of interest:

1. We graphically investigate the existence of the discontinuity around the 5,000 resident cut-off. For this purpose, we plot local sample means of the dependent variable in small equidistant non-overlapping bins over the support of the resident population size $\widetilde{x}_i$, together with smooth global polynomial regression curves drawn separately for municipalities below and above the threshold.

2. We estimate Equation (1) using polynomials of different orders, ranging from 1 to 4, for the entire sample of municipalities (*parametric approach*).

3. We implement local linear regressions using the procedure in Calonico et al. (2014) for observations within an optimal bandwidth. We use three different bandwidth selectors, namely: the bandwidth selector proposed by Calonico et al. (CTT) (2014), the one proposed by Imbens and Kalyanaraman (IK) (2012), and the cross-validation method proposed by Ludwig and Miller (CV) (2007) (*non-parametric approach*).

While these different specifications serve the purpose of transparently showing

[8] Civic lists can also run for seats. We use the words "party lists" and "civic lists" interchangeably.

the robustness of the results, we will focus on the estimates from local linear regressions when commenting on the magnitudes of the effects.

We define our main dependent variables in terms of shares instead of absolute numbers of councilors (candidates, preference votes, etc.) in municipality level (party level) analysis. This takes into account that both the size of the municipal council and the size of the list change at the cut-off (both increase by three individuals).[9]

4 Results

In this section, we study the impact of the reform on women's political representation in Italian municipalities. We estimate the overall impact of the reform on the share of female councilors in order to evaluate the effectiveness of the law. Then, we assess the role of parties and voters in generating the overall outcome. For this purpose, we first use data on the gender composition of candidate lists and measure the effect of gender quotas on female presence on them. Second, we examine the data on preference votes received by female candidates in order to shed some light on the role of double preference voting in fostering female presence in local politics.

4.1 Effects on female councilors

We examine the share of elected female councilors (i.e. the number of elected female councilors over the total number of councilors) around the 5,000 resident threshold. We use the data on all municipalities in our sample and plot the binned averages of the dependent variable against the municipal population, together with the quadratic polynomial fit on both sides of the cut-off and the 95% confidence intervals. Figure 1 shows a discontinuous jump in the share of elected female councilors in the municipalities above the cut-off, which were subject to the policy.[10]

[9] This change in size was introduced after 2008.

[10] The discontinuity in the share of female councilors is robust and evident in analogous figures with polynomial fits of orders 1 to 4.

[Figure 1 here]

We next estimate the magnitude of the change in the share of female councilors using the control polynomial (parametric) approach. Specifically, we use observations both close to and far from the cut-off point and estimate equation (1) with polynomials of orders 1 to 4 in the four columns of Table 2, Panel A. Polynomials are allowed to differ on the two sides of the cut-off. The results show that the estimated coefficient on the indicator *Treatment* is positive, statistically significant and rather stable in all columns.

To test the existence of the discontinuity in the share of elected female councilors non-parametrically, we implement local linear regressions using a triangular kernel density estimator. In Table 2 Panel B column 1, the optimal bandwidth is chosen by the selector proposed by Calonico et al. (CCT) (2014), in column 2 by the bandwidth selector by Imbens and Kalyanaraman (IK) (2012), and in column 3 by the cross-validation method proposed by Ludwig and Miller (CV) (2007). Conventional estimates with conventional standard errors are presented in row 1. The results are robust and consistent with the coefficients presented in Panel A. Moreover, the point estimate increases as we concentrate on observations closer to the 5,000 resident threshold. The most conservative point estimate of the coefficient on the variable *Treatment* is 0.22 (column 3, row 1 in Panel B) and implies that municipalities that voted in 2013 under the provisions of Law 215/2012 elected municipal councils with 22 percentage points more women.[11] For robustness, we also show biased-corrected estimates with conventional standard errors, and biased-corrected estimates with robust standard errors in rows 2 and 3 in Panel B of Table 2.

[Table 2 here]

[11] In the rest of the paper, when commenting the results, we focus on the most conservative point estimate of the coefficient on the *Treatment* variable, obtained using different bandwidths in the non-parametric approach.

4.2 Effects on female candidates

Next, we attempt to better understand the differential role of parties' and voters' behavior in determining the increase in the share of elected female councilors. We start by investigating the effect of gender quotas on female presence on candidate lists, which parties form before elections. For each party list presented in municipality i in the 2013 election, we compute the share of female candidates on list s in municipality i and we use it as our dependent variable. For municipalities with more than 5,000 residents, the law requires that at least 1/3 of the candidates on each list are female. We graphically investigate the existence of a discontinuity in the share of female candidates at the 5,000 resident threshold. Figure 2 reveals that the gender composition of candidate lists is different on the two sides of the cut-off. Specifically, municipalities with more than 5,000 residents have a larger share of female candidates.

[Figure 2 here]

We also note that the variance in the share of female candidates is much lower in municipalities that are subject to the law. However, when we focus on the observations closer to the cut-off, there is no clear discontinuity in the share of female candidates.[12] Graphical evidence is confirmed both by parametric and non-parametric estimates, shown in Table 3. In summary, while the reform was overall successful in increasing female elected politicians, we do not have firm evidence to attribute this effect to gender quotas.

The evidence in Figure 2 and Table 3 suggests that parties do not behave differently in setting the gender composition of the lists in municipalities with a population close to 5,000. This can be due to a non-binding quota requirement (the requirement is smaller than the existing share of female candidates) or to municipalities below the threshold mimicking those under the gender quota constraint. This mimicking effect would result in gender quotas affecting candidate selection in municipalities on both sides of the threshold. To shed some light on

[12] We find no robust evidence of the discontinuity in the share of female candidates also using analogous figures with polynomial fits of orders 1 to 4.

this effect, we adopt a difference-in-differences approach and compare the share of female candidates in the two groups of municipalities in the 2013 election and in the previous election. We find that the temporal change in the share of female candidates was larger in municipalities subject to the policy, suggesting that smaller non-quota-municipalities did not fully imitate quota-municipalities.[13] Hence, the lack of effect on the presence of female candidates is likely due to gender quotas not being binding at the threshold.[14]

[Table 3 here]

We further consider the impact of the reform on parties by examining the ranking of candidates, as parties do not only determine the gender composition of the list, but also the ordering of candidates. Politicians at the top of the list tend to obtain more preference votes and are therefore more likely to be elected (Farrell, 2001). For a given share of female candidates, the likelihood of being elected thus depends on whether women are placed at the bottom or at the top of the list. Several studies (Bagues and Esteve-Volart, 2012; Casas-Arce and Saiz, 2015) show that, when constrained by gender quotas, parties manipulate the ranking of the candidates so that there is little change in the chances of being elected for male candidates, who usually form the existing party elite. On the contrary, Shair-Rosenfield (2012) shows that parties in India often place women on their lists higher than required by the law. Therefore, we investigate in our set-up whether parties below and above the 5,000 resident threshold rank male and female candidates differently. If this is the case, the discontinuity we observe in the number of elected females at the cut-off may partially result from party decisions regarding the ranking of candidates. Hence, we assess whether placement

[13] We note, however, that we cannot test the identifying assumption of parallel trends in this set-up, because collecting data for candidates in elections two or more mandates before the 2013 election is virtually impossible. The results are available upon request.

