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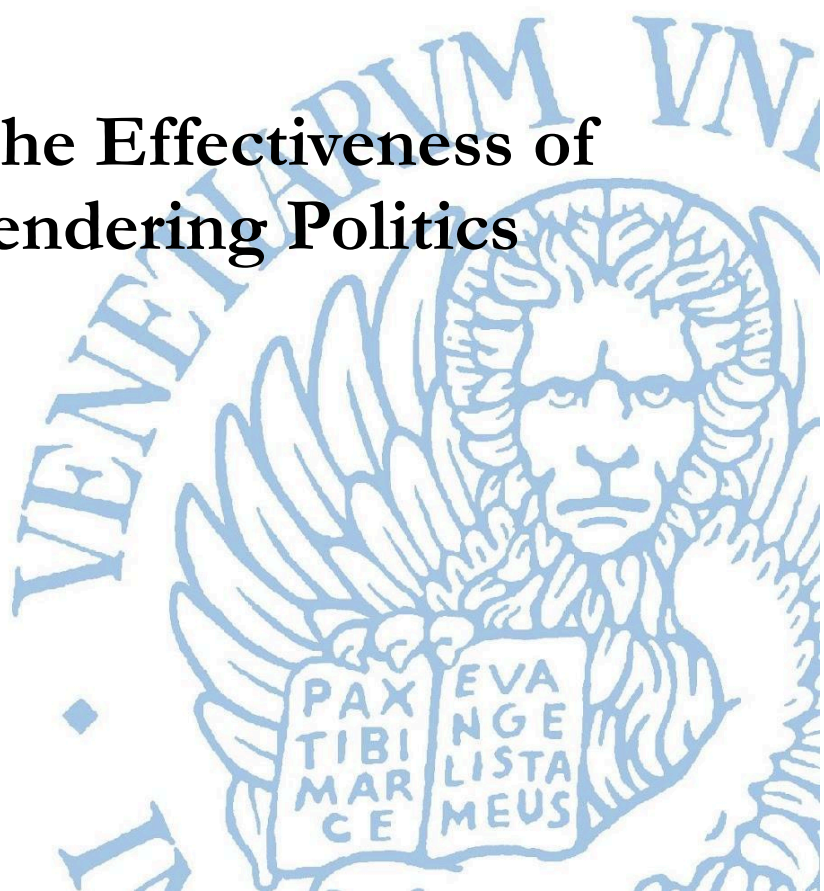
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On the Effectiveness of
Gendering Politics

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We examine the effectiveness of gender reforms in increasing women's representation in selected offices. We generate exogenous variations in representation at the Italian regional and municipal elections using the passage of two gender reforms: i) party-list gender quotas, a supply-side reform intended to influence party decisions regarding candidacy, and ii) double-gender preference systems, a demand-side reform intended to influence voting decisions on candidates. We show that party-list gender quotas have no effect on the likelihood of women winning a seat, whereas double-gender preference systems are effective in increasing women's representation. Furthermore, we provide evidence that supply-side reforms are susceptible to party-list manipulations, which undermine their effectiveness. In constituencies with a stronger voter gender bias, supply-side reforms may also unintentionally have a negative impact on women's representation in leadership positions.

Keywords

Gender Reforms, Italian Local Elections, Political Representation

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Abstract

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Introduction

The representation of women in political offices has been a subject of extensive study and policy-making across the globe. Affirmative action programs, such as gender quotas, have been widely implemented with the aim of increasing the representation of minorities in political institutions. This phenomenon, often referred to as “quota fever,” reflects a global commitment to enhancing gender equality in politics. However, these policies are among the most controversial, facing significant opposition and sparking debates over their effectiveness and potential alternatives that might prevent discrimination without the perceived drawbacks of quotas.

Despite their widespread adoption, affirmative action programs do not always achieve their intended outcomes. Minorities targeted by these programs, particularly women, may still find themselves under-represented in leadership positions, a phenomenon known as spillover effects. This raises critical questions: Do affirmative actions directly change representation, and if so, which forms—strict or soft—are more effective? Additionally, do these actions generate indirect effects on leadership representation, and through which channels—supply or demand?

This paper examines the impact of two distinct gender reforms on women’s representation in Italian regional and municipal elections. The study focuses on the effectiveness of party-list gender quotas (a strict form of affirmative action) and double-gender preference systems (a soft form). The former aims to influence party decisions regarding candidate selection (supply-side), while the latter seeks to affect voter behavior (demand-side).

The empirical analysis employs two strategies based on the staggered introduction of gender-based affirmative actions in regional elections starting from 2004 and the implementation of such policies in municipal elections for municipalities with populations over 5,000 inhabitants following the enactment of Law 215/2012. The findings reveal that soft forms of affirmative action, such as double-gender preferences, are more effective in increasing women’s political representativeness. Conversely, strict forms, such as party-list quotas, may have unintended negative consequences on women’s political leadership, potentially due to party-list manipulations and voter biases.¹

Literature Review This research makes several significant contributions to the literature on gender reforms in politics. First, it is the first to analyze the impact of electoral reforms aimed at increasing women’s participation in politics, examining their effects on both the supply side (political parties) and the demand side (voters). Previous studies

¹For example, in Campania, the number of women elected increased from 6 in 2005 to 14 in 2010 out of 60 councilors, confirming the validity of the double-gender preference mechanism, especially where political parties invested in male-female tickets.

have predominantly focused on the impact of gender quotas (a supply-side reform) on the electoral participation of women, candidate quality, or electoral turnout (See, for example, Beaman et al., 2009; De Paola, Scoppa and Lombardo, 2010; Bagues and Campa, 2021).

A closely related study by Baltrunaite et al. (2019) employed a regression discontinuity design to estimate the effect of double-gender preference voting in conjunction with gender quotas. However, their study could not disentangle the effects of the double-gender preference system and quotas, as both changes occurred simultaneously and at the same population threshold. In contrast, our study examines a regional institutional setting that allows us to isolate the effects of these two types of gender reforms, as they occur in different places and at different times.

Another significant contribution of this paper is its analysis at multiple institutional levels, encompassing both regional and municipal levels. This choice is driven by the fact that the two electoral systems we investigate are comparable, particularly because both permit the direct election of leaders alongside the election of council candidates, employing proportional rules. The comparability of these institutional settings enables us to present complementary results using distinct identification strategies. Much of the previous literature has concentrated on a single electoral system and institutional level.

Furthermore, this paper contributes to the literature on women in leadership positions by exploring the unintended effects of gender reforms designed to increase participation in a specific electoral body. Existing literature has primarily focused on the direct intended effects of policies on leadership (see, for example, Folke, Persson and Rickne, 2016; O'Brien and Rickne, 2016). By distinguishing the effects of supply-side and demand-side reforms, this study underscores the complex interplay between voter behavior, party strategies, and institutional regulations in shaping gender representation in politics.

II. Institutional Background

Italy is a republic constituted by 7,914 municipalities distributed across 107 provinces or metropolitan cities within 20 regions, of which 5 has a special autonomous status. According to the Constitution, the Italian republic is unitary, while recognizing the principles of local autonomy and decentralization. Elections take place at any constituent entity level of the republic. The Constitution establishes rules for state and municipal elections, and regional statutes regulate regional elections while complying with the fundamental principles of the state.

A. Regional Legislation

The regions are the first-level constituent entities of the Italian republic. Every region has a statute that serves as a regional constitution, determining the form of government, the fundamental principles of the organization and the functioning of the region, as prescribed by the Constitution (Art. 123). The regional government is made up of a legislative body, the regional council (*Consiglio regionale*), and an executive body, the regional committee (*Giunta regionale*). The president of the regional council (*Presidente della regione*) chairs the regional committee and nominates or dismisses its members (*Assessori*).