[14] De Paola et al. (2010) shows that the same gender quota introduced more than two decades ago was effective in increasing the share of female elected politicians and persisted in the long run. A possible interpretation of our results is that what appears to have been a binding quota in the Nineties, by now has lost its bite (at the very least at the threshold).

of female candidates on party lists is affected by the reform.[15] We rely on Borda ranking which attributes a decreasing number of points to each candidate on the list, i.e. in a list with five candidates, the first one gets five points, the second one – four points, etc., and the last one – one point. We define a Borda score of female candidates as the sum of Borda points of female candidates over the total number of Borda points of all candidates on a given list. This measure exploits the information on the full ranking of candidates to detect systematic differences in candidates' placement, across lists of different length. Figure 3 shows that the Borda score does not change at the cut-off. This is confirmed by the results of the regression analysis shown in Table 4. In addition, we consider an alternative measure of candidate placement based on the presence of at least one female candidate on the top two positions of the list. Once more, we do not find any discontinuity at the cut-off.[16]

[Figure 3 and Table 4 here]

This evidence suggests that the increase in female political empowerment is not likely to be driven by party choices: neither the gender composition of candidate lists nor differences in ranking can account for the large increase in the number of female councilors.

4.3 Effects on preference votes for female candidates

We analyze preference votes to examine the role of double preference voting conditioned on gender in promoting female politicians. Figure 4 plots the number of preference votes cast for female candidates over the total number of preference votes cast for all candidates on the list. There is a visible positive discontinuity at the cut-off. The regression results in Table 5 imply that the effect amounts to an increase of 10 percentage points in the share of votes cast for female candidates on lists presented in municipalities in which voters were given the option of casting a double preference vote conditioned on gender.

[15] We point out that 51% of the lists in our sample are ranked alphabetically and, therefore, are not very likely to exhibit a strategic placement of candidates by parties.

[16] The results are available upon request.

[Figure 4 and Table 5 here]

We further investigate how preference votes cast for female candidates affect women's presence on municipal councils. In the Italian open lists system, the original party ranking of candidates is re-ordered according to preference votes cast by the electorate. This post-election ranking determines which candidates are elected and reflects the influence of the voters' decisions on the ultimate electoral outcome. To capture this influence, we calculate the Borda score using the post-election ranking of all candidates (elected and not elected) and use it as a dependent variable in the analysis. Figure 5 shows that there is a positive discontinuity in this measure at the cut-off. This confirms that preference votes elicited by double preference voting do have a direct and important role in promoting female presence on municipal councils. In other words, directly targeting voters' choices is effective in achieving stronger female political empowerment.

[Figure 5 and Table 6 here]

4.4 Discussion

Does double preference voting increase the willingness of voters to express a preference for candidates? Since electoral data do not register whether a voter has expressed 0, 1, or 2 preferences, we assess the use of preference votes by computing the ratio of the total number of preference votes over the total number of votes cast in a municipality. Figure 6 shows that this ratio jumps at the threshold. This suggests that preference votes are indeed used more actively thanks to the reform. This may be due to a direct effect of double preference voting (the number of voters who express a preference stays the same, but now they cast two preference votes) or from an increase in the number of voters expressing a single preference in favor of women (some voters now vote in favor of a woman, without a paired vote for a man).[17] Since we find that there is no discontinuity at the cut-off in the number of votes cast for male candidates, double preference voting does not subtract preference votes from male candidates.[18] This suggests that voters use

[17]Further in this section we show that turnover is not affected by the reform.

[18]The results are available upon request.

the option of expressing two preference votes, instead of one, and supports the idea that voters exploit their expanded set of voting choices.

[Figure 6 here]

Are there other changes induced by the policy that challenge the conclusion that double preference voting has a substantial role in explaining the observed increase in female elected politicians? We consider shifts in turnout or in selection of politicians as competing factors at work.

First, double preference voting may make the issue of gender representation in politics more salient. This can boost the overall turnout in elections if people decide to vote because of the presence of a more women-friendly policy. However, this does not seem to be the case, as the number of voters (both overall and by gender) does not change discontinuously at the threshold (see Figures 7 and 8). We can also exclude that voters are "confused" by this policy: the number of invalid ballots is not significantly different at the cut-off (see Figure 9).

[Figures 7, 8 and 9 here]

Second, voters may care about the quality of the candidates. In this case, the change in preference votes cast for women may be due to changes in the quality of candidates running for office induced by the reform. We cannot test this effect directly, because data on the personal characteristics of candidates are not public. The following possibilities can arise. If the quality of both male and female candidates increases, the higher number of preferences for female candidates at the threshold cannot be explained by changes in quality. If only the quality of female candidates increases, we should expect that better-quality women obtain more preference votes, independent from the double preference voting mechanism, and are hence elected. However, we do not find any significant discontinuity at the cut-off in the quality of elected female councilors (see Figure 10). This is also consistent with the findings in Baltrunaite et al. (2014), who do not find any significant effect of gender quotas on the quality of elected female politicians, as

measured by their education level or previous occupation.[19] Finally, if only the quality of male candidates increases, we should expect an increase in the number of votes cast for male candidates, which we do not observe, as argued above.

[Figure 10 here]

5 Robustness checks

We verify that the effects of the policy manifest also in elections subsequent to 2013. We consider the sample of municipalities with a population below 15,000 which voted in 2014 (3,631 municipalities, of which 723 treated and 2,908 control) and 2015 (557 municipalities, of which 118 treated and 439 control). We assess the effect of the reform on the presence of female councilors in this larger group of municipalities. Figure 11 confirms that the share of elected women increases at the cut-off in both elections.

[Figure 11 here]

In this enlarged sample, which covers elections in the period 2013-2015, we can also test whether the increase in female elected politicians is driven by a particular geographic region of the country. Given a marked divide in female empowerment across Italy, we replicate our analysis separately for different macro areas (North, Center, South). Our result on the increase of the share of female councilors is confirmed when we conduct the analysis separately in the sub-samples of municipalities in the North, Center and South of the country.[20]

Furthermore, we verify that there are no discontinuities at the 5,000 resident threshold in the distribution of demographic, occupational, and educational characteristics in the main sample of municipalities which voted in 2013. The results of the graphical analysis are shown in Figures 12 to 14. We also implement local

[19] They find a positive and significant effect of binding gender quotas on the quality of male elected politicians.

[20] The results are available upon request.

linear regressions, analogous to those in Section 4, using the three different bandwidth selectors. The results in Table 7 show that municipal characteristics vary continuously with municipal population size.

[Figures 12, 13, 14 and Table 7 here]

Next, we examine the potential discontinuity in our main dependent variables – the shares of female councilors and female candidates – in previous election. As a placebo exercise, we assess whether there are pre-existing differences in the share of female candidates and female politicians that could confound our estimates of the policy effect in 2013. Tables 8 and 9 show that the share of female elected politicians and female candidates do not exhibit any discontinuity at the cut-off in the previous election. The same results emerge from graphical inspection (see Figures 15 and 16).

[Figures 15, 16, Tables 8 and 9 here]

We finally deal with the two main potential pitfalls that can threaten the interpretation of regression discontinuity design results, namely "sorting" and "confounding policies" (Eggers et al., 2016). First, sorting is the documented tendency of municipalities to strategically manipulate their population to fall on the preferred side of the cut-off. To exclude this possibility, we implement a McCrary test and find no evidence of manipulation of the population size in the universe of Italian municipalities.

[Figure 17 here]

Second, we take into account that other features of the Italian municipal setting change at the same cut-off of 5,000 residents: the salary of the mayor and the size of the municipal councils. In principle, a change in the wage of politicians could have different effects on the male and female probability of running for a seat. We first note that the law does not regulate the amount of the attendance fee collected by the councilors, which is the only compensation for this appointment. Hence, direct effects of monetary incentives to run for a seat on

a municipal council are unlikely. Moreover, the change in the mayor's salary at the 5,000 resident cut-off precedes the introduction of Law 215/2012. In fact, there are no discontinuities in the share of female councilors or of female candidates in the elections before 2013, as discussed above. We further study whether the pre-existing discontinuity in the mayor's salary does not confound our results by a difference-in-discontinuities design. Following the specification adopted by Grembi et al. (2016), we estimate a linear model for several bandwidth selectors:

$$\begin{aligned} y_{it} = \delta_0 + \delta_1 \widetilde{x_i} + Treatment_i(\gamma_0 + \gamma_1 \widetilde{x_i}) + \\ After_t[\alpha_0 + \alpha_1 \widetilde{x_i} + Treatment_i(\beta_0 + \beta \widetilde{x_i})] + \epsilon_{it} \end{aligned} \tag{2}$$

where y_i is the outcome variable of interest, namely the share of elected female councilors in municipality i, $\widetilde{x_i}$ is the resident population size in municipality i, centered on the 5,000 resident threshold, $Treatment_i$ is an indicator for municipalities with more than 5,000 residents ("treated municipalities") and $After_t$ is an indicator equal to 1 for the 2013 election and 0 for the previous election. The main coefficient of interest is β_0, which estimates the local average treatment effect of the reform. Positive, large and significant estimates in Table 10 show that the effect of the reform on women's empowerment holds true even when controlling for the discontinuity in the mayor's salary.

[Table 10 here]

6 Conclusions

This paper shows that the introduction of gender quotas and double preference voting, conditioned on gender, has a large, robust impact on women's political representation in Italian municipal governments. Specifically, our causally identified estimates suggest an increase of at least 22 percentage points in the share of female councilors. The paper shows that this effect cannot be explained by changes in party behavior at the cut-off, but rather stems from the actions of voters. If the electorate is given the option of casting a preference vote for one

candidate of each gender, it more often selects female candidates. As a result, double preference voting conditioned on gender leads to stronger empowerment of women in local politics.

The design of policies to promote women in politics has so far mostly focused on selection made by parties, prescribing gender quotas, zipping, or ranking rules in building the party list. Our evidence shows that targeting voters, and not only parties, may be a successful policy. When given the option of double preference voting, voters do choose also women as their preferred candidates and do give a final push in guaranteeing their electoral success.

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Tables and figures

Table 1: Sample coverage

Panel A: 2013 election			
No. of municipalities:	Control	Treated	Total
voted	319	149	468
with all lists available	231	118	349
with preference votes available	231	118	349
with pre-election ranking available	189	108	297
No. of party lists:	592	446	1038
with pre-election ranking available	493	415	908
with non-alphabetical ranking	270	258	528
Panel B: Previous election			
No. of municipalities:	Control	Treated	Total
voted	319	149	468
with all lists available	113	80	193
No. of party lists	274	257	531
Panel C: Geographical coverage			
No. of municipalities:	Control	Treated	Total
North	132	65	197
South	153	63	216
Center	34	21	55

Notes. The table reports sample numerosity for the municipal 2013 election and for the previous one, and the geographical coverage of the sample, distinguishing between treated and control municipalities. For the municipal 2013 election, Panel A reports the number of municipalities that voted (for which we have data on all elected councilors), the number of municipalities with lists available, with preference votes available, and with ranking available. It also reports the total number of party lists, the number of party lists with ranking available and, among them, those with non-alphabetical ranking. For the previous election, Panel B reports the number of municipalities that voted (for which we have data on all elected councilors), the number of municipalities with lists available, and the number of party lists. Panel C reports the number of voting municipalities by geographical area.

Table 2: Female presence on municipal councils

	Panel A: Parametric Approach			
Dependent variable:	Share of female councilors			
	(1)	(2)	(3)	(4)
Treatment	0.189***	0.229***	0.208***	0.286***
	(0.034)	(0.053)	(0.075)	(0.101)
Polynomial order	1	2	3	4
Observations	468	468	468	468
R-Squared	0.187	0.189	0.190	0.196
	Panel B: Non-parametric Approach			
Dependent variable:	Share of female councilors			
	(1)	(2)	(3)	
Treatment	0.290***	0.220***	0.218***	
	(0.075)	(0.045)	(0.035)	
Treatment (bias-corrected)	0.315***	0.227***	0.217***	
	(0.075)	(0.045)	(0.035)	
Treatment (bias-corrected, robust SE)	0.315***	0.227***	0.217***	
	(0.093)	(0.058)	(0.052)	
Bandwidth selector	CCT	IK	CV	
Bandwidth	1,357	2,715	4,779	
Observations on the left	35	106	304	
Observations on the right	39	76	101	

Notes. The table shows the results of parametric and non-parametric estimation. The dependent variable is the share of female councilors over the total number of councilors. In Panel A, the sample includes all municipalities with less than 15,000 residents and that held elections in 2013. Columns 1-4 include polynomials of orders 1-4, respectively, in the resident population, centered on the 5,000 resident threshold. Polynomials are allowed to differ on the two sides of the cut-off. Only the coefficient of interest *Treatment* is reported. In Panel B, conventional RD estimates with a conventional variance estimator, bias-corrected RD estimates with a conventional variance estimator, and bias-corrected RD estimates with a robust variance estimator are reported. The sample includes municipalities voting in 2013 within the indicated bandwidth around the cut-off of 5,000 residents. Different bandwidth selectors are used in columns 1-3: the bandwidth selector proposed by Calonico, Cattaneo, and Titiunik (CCT) (2014); the bandwidth selector by Imbens and Kalyanaraman (IK) (2012); and the cross-validation method proposed by Ludwig and Miller (CV) (2007), respectively. * p<0.1, ** p<0.05, *** p<0.01.

Table 3: Female presence on candidate lists

	Panel A: Parametric Approach			
Dependent variable:	Share of female candidates			
	(1)	(2)	(3)	(4)
Treatment	0.024	0.043	0.023	−0.057
	(0.019)	(0.033)	(0.054)	(0.082)
Polynomial order	1	2	3	4
Observations	1,038	1,038	1,038	1,038
R-Squared	0.078	0.080	0.080	0.085
	Panel B: Non-parametric Approach			
Dependent variable:	Share of female candidates			
	(1)	(2)	(3)	
Treatment	0.016	0.030	0.031*	
	(0.047)	(0.018)	(0.019)	
Treatment (bias-corrected)	0.014	0.025	0.036*	
	(0.047)	(0.018)	(0.019)	
Treatment (bias-corrected, robust SE)	0.014	0.025	0.036	
	(0.065)	(0.033)	(0.031)	
Bandwidth selector	CCT	IK	CV	
Bandwidth	1,372	4,821	4,742	
Observations on the left	71	581	570	
Observations on the right	93	296	291	

Notes. The table shows the results of parametric and non-parametric estimation. The dependent variable is the share of female candidates over the total number of candidates on list s in municipality i. In Panel A, the sample includes all lists presented in municipalities with less than 15,000 residents and that held elections in 2013. Standard errors are clustered at the municipal level. Columns 1-4 include polynomials of orders 1-4, respectively, in the resident population, centered on the 5,000 resident threshold. Polynomials are allowed to differ on the two sides of the cut-off. Only the coefficient of interest *Treatment* is reported. In Panel B, conventional RD estimates with a conventional variance estimator, bias-corrected RD estimates with a conventional variance estimator, and bias-corrected RD estimates with a robust variance estimator are reported. The sample includes municipalities voting in 2013 within the indicated bandwidth around the cut-off of 5,000 residents. Different bandwidth selectors are used in columns 1-3: the bandwidth selector proposed by Calonico, Cattaneo, and Titiunik (CCT) (2014); the bandwidth selector by Imbens and Kalyanaraman (IK) (2012); and the cross-validation method proposed by Ludwig and Miller (CV) (2007), respectively. * p<0.1, ** p<0.05, *** p<0.01.