Regional elections take place every five years, in different years for different regions.² The number of representatives to be elected varies with the population size. The basic mechanism for regional elections is regulated by the state law 43/1995. According to this law, the regional council is elected in a single-round system through a mixed rule: 80 percent of the seats are allocated with votes cast at a province level on the basis of a proportional rule, and the remaining 20 percent is allocated with votes cast at the regional level on the basis of a majority rule. Province lists are open with the possibility for voters to indicate a preferred candidate, while regional lists are blocked without preferences. Split voting is allowed. The regional list that wins a plurality is awarded the presidency of the regional council. The constitutional law 1/1999 amended Articles 122 and 123 of the Constitution and introduced the direct election of the president of the regional council and the statutory autonomy of the regions, opening the window to a broad regional autonomy in electoral matters. Starting from 2003, all regions with the exception of Molise subscribed their own statutes at various points in time. Among those, Piedmont did not change the electoral procedure, while the remaining regions put aside minor details of the voting process. Detailed information on statutory and electoral legislations are provided in online Appendix B.³ It is worth noting that all ordinary regions have opted for proportional representative systems with open lists and preference voting, with the initial exception of Lombardy, Tuscany and Veneto, which opted for a system of closed lists. Furthermore, no region has introduced a different form of government

²Regional elections as well as municipal elections can take place within less than five years in the concurrence of episodes of premature dissolution of the regional council due to irregularities or the simultaneous resignation of the majority of the council members, or the removal, permanent inability, death or voluntary resignation of the president of the executive.

³Starting with Calabria in 2005, several regions have amended the law 43/1995: 4 regions have increased the exclusion thresholds to keep province lists with relatively small support out of the regional council; 11 have replaced the blocked regional list with a generous majority prize; 6 have abolished split voting; and 1 has introduced the possibility of run-off election. A novel issue in almost all regional laws is the introduction of electoral gender reforms as described in the next section.

other than the one provided by the constitutional amendment 1999, and elections are still carried out according to the procedure ruled by state law 43/1995.

B. Municipal Legislation

Municipalities (*Comune*) are the last-level constituent entities of the Italian republic and provide essential public services: the registry of births and deaths, the registry of deeds, and the maintenance of local roads and public works. Similarly to regions, each municipality is headed by a mayor (*Sindaco*) assisted by a legislative body, the city council (*Consiglio comunale*), and an executive body, the city committee (*Giunta comunale*). The mayor and the members of the city council are elected together by resident citizens, while the members of the city committee (*Assessori*) are appointed by the mayor. The number of members in the city council and committee varies with the population size.

Municipal elections are usually held every five years, unless the city council dissolves early. Then, the timing of elections varies between municipalities. Since the enactment of the state law 81/1993, mayors of municipalities with less than 15,000 residents are directly elected according to a single-round system, while mayors of municipalities with more than 15,000 residents are directly elected according to a run-off system. In municipalities with fewer than 15,000 residents, the mayor candidates are backed by a single list. Voters can also express a preference for councilor candidates belonging to the list supporting the preferred candidate for mayor. The mayoral candidate who gets the relative majority wins the election, while the supporting list obtains two thirds of the seats in the council. The remaining third is distributed proportionally among the other lists using the d'Hondt method. After the election, councilor candidates are ranked according to the number of preference votes received, which can therefore modify the initial rank of the list.

C. Gender Representation and Historical Background

Representation in deliberative bodies of government is the most effective way to influence policy decision making. When universal suffrage was granted in Italy for the first time in the 1948 general election, on 982 elected members in the Parliament, 49 were women: around 5 percent. Since then, the low participation of Italian women in elected assemblies has characterized the history of the Republic. By the 2018 general election, the corresponding rate was 35.7 percent. The current rate of female members at national level is similar to the percentage recorded at the European Union level as well as at the municipal level but very far from the percentage recorded at the regional level, equal to on average 22.3 percent. The highest number of women elected in the regional councils

is found in the central Italy regions (32.9 percent), followed by the regions of the North (23.2) and those of the South (15.8).⁴

The low level of participation by female Italians in elected offices has gained increasing attention because of the societal benefits associated with a higher women’s involvement in politics. Indeed, recent studies suggest that a stronger female political representation may foster more gender-balanced policies promoting women’s opportunities (Lott and Kenny, 1999; Chattopadhyay and Duflo, 2004; Miller, 2008), as well as it may positively impact the quality of governance and the effectiveness of policies (Brollo and Troiano, 2016; Baskaran et al., 2023). The underrepresentation of women in political offices has been attributed to several factors hinging on both the supply and the demand side of the politics arena, such as, the lower inclination of women to run for office in competitive environments (Gneezy et al., 2003; Niederle and Vesterlund, 2007); the presence of voters’ bias against female candidates (Frechette et al., 2008; Le Barbanchon and Sauvagnat, 2022); or the presence of party leaders’ bias against women (Esteve-Volart and Bagues, 2012; Casas-Arce and Saiz, 2015).

Starting from 1993, several reforms have been introduced in the Italian legislation with largely bipartisan support at national and local level to balance gender composition in the elected assemblies. These reforms have attempted to tackle factors behind both the supply and demand sides of political representation. The state law 81/1993 introduced the gender quota system in electoral lists for city and province councils. The law established that neither gender could account for more than two-thirds of the total candidates. A similar rule was established for the 1994 election to the lower house of the Italian Parliament (*Camera dei Deputati*). The life of these promotional measures was short, since in September 1995 they were declared unconstitutional by judgment n. 422 of the Constitutional Court because in violation of the principle of equality between sexes in electoral matters.⁵

The constitutional law 1/2003 amended Article 51 of the Constitution and paved the way for legislative adoption of electoral provisions designed to promote gender-balanced representation in the elected bodies by stating that “*Any citizen of either sex is eligible for public offices and elected positions on equal terms, according to the conditions established by law. To this end, the Republic shall adopt specific measures to promote equal opportunities between women and men*”. Following the new constitutional framework, the mechanisms proposed by state legislation were basically the reintroduction of the electoral gender quotas and, relating to the open-list system, the adoption of the double-gender

⁴Female representation rates are taken from the 2022 report of the lower house of the Italian Parliament, which is available at documenti.camera.it/Leg18/Dossier/AC0340.

⁵The Court continued to state that such measures would not be deemed unconstitutional if adopted voluntarily by political parties, associations or groups taking part in the elections.

preference. According to the double-gender preference system, voters may cast one or two preferential votes, but, in this latter case, preferences must be related to one male candidate and one female candidate of the same list, under the penalty of canceling the second preference. This new mechanism does not reserve a share of seats to the under-represented sex, but re-addresses the under-representation of women in decision-making assemblies, through a second preference vote.⁶

D. Gender Reforms

The principle of promoting equal opportunities in the access to elective positions has been implemented by lawmakers through the state law 215/2012 for the municipal elections and the state law 20/2016 for the regional elections.⁷ The first law stipulates that either gender can be represented by at least one-thirds of the total candidates in electoral lists for city councils and introduces the double-gender preference system. It applies to all municipalities with more than 5,000 residents starting from the 2013 election year.⁸ The state law 20/2016 specifies those fundamental principles mentioned under Article 122 of the Constitution which states that “*The electoral system ... shall be established by a regional law in accordance with the fundamental principles established by a law of the Republic [...]*”. The law requires regions to adapt their regional laws to the following main principles: Overall no electoral list for regional councils shall be more than 60 per cent of the candidates of the same sex. Moreover, as to the various possible electoral systems: i) in the case of open lists, there must be two preferences reserved to candidates of different sex; ii) in the case of closed lists, the list must be set up according to a zipper system alternating candidates of different sexes; and iii) in the case of single candidate elections, the 60 per cent quota must be respected among the candidates running for the same party/list. Thus, technically since 2016, Italian regions are required to introduce gender reforms in their regional election rules. However, its implementation has been very heterogeneous.

⁶Since the 1991 referendum onward the Italian electoral scenario has been mainly characterized by single preference voting systems on open lists. Therefore, the chance of a second preference vote is not a constraint for voters, but an additional option, which the previous system did not provide.

⁷In between the two bills, the state law 65/2014 introduced affirmative actions for European Parliament elections, starting from the 2019 election year. Apart from the requirement that no more than half of the candidates can be of the same sex, the law introduced the triple-gender preferences system: voters can express two/three preferences for candidates as long as they are of different sexes and if the law is not respected, then the second/third preference is cancelled. Worth nothing is that to date there is no party-list gender quota for the upper and lower house of the Italian Parliament’s elections.

⁸With the purpose of advancing the promotion of gender equality, the state law 56/2014 introduced a minimum gender balance within the city committee for all municipalities with more than 3,000 residents. The law established that either gender can be represented by at least 40 per cent of the total members in the city committee, including the mayor.