Table 4: Female placement on candidate lists

	Panel A: Parametric Approach			
Dependent variable:	Borda score of female candidates			
	(1)	(2)	(3)	(4)
Treatment	0.037	0.029	0.007	−0.026
	(0.025)	(0.043)	(0.069)	(0.109)
Polynomial order	1	2	3	4
Observations	897	897	897	897
R-Squared	0.066	0.066	0.067	0.067
	Panel B: Non-parametric Approach			
Dependent variable:	Borda score of female candidates			
	(1)	(2)	(3)	
Treatment	−0.005	0.033	0.024	
	(0.050)	(0.022)	(0.027)	
Treatment (bias-corrected)	−0.023	−0.013	0.001	
	(0.050)	(0.022)	(0.027)	
Treatment (bias-corrected, robust SE)	−0.023	−0.013	0.001	
	(0.066)	(0.050)	(0.044)	
Bandwidth selector	CCT	IK	CV	
Bandwidth	1,949	9,302	4,668	
Observations on the left	95	487	456	
Observations on the right	138	388	259	

Notes. The table shows the results of parametric and non-parametric estimation. The dependent variable is Borda score defined as the sum of Borda points of female candidates over the total Borda points of candidates on list s in municipality i. In Panel A, the sample includes all lists presented in municipalities with less than 15,000 residents and that held elections in 2013. Standard errors are clustered at the municipal level. Columns 1-4 include polynomials of orders 1-4, respectively, in the resident population, centered on the 5,000 resident threshold. Polynomials are allowed to differ on the two sides of the cut-off. Only the coefficient of interest *Treatment* is reported. In Panel B, conventional RD estimates with a conventional variance estimator, bias-corrected RD estimates with a conventional variance estimator, and bias-corrected RD estimates with a robust variance estimator are reported. The sample includes municipalities voting in 2013 within the indicated bandwidth around the cut-off of 5,000 residents. Different bandwidth selectors are used in columns 1-3: the bandwidth selector proposed by Calonico, Cattaneo, and Titiunik (CCT) (2014); the bandwidth selector by Imbens and Kalyanaraman (IK) (2012); and the cross-validation method proposed by Ludwig and Miller (CV) (2007), respectively. * p<0.1, ** p<0.05, *** p<0.01.

Table 5: Preference votes for female candidates

	Panel A: Parametric Approach			
Dependent variable:	Share of preference votes for female candidates			
	(1)	(2)	(3)	(4)
Treatment	0.140***	0.144***	0.127**	0.077
	(0.022)	(0.033)	(0.051)	(0.076)
Polynomial order	1	2	3	4
Observations	992	992	992	992
R-Squared	0.168	0.168	0.169	0.169
	Panel B: Non-parametric Approach			
Dependent variable:	Share of preference votes for female candidates			
	(1)	(2)	(3)	
Treatment	0.104***	0.141***	0.138***	
	(0.039)	(0.019)	(0.020)	
Treatment (bias-corrected)	0.089**	0.134***	0.133***	
	(0.039)	(0.019)	(0.020)	
Treatment (bias-corrected, robust SE)	0.089*	0.134***	0.133***	
	(0.052)	(0.035)	(0.032)	
Bandwidth selector	CCT	IK	CV	
Bandwidth	1,655	5,877	4,742	
Observations on the left	99	546	529	
Observations on the right	123	317	291	

Notes. The table shows the results of parametric and non-parametric estimation. The dependent variable is the share of preference votes cast for female candidates over the number of preference votes cast for all candidates on list s in municipality i. In Panel A, the sample includes all lists presented in municipalities with less than 15,000 residents and that held elections in 2013. Standard errors are clustered at the municipal level. Columns 1-4 include polynomials of orders 1-4, respectively, in the resident population, centered on the 5,000 resident threshold. Polynomials are allowed to differ on the two sides of the cut-off. Only the coefficient of interest *Treatment* is reported. In Panel B, conventional RD estimates with a conventional variance estimator, bias-corrected RD estimates with a conventional variance estimator, and bias-corrected RD estimates with a robust variance estimator are reported. The sample includes municipalities voting in 2013 within the indicated bandwidth around the cut-off of 5,000 residents. Different bandwidth selectors are used in columns 1-3: the bandwidth selector proposed by Calonico, Cattaneo, and Titiunik (CCT) (2014); the bandwidth selector by Imbens and Kalyanaraman (IK) (2012); and the cross-validation method proposed by Ludwig and Miller (CV) (2007), respectively. * p<0.1, ** p<0.05, *** p<0.01.

Table 6: Post-election placement of female candidates

	Panel A: Parametric Approach			
Dependent variable:	Post-election Borda score of female candidates			
	(1)	(2)	(3)	(4)
Treatment	0.132***	0.096***	0.106*	0.045
	(0.022)	(0.036)	(0.056)	(0.092)
Polynomial order	1	2	3	4
Observations	897	897	897	897
R-Squared	0.188	0.190	0.190	0.191
	Panel B: Non-parametric Approach			
Dependent variable:	Post-election Borda score of female candidates			
	(1)	(2)	(3)	
Treatment	0.102**	0.115***	0.116***	
	(0.046)	(0.024)	(0.023)	
Treatment (bias-corrected)	0.113**	0.101***	0.101***	
	(0.046)	(0.024)	(0.023)	
Treatment (bias-corrected, robust SE)	0.113*	0.101***	0.101***	
	(0.063)	(0.034)	(0.037)	
Bandwidth selector	CCT	IK	CV	
Bandwidth	1,624	4,451	4,668	
Observations on the left	70	417	456	
Observations on the right	108	251	259	

Notes. The table shows the results of parametric and non-parametric estimation. The dependent variable is Borda score according to the post-election ranking based on preference votes of female candidates on list s in municipality i. In Panel A, the sample includes all lists presented in municipalities with less than 15,000 residents and that held elections in 2013. Standard errors are clustered at the municipal level. Columns 1-4 include polynomials of orders 1-4, respectively, in the resident population, centered on the 5,000 resident threshold. Polynomials are allowed to differ on the two sides of the cut-off. Only the coefficient of interest *Treatment* is reported. In Panel B, conventional RD estimates with a conventional variance estimator, bias-corrected RD estimates with a conventional variance estimator, and bias-corrected RD estimates with a robust variance estimator are reported. The sample includes municipalities voting in 2013 within the indicated bandwidth around the cut-off of 5,000 residents. Different bandwidth selectors are used in columns 1-3: the bandwidth selector proposed by Calonico, Cattaneo, and Titiunik (CCT) (2014); the bandwidth selector by Imbens and Kalyanaraman (IK) (2012); and the cross-validation method proposed by Ludwig and Miller (CV) (2007), respectively. * p<0.1, ** p<0.05, *** p<0.01.