At regional level, recent years have seen the haphazard adoption of a variety of laws with the aim to introduce the principle of promoting equal opportunities in the access to elected office in many regional statutes and in several regional electoral laws. Some regions anticipated the 2016 state regulations by implementing a party-list gender quota system (Marches and Tuscany in 2004; Apulia and Latium in 2005; Campania in 2009; Umbria in 2010; Lombardy and Veneto in 2012; Abruzzo in 2013; and Emilia-Romagna in 2014) and a double-gender preference system (Campania in 2009; Emilia-Romagna and Tuscany in 2014; and Umbria in 2015); others gradually adapted their own electoral discipline to the new principles starting from 2016.⁹ Piedmont is so far the only region that has not yet adjusted its electoral law to the promotion of gender equality rules. The timeline of the gender legislations across Italian regions is shown in Figure A1 in online Appendix A.

II. Data

Our goal is to ascertain how the enactment of gender reforms affects the female representation in elected office. To accomplish this goal, we require individual data on candidates and electoral outcomes from multi-round elections at both regional and municipal levels. We supplement these data with information on the timing of party-list gender quota reforms and double-gender preference systems across regions and municipalities and on relevant covariates collected from various sources. Detailed information on variable definitions, data sources, and summary statistics can be found in online Appendix C. In the following section, we summarize the main characteristics of the data.

Data on candidates and electoral outcomes for both the regional council and its presidency are obtained from the Ministry of the Interior (*Ministero dell'Interno*). For each election year, the database includes information on candidates' full name, gender, date and place of birth, party affiliation, electoral districts (provinces), and the number of valid votes received at the province level. We confine the sample to candidates from all 15 regions with ordinary statute who run for election in a given district during the period 1995–2020.¹⁰ This delivers a stacked cross-section of 53,040 candidates for the regional council and 462 candidates for its presidency spanning 89 regional elections.

⁹Party-list gender quotas have been enacted in Molise in 2017, Basilicata in 2018, Liguria in 2020, and Calabria in 2021. Double-gender preference systems have been enacted in Latium, Lombardy and Molise in 2017, Abruzzo, Basilicata and Veneto in 2018, Marches in 2019, Apulia and Liguria in 2020, and Calabria in 2021.

¹⁰We focus on 1995 onward since, as previously discussed, the voting mechanism for the regional election drastically changed after the state law 43/1995. Data on council candidates for Apulia in 2005 election year, Calabria and Marches in 2010, Molise in 2018, and Apulia, Liguria, Marches and Tuscany in 2020 are missing. For those regional election years, we retrieve information on candidates and the number of valid votes from each regional website.

Since a plurality of electoral lists can support the same presidential candidate, we match each councilor candidate to the associated candidate for the presidency of the region by his/her party affiliation. The Ministry of Interior also provides information on elected presidents and councillors. For those individuals, the database also includes information on educational attainment and labor force status. Candidate and voting records are complemented with information on local gender earnings gap from the Italian provinces, which is residualized and used as a proxy for voters’ gender attitudes at the province level.

IV. Regional-Election Level Analysis

We begin the analysis by empirically investigating the effect of gender reforms on female candidacy and winning probability as councilor and president at the regional level. To this end, we take advantage of the variations generated by the staggered timing of party-list gender quota ($R = Q$) and double-gender preference system ($R = D$) across Italian regions over time. Our goal is to assess whether boosting the political involvement of female citizens leads to a greater female representation in elected offices. Moreover, the asynchronous timing of the two gender reforms allows us to disentangle the relative effectiveness in achieving their intended goals.

A. Empirical Strategy

Since the time and space are two dimensions along which the treatment varies, we first use a difference-in-differences (hereafter, DD) regression design to compare electoral outcomes for candidates and elected officials in regions that have implemented gender reform with regions that have not, before and after the introduction of the electoral reform. We operationalize the empirical strategy employing the following event study model based on a DD estimator:

$$Y_{i,r,t} = \delta_t + \delta_r + \sum_{\tau=-m}^n \beta_\tau \cdot P_r^R \cdot \mathbb{1}(t - T_r^R = \tau) + \gamma \cdot P_{r,t}^{R^-} + \varepsilon_{i,r,t} \quad (1)$$

where $Y_{i,r,t}$ is an indicator variable set to 1 if candidate i in region r in period t is female; δ_t denote year fixed effects and are meant to control for time shocks, while region fixed effects, denoted by δ_r , are meant to account for time invariant and unobserved region characteristics; and $\varepsilon_{i,r,t}$ is the error term which we cluster by provinces—although treatments vary at the region level—since treatments’ intensity may vary across electoral districts within the same region.

We define event time in terms of election years, which generally occur every five years. The treatment variable is constructed by interacting the indicator variable P_r^R , which is set to 1 if region r has ever implemented the gender reform R , that is, Q or D , with the event-time dummy $\mathbb{1}(t - T_r^R = \tau)$, which is set to 1 if the observation time is $\tau = -m, \dots, 0, \dots, n$ election years from T_r^R , the year of the first election after treatment initiation in region r . Observations of more than m elections before or more than n elections after T_r^R are captured by $\mathbb{1}(t - T_r^R = -m)$ and $\mathbb{1}(t - T_r^R = n)$, respectively. The year of the last election held before the initiation of treatment ($\tau = -1$) is the omitted election year.

In order to purge the treatment effect of the gender reform R from the potential confounding effect associated with the other gender reform R^- , we add the indicator variable $P_{r,t}^{R^-}$, which is set to 1 if in region r the gender reform R^- is in place at time t . Since the implementation of the two types of gender reforms, that is, party-list gender quota and double-gender preference, often occurs in different years within the same region, our empirical strategy enables us to estimate the effects of each treatment individually.

Using regression (1), fixed differences across regions, common shocks among regions that vary over time, and the influence of the gender reform R^- are all removed from the estimated effect of the gender reform R . Consequently, the β_τ s should capture specific trend breaks in the outcomes of interest that coincide precisely with the timing of the treatment initiation.

In addition to assessing whether more women run for regional councils following the implementation of a gender reform, regression (1) also determines if a greater number of seats in regional councils are filled by female candidates. This can be achieved by restricting the sample to elected candidates. In this case, a potential shortcoming of regression (1) is that it does not allow for the inclusion of a full set of region-year interactions as controls. These interactions would account for factors like, for example, temporary changes in region wide electoral mobilization that could influence both male and female candidacies. To overcome this issue, we employ an event study model utilizing a triple-difference (DDD) estimator with the following specification:

$$Z_{i,r,t} = \delta_{r,t} + \delta_{g,t} + \delta_{g,r} + \mathbb{1}(g = f) \left(\sum_{\tau=-m}^n \beta_\tau \cdot P_r^R \cdot \mathbb{1}(t - T_r = \tau) + \gamma \cdot P_{r,t}^{R^-} \right) + \varepsilon_{i,r,t} \quad (2)$$

In the model, the outcome variable $Z_{i,r,t}$ can take the form of an indicator variable, set to 1 if the candidate i in region r during period t is elected and 0 otherwise, or a variable measuring the candidate's percentage of received preferences out of the total preference votes casted in their electoral district. The fixed effects $\delta_{r,t}$ capture region-

by-year shocks, $\delta_{g,t}$ and $\delta_{g,r}$ include interactions between gender-group fixed effects and time, as well as region fixed effects, capturing changes over time among male and female candidates at the regional level and time-invariant gender-specific characteristics within regions, respectively. The error term $\varepsilon_{i,r,t}$ is clustered by province. The treatment variable is constructed by interacting the terms $P_r^R \cdot \mathbb{1}(t - T_r = \tau)$ and $\gamma \cdot P_{r,t}^{R-}$ with the gender-group dummy $\mathbb{1}(g = f)$, which equals 1 for female candidates. The consistency of the estimates relies on the identification assumption that no shocks occurred during the sample period that selectively affected the political participation of female candidates solely in the regions implementing the reforms.

Threats to Identification The fundamental assumption guiding this approach is that unobservable regional characteristics, which might have influenced electoral outcomes, are not linked to the timing of gender reform implementation. The substantial variation in the timing of reforms across treated regions supports this assumption. Furthermore, to ensure that the parallel trends assumption likely hold in this context, it will be reassuring if the coefficients β_τ are indistinguishable from zero for all $\tau < 0$.

Nevertheless, a valid concern remains that regional-level reforms could be influenced by region-specific dynamics. To address this concern, we present an analysis in Table A.1 that demonstrates how a wide range of time-varying characteristics at the regional level do not significantly predict the timing of reform enactment. The exceptions to this pattern are the age of the region’s president, the average age of assessors, and the average proportion of women in municipal councils within the region. These factors appear to predict the timing of gender quota reforms but do not explain the timing of double-gender preference reforms’ implementation. Interestingly, regions with a higher proportion of women in municipal councils decided to introduce gender quotas earlier compared to regions with fewer elected women at the municipal election level. We interpret this result as an indication that regions with less gender bias have been more receptive to women’s participation in politics at the regional election level. The potential threat to identification is weaker under the triple-difference specification, which allows us to purge the estimated coefficient from time-varying region-specific factors.

Notably, the absence of an explanatory connection between various time-varying regional factors and the timing of double-gender preference reforms lends more credibility to the assumption that the exposure timing of this type of reform is relatively exogenous. Supporting this assertion, a majority of regions implemented the double-gender preference electoral system prior to the first election following the enactment of state law 20/2016, which mandated gender law adoption for regions not autonomously adhering to non-discrimination principles. During this period, many regions were already in compliance with gender quotas but had not yet adopted double-gender preference sys-

tems. Evidence from Figure 1 indicates that the timing of the double-gender preference reform is mainly linked to the timing of the first election post-2016, suggesting exogenous variations in exposure timing across regions.

Recent advancements in the econometrics literature suggest that when different units are treated at different points in time, estimating DD and DDD models using the specifications described in the equations above may yield biased estimates of the average treatment effect on the treated (see, for example, Borusyak and Jaravel, 2017; de Chaisemartin and d’Haultfoeuille, 2020; Goodman-Bacon, 2021; Sun and Abraham, 2021; and Roth et al. (2023), for an overview of recent theoretic advancements). To ensure the robustness of the results presented in this paper, we then also employ alternative estimators proposed in the literature that help to recover the unbiased treatment effects.¹¹

B. Results

Figure 1 displays the estimation results for the β_τ 's, along with their corresponding 95 percent confidence intervals, using regression (1). Panel A represents the party-list gender quota treatment, while Panel B represents the double-gender preference treatment. The x -axis represents the election window around the treatment initiation, while the y -axis represents the estimated impact of the treatment on female participation as candidates for the regional council. Each dot represents the average share of female candidates in the treated and untreated regions relative to the same outcome in the election prior to treatment.

The pre-treatment dots demonstrate statistically similar trends in the outcome of interest leading up to the reform’s implementation. This result supports the model’s identifying assumption of parallel trends, which requires that the control and treated units must have been following similar trajectories in terms of female participation prior to the initiation of treatment. Following the implementation of party-list gender quotas, the share of female candidates naturally increases as quotas require parties to balance their electoral lists. Surprisingly, after accounting for the effect of gender quotas, the introduction of double-gender preferences also positively impacts women’s representation in party lists. This suggests that the introduction of double-gender preferences actively mobilizes

¹¹Proposed estimators counter bias in staggered event studies by adjusting comparison units. Goodman-Bacon et al. (2019) show that the β_τ 's estimate a weighted average of treatment effects which can be decomposed in three types of two-by-two comparisons. Using such a decomposition, we find that the largest variation (almost 40%) comes from the comparison of treated units with the never-treated regions, i.e., Calabria and Piedmont. This result emphasizes that estimates should not be highly vulnerable to biases arising from treatment effect heterogeneity, as a significant portion of variation originates from the comparison between eventually treated and never-treated units.

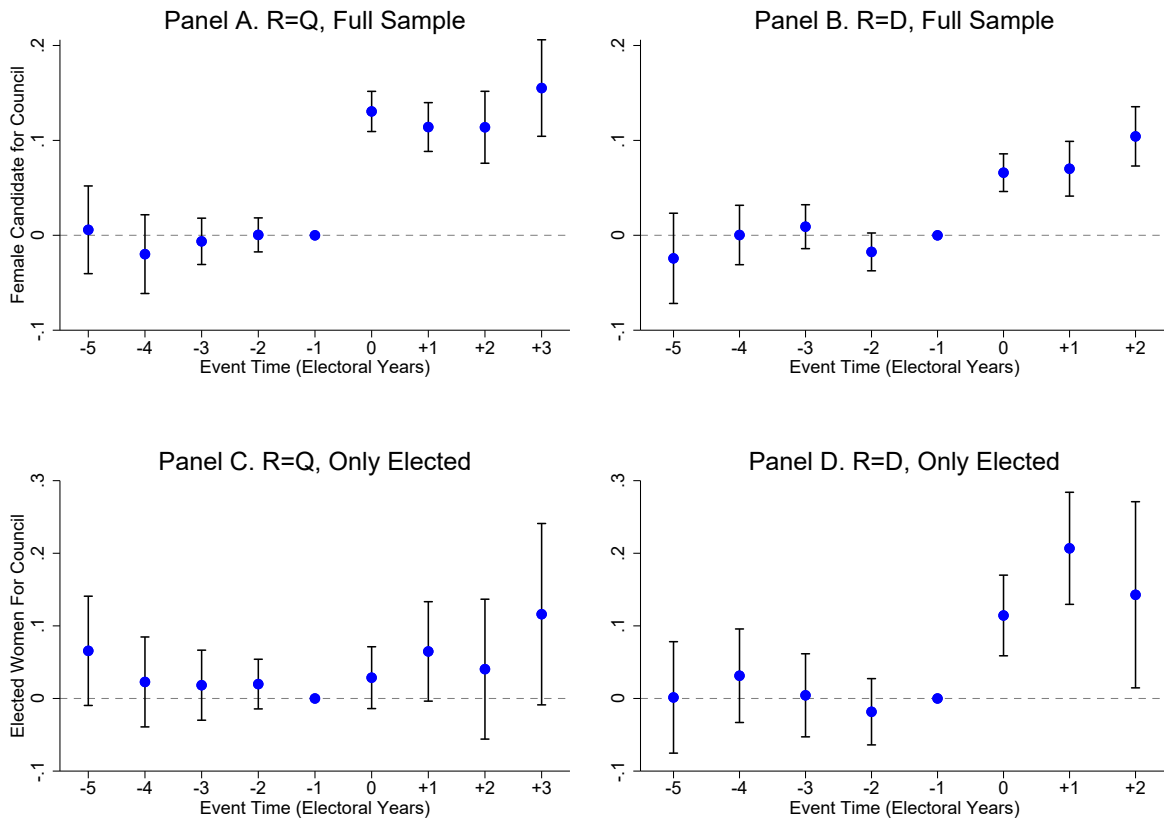


Figure 1: Gender Reforms and Women in Regional Council - DD Strategy

Note: The dependent variable is the dummy for female candidates when the treatment is party-list gender quota (Panels A and C) and double-gender preference (Panels B and D). The coefficients are least-squares estimates of the β_τ 's with $-5 \leq \tau \leq 3$ in Panels A and C in $-5 \leq \tau \leq 2$ in Panels B and D in a specification of regression (1), which includes the dummy $P_{r,t}^{R-}$ for the alternative gender reform. Vertical lines represent 95 percent confidence intervals based on standard errors clustered at the province level. The unit of observation is at the individual level. The samples consist of 53,040 individuals from all 15 regions with ordinary statute who were candidates for regional council over the period 1995-2020. Event time is defined in election years and tracks the election window around $\tau = 0$, the year of the first election after treatment initiation. The omitted election year is $\tau = -1$. See Online Appendix C for details on data sources and variable definitions.

women's participation in politics, potentially due to increased voluntary participation or strategic selection by parties to enhance their chances of winning.¹²

While we demonstrated that the implemented gender reforms led to more women running for office at the regional level, this outcome does not guarantee that women have subsequently experienced improved representation in elected bodies following the implementation of these reforms. This is because voters may continue to favor male candidates, thereby perpetuating the underrepresentation of women, despite the increased number of female candidates. To assess the effectiveness of gender reforms in increasing the probability of women being elected, we can employ Equation (1) while restricting the sample to candidates who secured seats in the regional council in a given election. The

¹²In Online Appendix A, Figure A.2 presents robustness analyses of regression (1) by incorporating variations such as including a linear region-specific time trend, excluding specific regions, controlling for candidates' party affiliation, and accounting for more stringent mechanisms implemented by certain regions. The observed dynamic patterns align with the results depicted in Figure 1.

results are presented in Panels C and D of Figure 1. Notably, these graphs reveal that gender quotas may have been relatively ineffective in enhancing the actual representation of women in the councils. Conversely, the introduction of the double-gender preference system not only resulted in a higher number of female candidates but also encouraged voters to shift their support from male to female candidates.