Table 7: Socio-demographic characteristics

Panel A: Demographic characteristics			
female population	0.001	0.002	0.002
	(0.004)	(0.003)	(0.003)
male population	-0.001	-0.002	-0.002
	(0.004)	(0.003)	(0.003)
children	0.001	0.002	0.002
	(0.008)	(0.005)	(0.005)
elderly people	0.014	0.010	0.012
	(0.018)	(0.013)	(0.012)
Panel B: Occupational status			
female employed	0.006	0.003	0.004
	(0.016)	(0.008)	(0.009)
male employed	0.008	0.002	0.008
	(0.009)	(0.014)	(0.008)
female students	0.003	0.000	-0.001
	(0.004)	(0.003)	(0.002)
male students	0.003	0.001	-0.000
	(0.003)	(0.002)	(0.002)
Panel C: Educational status			
high school female	0.005	0.004	0.004
	(0.009)	(0.005)	(0.005)
high school male	0.020**	0.007	0.005
	(0.006)	(0.005)	(0.005)
university female	0.006	0.002	-0.001
	(0.005)	(0.004)	(0.003)
university male	0.007	0.002	0.000
	(0.004)	(0.004)	(0.003)
Bandwidth-Selector	CCT	IK	CV

Notes. The table shows the results of a non-parametric RDD estimation for socio-demographic characteristics. In Panel A, we focus on demographic characteristics of the Italian resident population; the table reports female and male population in rows 1 and 2, and the number of children and elderly people in rows 3 and 4. In Panel B, we refer to the occupational status of the Italian resident population. In Panel C, we refer to the educational status of the Italian resident population. In particular, the table reports female and male population with elementary school diploma in rows 1 and 2, and female and male population with a middle school diploma in rows 3 and 4. The sample includes municipalities that are in a small bandwidth around the cut-off of 5,000 residents. Different bandwidth selectors are used in columns 1-3: the bandwidth selector proposed by Calonico, Cattaneo, and Titiunik (CCT) (2014); the bandwidth selector by Imbens and Kalyanaraman (IK) (2012); and the cross-validation method proposed by Ludwig and Miller (CV) (2007), respectively. * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

Table 8: Female presence on municipal councils before the reform

	Panel A: Parametric Approach			
Dependent variable:	Share of female councilors			
	(1)	(2)	(3)	(4)
Treatment	0.038	0.036	−0.004	−0.050
	(0.025)	(0.040)	(0.056)	(0.076)
Polynomial order	1	2	3	4
Observations	468	468	468	468
R-Squared	0.037	0.038	0.043	0.051
	Panel B: Non-parametric Approach			
Dependent variable:	Share of female councilors			
	(1)	(2)	(3)	
Treatment	−0.029	0.011	0.022	
	(0.055)	(0.032)	(0.029)	
Treatment (bias-corrected)	−0.049	−0.050	−0.030	
	(0.055)	(0.032)	(0.029)	
Treatment (bias-corrected, robust SE)	−0.049	−0.050	−0.030	
	(0.069)	(0.068)	(0.050)	
Bandwidth selector	CCT	IK	CV	
Bandwidth	2,024	4,137	4,779	
Observations on the left	66	243	304	
Observations on the right	63	97	101	

Notes. The table shows the results of parametric and non-parametric estimation. The dependent variable is the share of female councilors over the total number of councilors in the election prior to 2013. In Panel A, the sample includes all lists presented in municipalities with less than 15,000 residents and that held elections in 2013. Columns 1-4 include polynomials of orders 1-4, respectively, in the resident population, centered on the 5,000 resident threshold. Polynomials are allowed to differ on the two sides of the cut-off. Only the coefficient of interest *Treatment* is reported. In Panel B, conventional RD estimates with a conventional variance estimator, bias-corrected RD estimates with a conventional variance estimator, and bias-corrected RD estimates with a robust variance estimator are reported. The sample includes municipalities voting in 2013 within the indicated bandwidth around the cut-off of 5,000 residents. Different bandwidth selectors are used in columns 1-3: the bandwidth selector proposed by Calonico, Cattaneo, and Titiunik (CCT) (2014); the bandwidth selector by Imbens and Kalyanaraman (IK) (2012); and the cross-validation method proposed by Ludwig and Miller (CV) (2007), respectively. * $p<0.1$, ** $p<0.05$, *** $p<0.01$.

Table 9: Female presence on candidate lists before the reform

	Panel A: Parametric Approach			
Dependent variable:	Share of female candidates			
	(1)	(2)	(3)	(4)
Treatment	0.048*	0.071	−0.008	−0.117*
	(0.028)	(0.046)	(0.055)	(0.069)
Polynomial order	1	2	3	4
Observations	531	531	531	531
R-Squared	0.011	0.015	0.026	0.037
	Panel B: Non-parametric Approach			
Dependent variable:	Share of female candidates			
	(1)	(2)	(3)	
Treatment	−0.042	0.003	0.042	
	(0.054)	(0.037)	(0.028)	
Bias-corrected	−0.040	−0.052	−0.006	
	(0.054)	(0.037)	(0.028)	
Treatment (bias-corrected, robust SE)	−0.040	−0.052	−0.006	
	(0.066)	(0.049)	(0.042)	
Bandwidth selector	CCT	IK	CV	
Bandwidth	1,328	2,694	4,779	
Observations on the left	43	128	269	
Observations on the right	54	100	149	

Notes. The table shows the results of parametric and non-parametric estimation. The dependent variable is the share of female candidates over the total number of candidates on party lists presented in the election prior to 2013. In Panel A, the sample includes all lists presented in municipalities with less than 15,000 residents and that held elections in 2013. Standard errors are clustered at the municipal level. Columns 1-4 include polynomials of orders 1-4, respectively, in the resident population, centered on the 5,000 resident threshold. Polynomials are allowed to differ on the two sides of the cut-off. Only the coefficient of interest *Treatment* is reported. In Panel B, conventional RD estimates with a conventional variance estimator, bias-corrected RD estimates with a conventional variance estimator, and bias-corrected RD estimates with a robust variance estimator are reported. The sample includes municipalities voting in 2013 within the indicated bandwidth around the cut-off of 5,000 residents. Different bandwidth selectors are used in columns 1-3: the bandwidth selector proposed by Calonico, Cattaneo, and Titiunik (CCT) (2014); the bandwidth selector by Imbens and Kalyanaraman (IK) (2012); and the cross-validation method proposed by Ludwig and Miller (CV) (2007), respectively. * p<0.1, ** p<0.05, *** p<0.01.

Table 10: Difference in discontinuities

Dependent variable:	Share of female councilors			
	(1)	(2)	(3)	(4)
Treatment × After	0.152***	0.301***	0.205***	0.174***
	(0.038)	(0.083)	(0.054)	(0.046)
Observations	936	146	360	812
R-Squared	0.35	0.60	0.45	0.27
Bandwidth-Selector	None	CCT	IK	CV

Notes. The table shows the results of non-parametric difference-in-discontinuities estimation with municipal fixed effects. The dependent variable is the share of female councilors over the total number of councilors. The sample includes a subsample of parties that competed in 2013 election in municipalities that are in a small bandwidth around the cut-off of 5,000 residents. In column 1, results are computed for the entire sample. Different bandwidth selectors are used in columns 2-4: the bandwidth selector proposed by Calonico, Cattaneo, and Titiunik (CCT) (2014); the bandwidth selector by Imbens and Kalyanaraman (IK) (2012); and the cross-validation method proposed by Ludwig and Miller (CV) (2007), respectively. * p<0.1, ** p<0.05, *** p<0.01.