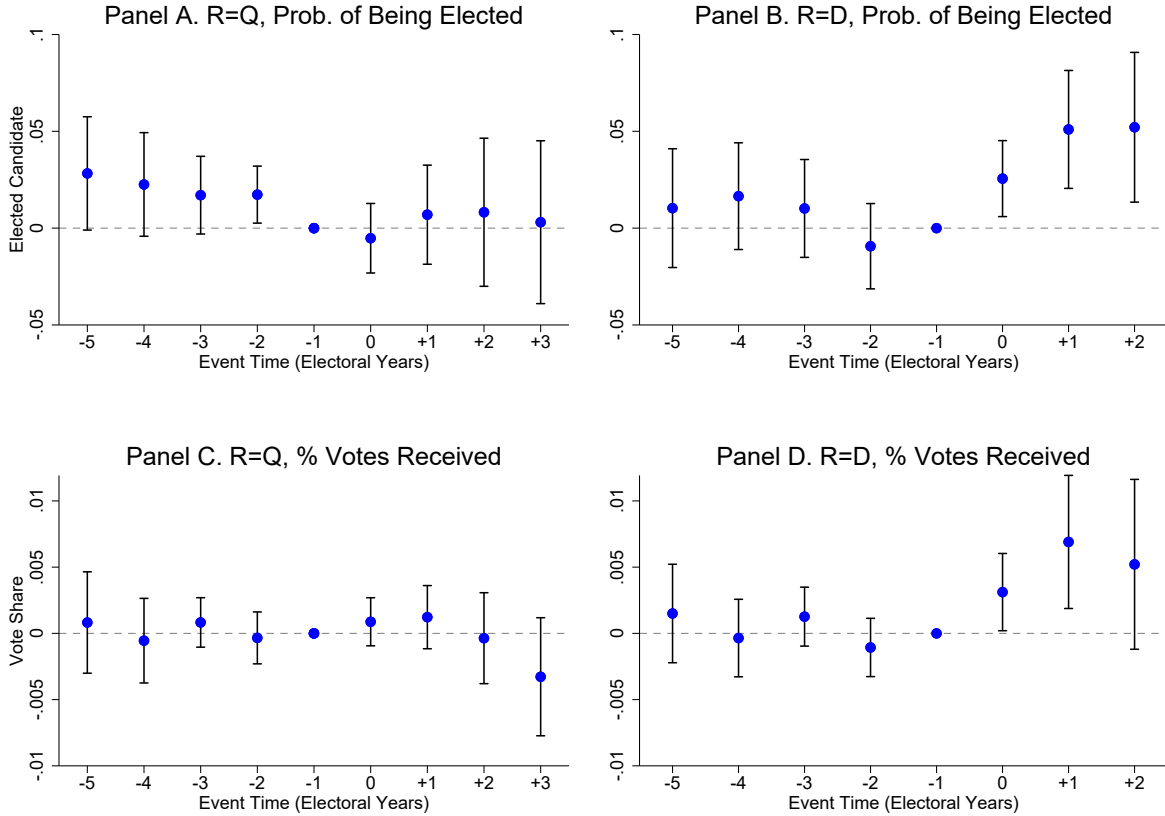


Figure 2: Gender Reforms and Women in Regional Council - DDD Strategy

Note: In the first row panels, the dependent variable is the dummy for a candidate being elected when the treatment is party-list gender quota (Panel A) and double-gender preference (Panel B). In the second row panels, the dependent variable is the share of votes received by each candidate when the treatment is party-list gender quota (Panel C) and double-gender preference (Panel D). The coefficients are least-squares estimates of the β_τ 's with $-5 \leq \tau \leq 3$ in Panels A and C and $-5 \leq \tau \leq 2$ in Panels B and D in a specification of regression (2), which includes the dummy $P_{r,t}^R$ for the alternative gender reform. Vertical lines represent 95 percent confidence intervals based on standard errors clustered at the province level. The unit of observation is at the individual level. The samples consist of 53,040 individuals from all 15 regions with ordinary statute who were candidates for regional council over the period 1995-2020. Event time is defined in election years and tracks the election window around $\tau = 0$, the year of the first election after treatment initiation. The omitted election year is $\tau = -1$. See Online Appendix C for details on data sources and variable definitions.

To corroborate the results on the effectiveness of gender reforms in improving the chance of women of receiving votes and being elected and overcome the above-mentioned shortcomings of regression (1), we empirically estimate coefficients β_τ 's using regression (2). Estimation results are shown in Figure 2. Panels A and B confirm the result of the DD strategy and could be interpreted as a further robustness check. The coefficient measures the reduced gender penalty in electoral probability. In Panels C and D, we utilize the share of votes received by each candidate as an alternative outcome for the regression.

The results align with those in Panels A and B, indicating a significant reduction in the voting gap between female and male candidates, but only after the implementation of the double-gender preference reform. Conversely, the results remain inconclusive following the implementation of gender quotas.

Table 1: Magnitude of the Effect of Gender Reforms on Councilors

	DD Strategy		DDD Strategy	
	(I)	(II)	(III)	(IV)
	Female	Female	Elected	Vote Share
$P_{r,t}^Q$ indicator	0.123*** (0.011)	0.026 (0.022)		
$P_{r,t}^D$ indicator	0.067*** (0.010)	0.136*** (0,02)		
Gender-group indicator × $P_{r,t}^Q$ indicator			-0.011 (0.009)	0.002** (0.001)
Gender-group indicator × $P_{r,t}^D$ indicator			0.029*** (0.009)	0.004*** (0.001)
Region fixed effects	✓	✓		
Year fixed effects	✓	✓		
Region-by-year fixed effects			✓	✓
Gender-group-by-year fixed effects			✓	✓
Gender-group-by-region fixed effects			✓	✓
Mean at omitted time	0.32	0.127	0.059	0.0055
R-squared	0.062	0.056	0.018	0.045
Observations	53,040	3,528	53,040	53,040

Note: The full sample consists of a stacked cross-section of 53,040 candidates running for regional elections as council members of the regional council. The dependent variable in Columns (I) and (II) is the dummy for female candidates. The dependent variable in Column (III) is the dummy for candidates being elected. The dependent variable in Column (IV) is the share of votes received by each candidate. In Column (II), the sample is restricted to elected candidates. The estimated coefficients in Columns (I) and (II) are of the static version of model (1). The estimated coefficients in Columns (III) and (IV) are of the static version of model (2). Standard errors clustered at the province level are in parenthesis with *, **, *** representing the 10%, 5%, 1% significance levels. See Online Appendix C for details on data sources and variable definitions.

To provide an idea of the magnitudes, Table 1 presents coefficient estimates for indicator variables $P_{r,t}^Q$ and $P_{r,t}^D$ related to the gender quota reform and the double-gender preference reform in static versions of regression (1) (Columns I and II) and regression (2) (Columns III and IV). These coefficient estimates can be roughly interpreted as percentage changes. In the first column, the results indicate that quotas increased the number of female candidates by 12 p.p., which corresponds to a 36% increase. Additionally, the double-gender preference reform led to a nearly 7 p.p. increase in female candidates, equivalent to a 20% boost. Moving to Column II, it highlights that quotas had no significant effect on the number of elected women, while the double-gender preference reform significantly improved women's representation, resulting in a 14 p.p. increase in female

councilors, effectively doubling their numbers. Columns III and IV should be interpreted as representing the closing of the gender gap in either electoral probability (III) or the percentage of votes received (IV). Both models indicate a significant reduction in gender gaps following the implementation of the demand-side reform, nearly closing the gap in terms of the percentage of votes received, whereas the supply-side reform had a minimal impact.

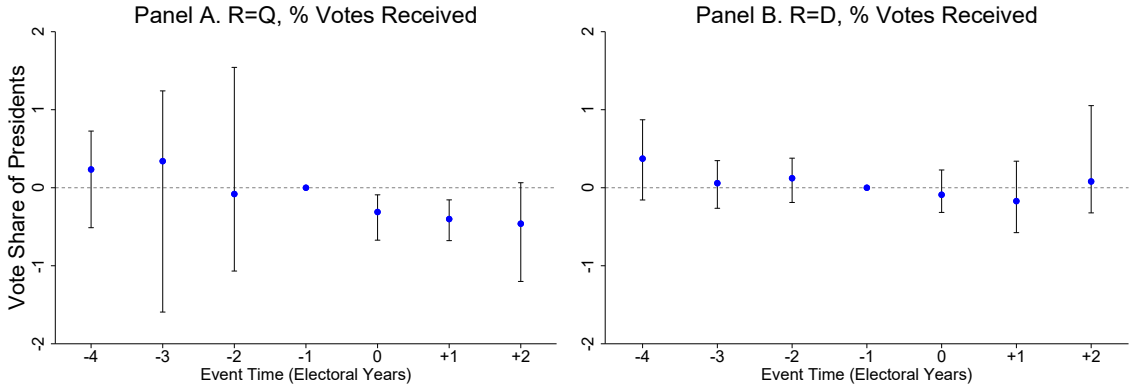


Figure 3: Gender Reforms and Female Regional President - DDD Strategy

Note: The dependent variable is the share of votes received by each candidate when the treatment is party-list gender quota (Panel A) and double-gender preference (Panel B). The coefficients are least-squares estimates of the β_τ 's with $-4 \leq \tau \leq 2$ in a specification of regression (2), which includes the dummy $P_{r,t}^{R-}$ for the alternative gender reform. Vertical lines represent 95 percent confidence intervals based on standard errors clustered at the regional level, using cluster bootstrap-t procedure to correct for small clusters. The unit of observation is at the individual level. The samples consist of 462 individuals from all 15 regions with ordinary statute who were candidates as regional president over the period 1995-2020. Event time is defined in election years and tracks the election window around $\tau = 0$, the year of the first election after treatment initiation. The omitted election year is $\tau = -1$. See Online Appendix C for details on data sources and variable definitions.

As regional-level elections involve the concurrent selection of both the regional president and council members, it is worth investigating whether gender reforms may have exerted indirect and unintended effects on the representation of women in leadership positions. To explore this, we utilize model (2) and examine the influence of both gender quota and double gender preference reforms on the likelihood of being elected as president and the share of votes received. The results are presented in Figure 3.¹³ The figure shows that while gender quota reforms did not significantly affect the vote share of male and female candidates for council positions, they did lead to a widening of the gender gap in terms of the vote share for presidential candidates. This outcome suggests a potentially negative impact on women's representation in leadership positions. Conversely, the double-gender preference system appears to have no discernible influence on voting decisions for the presidency. To gain a deeper understanding of the impact of gender

¹³In a presidential election, a candidate typically garners support from multiple lists within a specific region. These lists, collectively supporting a candidate, form a coalition, a common occurrence across all provinces within that region. To account for the spatial correlation among individual errors, we cluster standard errors at the regional level in this specification. Given the limited number of clusters, we address standard error correction through bootstrap resampling.

reforms on women’s participation and leadership, we will conduct a municipal-level analysis, leveraging the variations introduced by the timing of treatment initiation across different municipalities. Prior to exploring this alternative institutional context, we perform some robustness tests and provide some evidence of potential mechanisms that can partly explain the impact of gender reforms on voting outcomes.

C. Robustness

The estimates indicate that demand-side gender reforms have been more effective than supply-side gender reforms. Even though the regressions control for other concurrent reforms in the same region, concerns persist about the empirical specification’s ability to fully distinguish the effects of the two reforms individually. In particular, the observed effectiveness of the double-gender preference system might be attributed to the sequential timing of the two reforms, with double-gender preference systems introduced after the gender quotas. To mitigate this concern, we perform a battery of tests.

First, we categorize the sample into regions that implemented both reforms simultaneously and those that implemented them sequentially. We then compare how the reforms influenced electoral outcomes in these two groups of regions. The results are presented in Figure A.3 in Online Appendix A, which illustrates that gender quotas had a positive impact on women’s electoral prospects only when implemented concurrently with double-gender preference systems, while they had no discernible effect otherwise. In contrast, double-gender preference systems demonstrated effectiveness in both groups. These findings support the hypothesis that quotas are not effective.¹⁴

Secondly, to isolate the effect of the double-gender preference system and demonstrate that its impact is not merely a consequence of being implemented after the quota, we examine regions where gender quotas were more likely to be not stringent due to party lists already being in compliance with quota requirements before the reform, as well as regions where the introduction of gender quotas was likely binding due to the opposite scenario. Figure A.5 in Online Appendix A reveals that the double-gender preference reform was effective in regions where the enactment of gender quotas was not stringent, suggesting that the reform would have been effective even in the absence of quotas. This indicates that, if anything, the actual implementation of quotas might have hindered the impact of double-gender preference reforms rather than reinforce them.

¹⁴In Figure A.4 in Online Appendix A, observations following the implementation of double-gender preference systems are omitted to isolate the impact of only the first treatment on the electoral outcome. The estimates support the conclusion that gender quotas are an ineffective tool for increasing the likelihood of women being elected.

Finally, Figure A.6 in Online Appendix A presents the estimates obtained through alternative estimators in order to address issues related to the heterogeneity bias in the event studies design when reforms' implementation is staggered. The results reveal that the estimated coefficients remain consistently robust across a diverse set of estimators.

D. Mechanisms

Party List Manipulation and Vote Dilution We investigate how the vote distribution has changed after the enactment of the gender reforms to understand why the double-gender preference system appears to be a more effective tool for boosting gender representation. In Figure A.8 of Online Appendix A, we present estimates of the treatment effect on the variable vote share for regional council candidates across quantiles. These estimates are provided separately for male and female candidates.¹⁵ The analysis reveals that the introduction of gender quotas resulted in an overall decrease in the percentage of candidates in the upper quantile of the vote distribution, with an impact being particularly significant for male candidates. Conversely, the double-gender preference system had an asymmetric impact on female and male candidates. While it led to a decrease in the percentage of male candidates in the upper tail of the voting distribution, it significantly increased the proportion among female candidates. This demonstrates that the reform played a crucial role in concentrating votes among the most appealing female candidates.

One potential unintended consequence of the gender quota reform within an institutional framework, where candidates for presidency receive support from multiple open lists, is the emergence of strategic incentives for political parties to manipulate their candidate lists. Parties may choose to fulfill the quota requirement by adding more women to the ballot without necessarily replacing men with women. This practice could lead to an overall increase in the number of candidates on each list or an expansion of the lists supporting the same presidential candidate, resulting in a greater number of candidates running in a given province. As a result, the proliferation of candidates may dilute the distribution of votes among this larger pool of candidates, potentially weakening the electoral prospects of women seeking office. This phenomenon is in line with the findings from the quantile regression analysis discussed earlier. To test this hypothesis directly, we evaluate the impact of both the gender quota and double-gender preferences on the number of candidates and the number of lists supporting a given candidate for president.

¹⁵Figure A.7 displays the relative density function of the vote share variable before and after the initiation of the treatment. Qualitatively, the results in Figure A.7 align with the estimates presented in Figure A.8.

In Panel A of Figure A.9, we find evidence supporting the hypothesis of strategic manipulation of party lists. The figure underscores that, in cases where double-gender preferences are considered, the size of candidate lists and the number of candidates did not increase following the reform. However, the introduction of gender quotas led to a dilution of preferences by expanding the candidate pool. In Panel B of the same figure, we demonstrate that the impact is more pronounced in provinces with a greater gender bias. To assess this bias, we used the residualized log gender earning gaps in the private sector (adjusted by education, occupation, economic activity) at the provincial level during the pre-reform period as a proxy. This measure reflects attitudes toward gender in the labor market and more generally attitudes toward the role of women in society (Bertrand, 2011). Our findings are therefore suggestive of a backlash effect in more gender-biased areas, as they indicate that the exogenously imposed constraints on party lists may distort the supply of candidates against women.