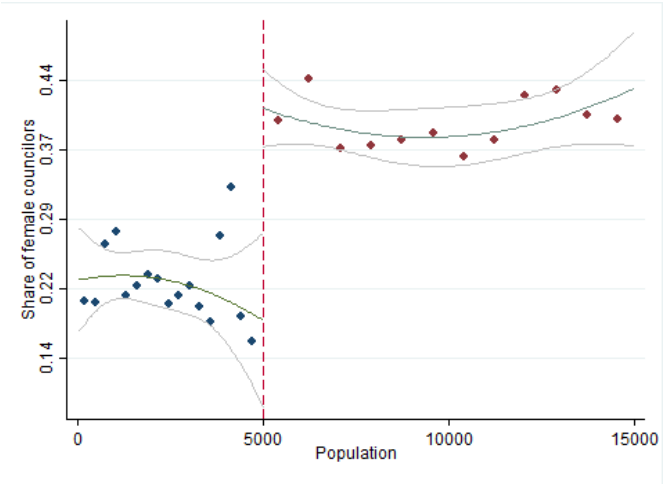


Figure 1: Female councilors

Notes. The figure plots the binned averages of the share of female councilors against the municipal population, together with the quadratic polynomial fit on both sides of the 5,000 resident cut-off and the 95% confidence intervals.

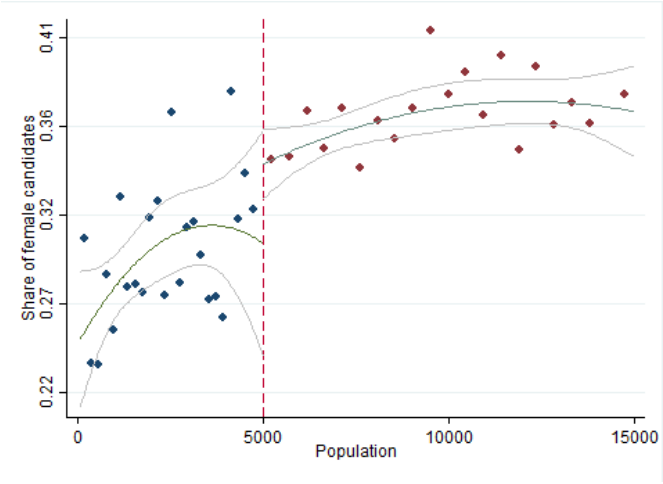


Figure 2: Female candidates

Notes. The figure plots the binned averages of the share of female candidates against the municipal population, together with the quadratic polynomial fit on both sides of the 5,000 resident cut-off and the 95% confidence intervals.

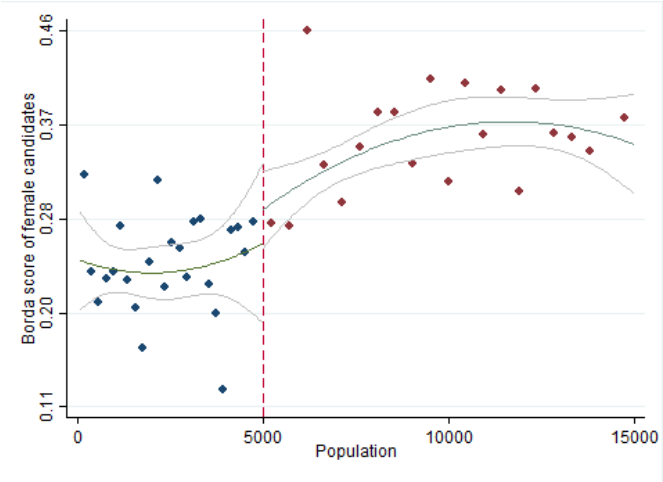


Figure 3: Placement of female candidates

Notes. The figure plots the binned averages of the Borda score of female candidates on party lists against the municipal population, together with the quadratic polynomial fit on both sides of the 5,000 resident cut-off and the 95% confidence intervals.

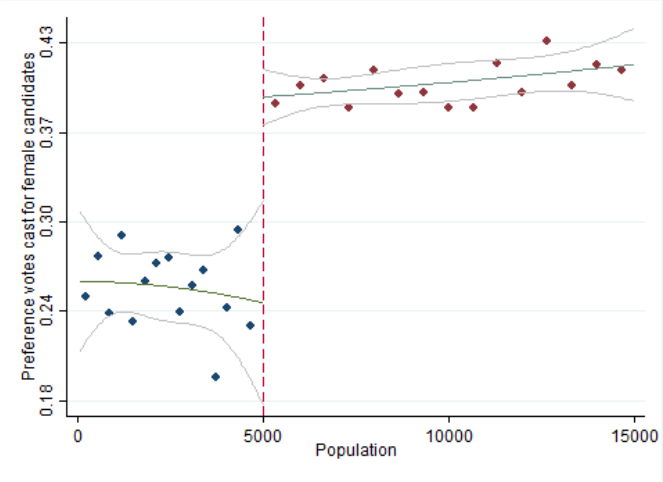


Figure 4: Preference votes cast for female candidates

Notes. The figure plots the binned averages of the share of preference votes cast for female candidates over the number of preference votes for all candidates on a given list against the municipal population, together with the quadratic polynomial fit on both sides of the 5,000 resident cut-off and the 95% confidence intervals.

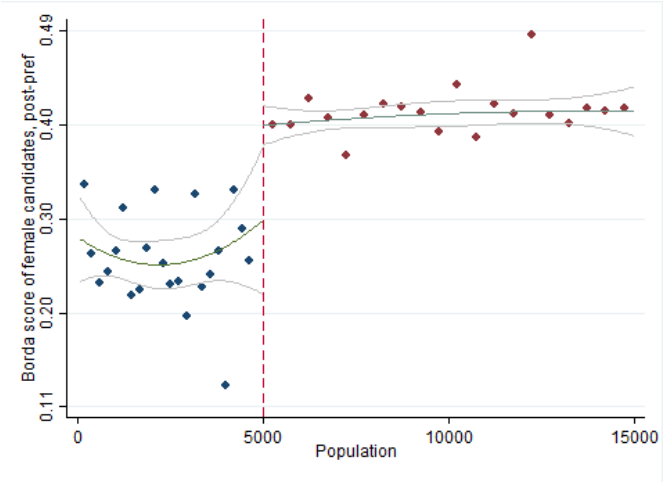


Figure 5: Post-election placement of female candidates

Notes. The figure plots the binned averages of the Borda score according to the post-election ranking, based on preference votes, of female candidates against the municipal population, together with the quadratic polynomial fit on both sides of the 5,000 resident cut-off and the 95% confidence intervals.

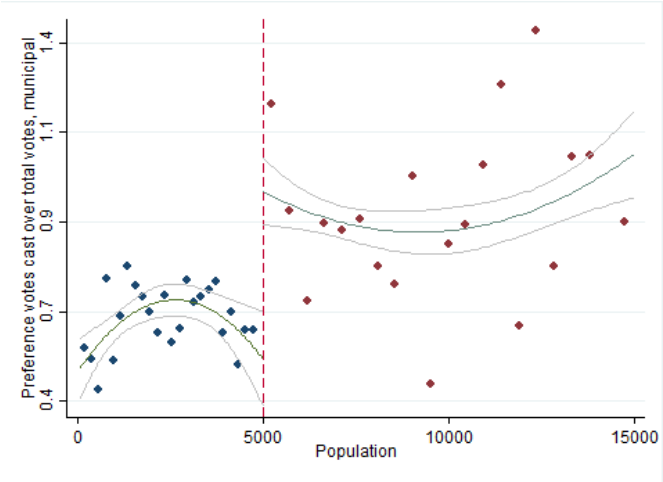


Figure 6: Use of preference votes

Notes. The figure plots the binned averages of the share of preference votes over the total votes cast in a given municipality against the municipal population, together with the quadratic polynomial fit on both sides of the 5,000 resident cut-off and the 95% confidence intervals.