VI. Conclusions

This study provides a comprehensive analysis of the impact of gender-based affirmative action programs on women's political representation in Italy, focusing on both supply-side and demand-side reforms. Our findings reveal that soft forms of affirmative action, such as double-gender preferences, are more effective in increasing women's political representation, while strict forms like party-list quotas may have unintended negative consequences due to manipulations by political parties and voter biases. The case of Campania illustrates the effectiveness of the double-gender preference mechanism, demonstrating the potential of well-implemented soft affirmative actions.

REFERENCES

- Bagues, M., and P. Campa.** 2021. Can Gender Quotas in Candidate Lists Empower Women? Evidence from a Regression Discontinuity Design. *Journal of Public Economics*, 194: 104315.
- Baltrunaite, A., Casarico, A., Profeta, P., and G. Savio.** 2019. Let the Voters Choose Women. *Journal of Public Economics*, 180: 104085.
- Baskaran, T., Bhalotra, S., Min, B. and Y. Uppal.** 2023. Women Legislators and Economic Performance. *Journal of Economic Growth*, 122: 1–64.
- Beaman, L., R. Chattopadhyay, E. Duflo, R. Pande, and P. Topalova.** 2009. Powerful Women: Female Leadership and Gender Bias. *Quarterly Journal of Economics*, 124(4): 1497–1540.
- Brollo, F., and U. Troiano.** 2016. What Happens when a Woman Wins an Election? Evidence from Close Races in Brazil. *Journal of Development Economics*, 122: 28–45.
- Casas-Arce, P., and A. Saiz.** 2015. Women and Power: Unpopular, Unwilling, or Held Back? *Journal of Political Economy*, 123(3): 641–669.
- Chattopadhyay, R., and E. Duflo.** 2004. Women as Policy Makers: Evidence from a Randomized Policy Experiment in India. *Econometrica*, 72(5): 1409–1443.
- De Chaisemartin, C., and X. D’Haultfoeuille.** 2020. Two- way Fixed Effects Estimators with Heterogeneous Treatment Effects. *American Economic Review*, 110(9): 2964–2996.
- De Paola, M., V. Scoppa, and R. Lombardo.** 2010. Can Gender Quotas Break Down Negative Stereotypes? Evidence from Changes in Electoral Rules. *Journal of Public Economics*, 94(5): 344–353.
- Esteve-Volart, B., and M. Bagues.** 2012. Are Women Pawns in the Political Game? Evidence from Elections to the Spanish Senate. *Journal of Public Economics*, 96(3–4): 387–399.
- Folke, O., Persson, T., and J. Rickne.** 2016. The Primary Effect: Preference Votes and Political Promotions. *American Political Science Review*, 110(3): 559–578.
- Fréchette, G. R., Maniquet, F., and M. Morelli.** 2008. Incumbents’ Interests and Gender Quotas. *American Journal of Political Science*, 52(4): 891–909.
- Gneezy, U., Niederle, M. and A. Rustichini.** 2003. Performance in Competitive Environments: Gender Differences. *The Quarterly Journal of Economics*, 118(3): 1049–1074.

- Grembi, V., T. Nannicini and U. Troiano.** 2016. Do Fiscal Rules Matter? *American Economic Journal: Applied Economics*, 8(3): 1–30.
- Le Barbanchon, T., and J. Sauvagnat.** 2022. Electoral Competition, Voter Bias, and Women in Politics. *Journal of the European Economic Association*, 20(1): 352–394.
- Lott, J. R., and L. W. Kenny.** 1999. Did Women’s Suffrage Change the Size and Scope of Government? *Journal of Political Economy*, 107(6): 1163–1198.
- Miller, G.** 2008. Women’s Suffrage, Political Responsiveness, and Child Survival in American History. *The Quarterly Journal of Economics*, 123(3): 1287–327.
- Niederle, M., and L. Vesterlund.** 2007. Do Women Shy Away From Competition? Do Men Compete Too Much? *The Quarterly Journal of Economics*, 122(3): 1067–1101.
- O’Brien, D., and J. Rickne.** 2016. Gender Quotas and Women’s Political Leadership. *American Political Science Review*, 110(1): 112–126.

Online Appendix for *On the Effectiveness of Gendering Politics*

These appendices present supplementary material referenced in the paper. Appendix A contains the figures and tables not presented in the text. Appendix B provides information on regional legislations. Appendix C defines variables and describes the data.

APPENDIX A. Supplementary Figures and Tables

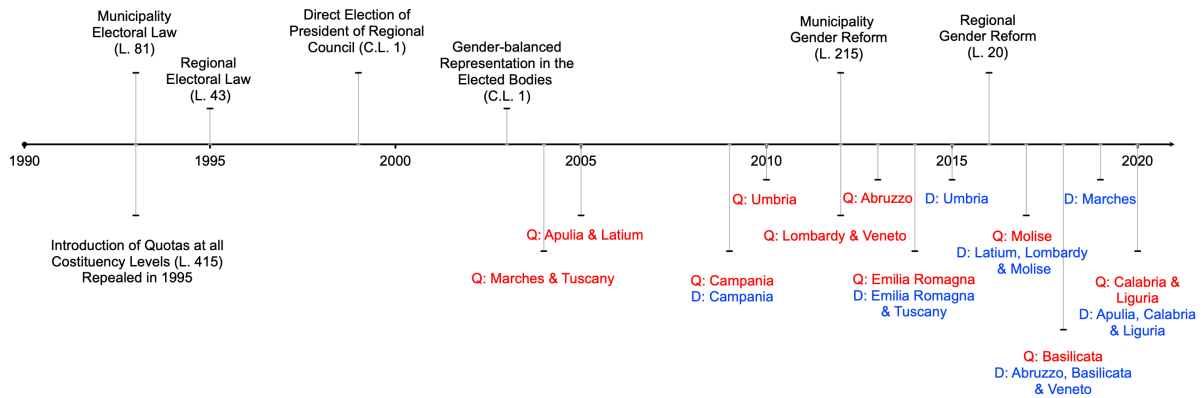


Figure A1: The Timeline of Gender Legislation in Italy

Note: The words in black denote state laws, while words in red and blue denote regional laws. “D” labels double-gender preference system and “Q” labels party-list gender quota system.

Table A1: Timing of Gender Reforms

	Dependent Variable			
	$P_r^Q \cdot \mathbb{1}(t = T_r)$		$P_r^D \cdot \mathbb{1}(t = T_r)$	
	Coefficient	Standard Error	Coefficient	Standard Error
Age of President	-0.012***	0.004	-0.009*	0.005
Age of Councilor	0.003	0.009	-0.000	0.009
Age of Assessor	0.022**	0.009	0.004	0.006
Education Attainment of President	-0.021	0.103	0.064	0.054
Education Attainment of Councilor	0.231	0.551	0.433	0.468
Education Attainment of Assessor	-0.059	0.113	-0.099	0.062
Female President	0.196	0.270	0.043	0.133
Share of Female Councilor	0.702	0.867	0.645	0.840
Share of Female Assessor	-0.048	2.026	0.810	0.947
Female Mayor	0.565	2.001	0.761	1.082
Share of Female Councilor (Municipal Level)	9.407***	3.109	-0.134	2.272
Gender Quota			0.110	0.401
Years Since Quota			0.008	0.022
Sample Mean		0.045		0.031
Adjusted R-squared		0.159		0.178
Observation		157		196

Note: Wild-bootstrapped p-values: *, **, *** represent the 10%, 5%, 1% significance levels. The dependent variable is an indicator which takes value 1 in the year of the law initiation. The regressor of interest is defined by each row. All regressions control for regional fixed effects, year fixed effects, ideology fixed effects, and cluster standard error at the regional level. Observations after the treatment initiation are dropped from the sample. See Appendix C for details on data sources and variable definitions.