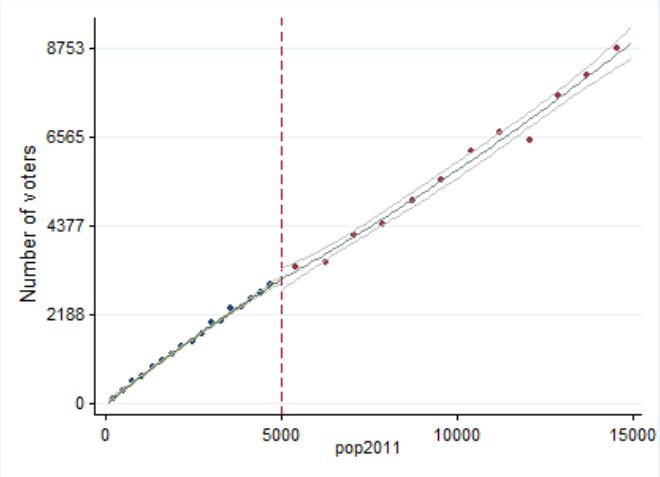


Figure 7: Voters

Notes. The figure plots the binned averages of the number of voters (who turn out) against the municipal population, together with the quadratic polynomial fit on both sides of the 5,000 resident cut-off and the 95% confidence intervals.

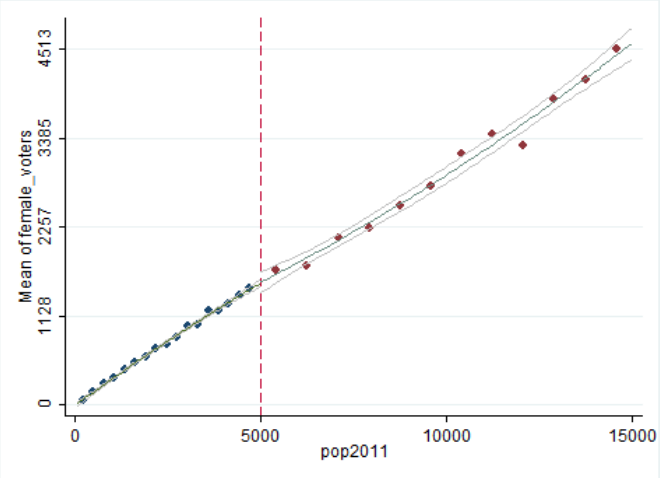


Figure 8: Female voters

Notes. The figure plots the binned averages of the number of female voters (who turn out) against the municipal population, together with the quadratic polynomial fit on both sides of the 5,000 resident cut-off and the 95% confidence intervals.

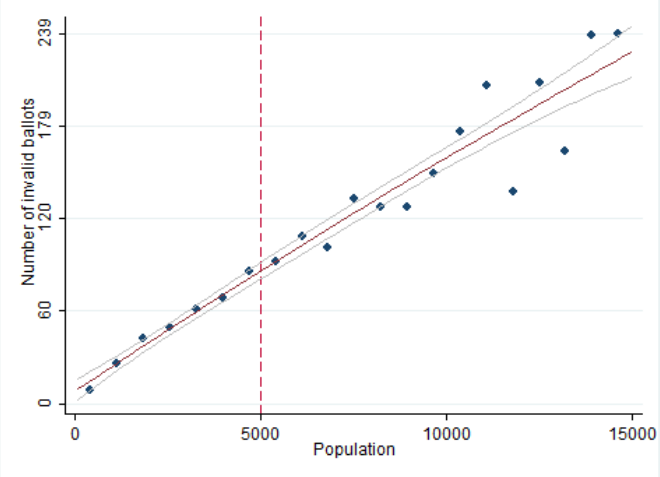


Figure 9: Invalid ballots

Notes. The figure plots the binned averages of the number of invalid ballots against the municipal population, together with the quadratic polynomial fit on both sides of the 5,000 resident cut-off and the 95% confidence intervals.

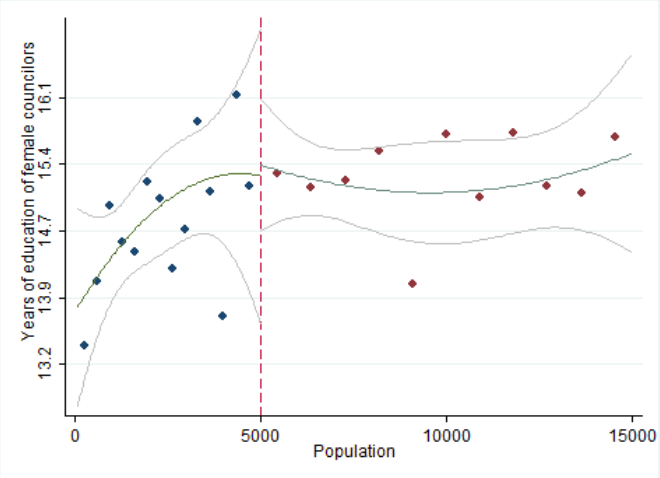
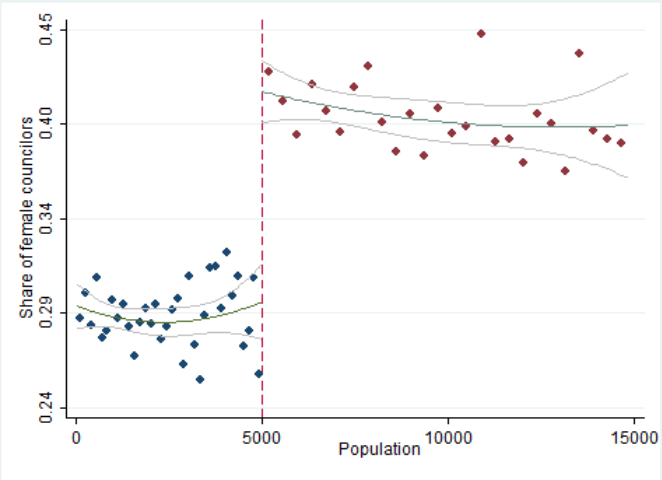
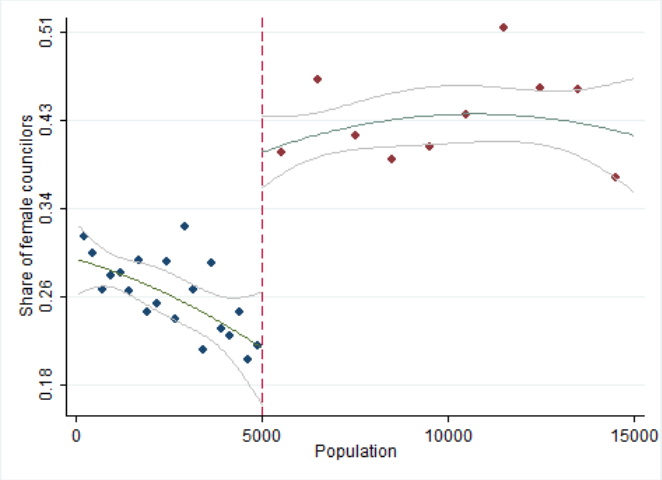


Figure 10: Education of female councilors

Notes. The figure plots the binned averages of the years of education of elected female councilors against the municipal population, together with the quadratic polynomial fit on both sides of the 5,000 resident cut-off and the 95% confidence intervals.



(a) Elections in 2014



(b) Elections in 2015

Figure 11: Female councilors in more recent elections

Notes. The figure plots the binned averages of the share of female councilors against the municipal population, together with the quadratic polynomial fit on both sides of the 5,000 resident cut-off and the 95% confidence intervals.

Figure 12: Demographic characteristics

Notes. The figure plots the binned averages of demographic municipal characteristics (share of women, men, children and elderly over the municipal population) against the municipal population, together with the quadratic polynomial fit on both sides of the 5,000 resident cut-off and the 95% confidence intervals.

Figure 13: Occupational characteristics

Notes. The figure plots the binned averages of occupation municipal characteristics (share of female and male students, female and male employment rate) against the municipal population, together with the quadratic polynomial fit on both sides of the 5,000 resident cut-off and the 95% confidence intervals.

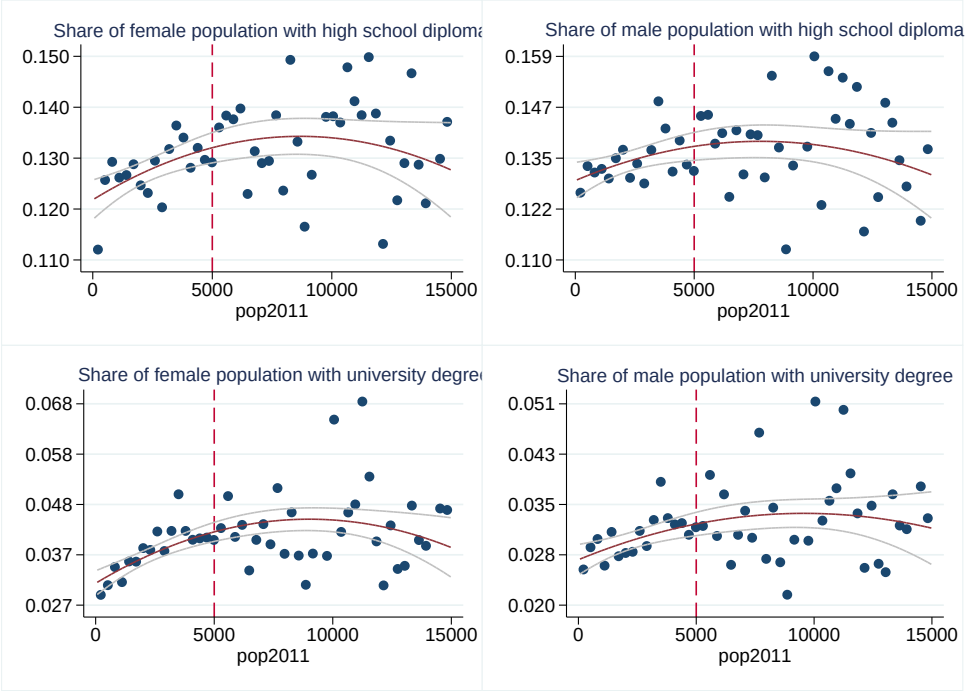


Figure 14: Educational characteristics

Notes. The figure plots the binned averages of educational municipal characteristics (share of females and males with high school diploma and with university degree over the municipal population) against the municipal population, together with the quadratic polynomial fit on both sides of the 5,000 resident cut-off and the 95% confidence intervals.

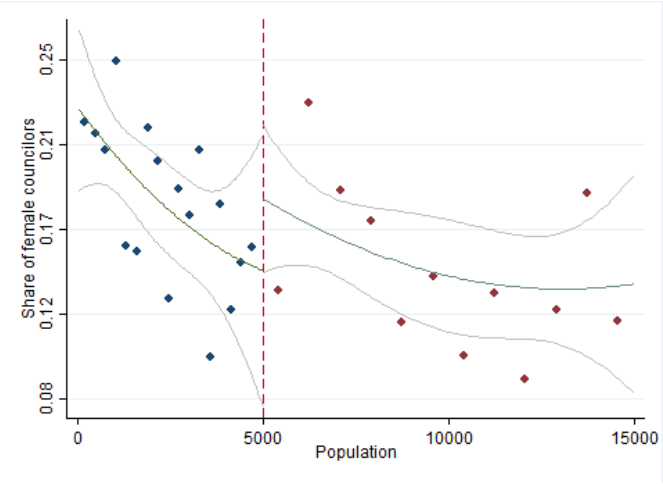


Figure 15: Female councilors before the reform

Notes. The figure plots the binned averages of the share of female councilors in the previous mandate against the municipal population, together with the quadratic polynomial fit on both sides of the 5,000 resident cut-off and the 95% confidence intervals.

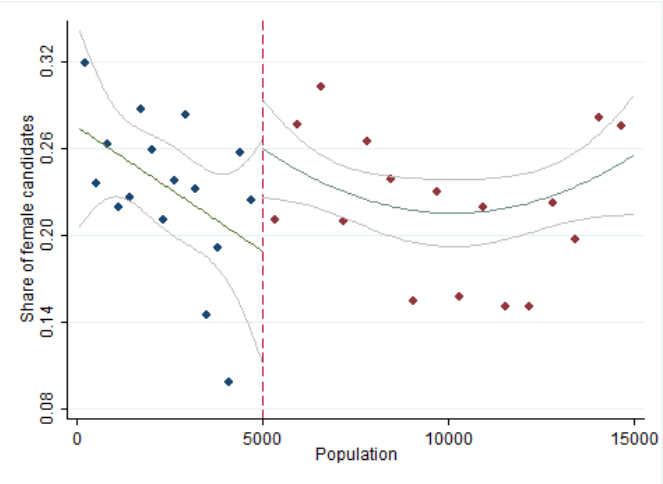


Figure 16: Female candidates before the reform

Notes. The figure plots the binned averages of the share of female candidates in the previous election against the municipal population, together with the quadratic polynomial fit on both sides of the 5,000 resident cut-off and the 95% confidence intervals.

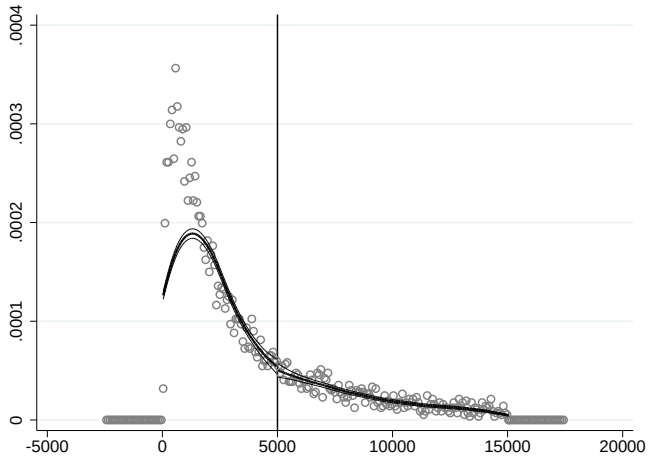


Figure 17: McCrary test

Notes. The figure plots the density of the municipal population. The sample includes Italian municipalities with population below 15,000 residents.