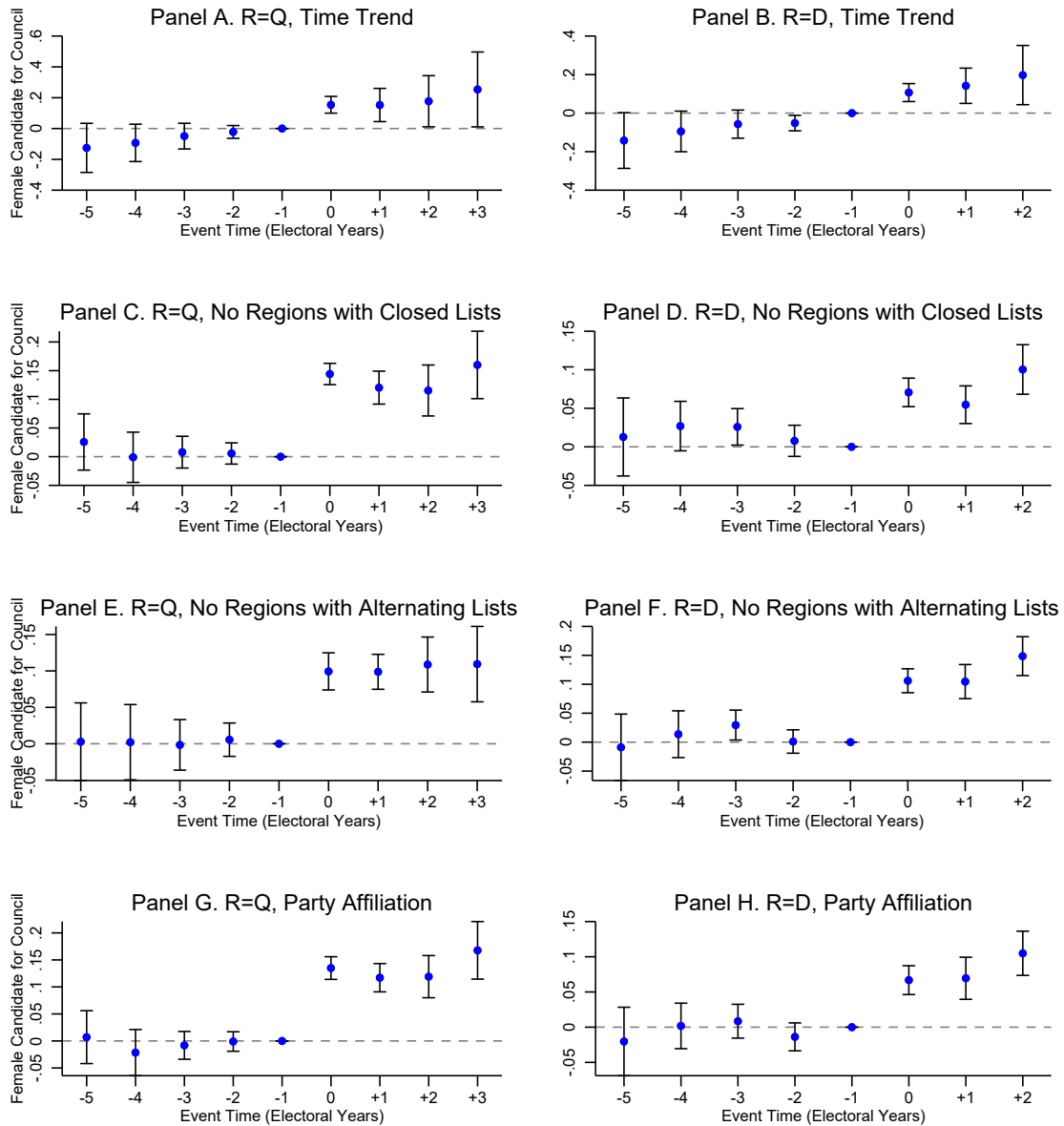


Figure A2: Gender Reforms and Women Participation in Regional Council - Robustness

Note: The dependent variable is the dummy for female candidates when the treatment is party-list gender quota $R = Q$ (Panels in the first column) and double-gender preference $R = D$ (Panels in the second column). The dots represent coefficient estimates and the vertical lines 95 percent confidence intervals for specifications that deviate from the specification reported in Figure 1 as follows: Panels A and B introduces linear region-specific time trends; Panels C and D drops Toscana and Puglia from the sample; Panels E and F drops Toscana, Lombardia, and Veneto from the sample; Panels G and H add party affiliation as additional control. See the note of Figure 1 for details on sample size and estimation strategy and online Appendix C for details on data sources and variable definitions.

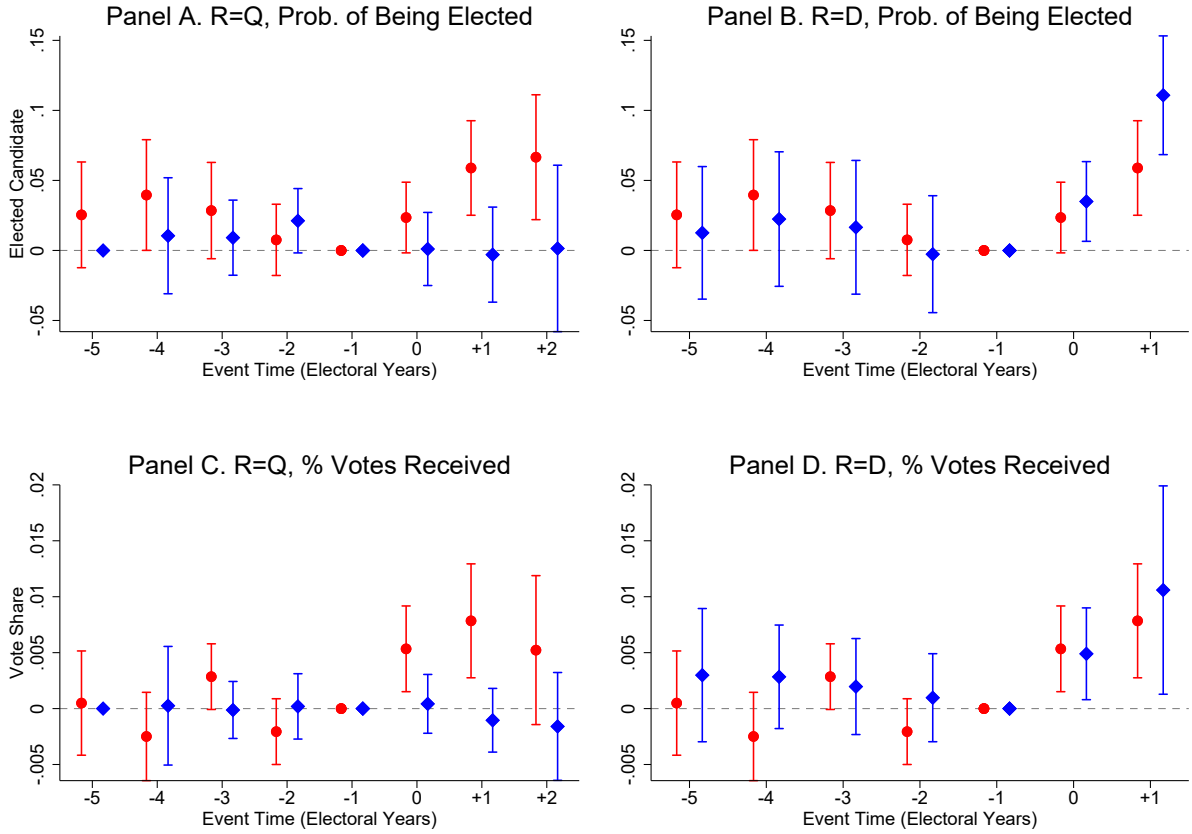


Figure A3: Reforms Implemented Simultaneously or Sequentially

Note: The sample is divided into the group of regions implementing the reforms in the same year (red with circular dots) and the group of regions implementing the reforms in different years (blue with diamond dots). See Table C.1 for the list of regions belonging to the two groups. In the first row panels, the dependent variable is the dummy for a candidate being elected when the treatment is party-list gender quota (Panel A) and double-gender preference (Panel B). In the second row panels, the dependent variable is the share of votes received by each candidate when the treatment is party-list gender quota (Panel C) and double-gender preference (Panel D). The coefficients are least-squares estimates of the β_τ 's with $-5 \leq \tau \leq 2$ in Panels A and B and $-5 \leq \tau \leq 1$ in Panels C and D in a specification of regression (2), which includes the dummy $P_{r,t}^R$ for the alternative gender reform. Vertical lines represent 95 percent confidence intervals based on standard errors clustered at the province level. The unit of observation is at the individual level. The samples consist of 53,040 individuals from all 15 regions with ordinary statute who were candidates for regional council over the period 1995-2020. Event time is defined in election years and tracks the election window around $\tau = 0$, the year of the first election after treatment initiation. The omitted election year is $\tau = -1$. See Online Appendix C for details on data sources and variable definitions.

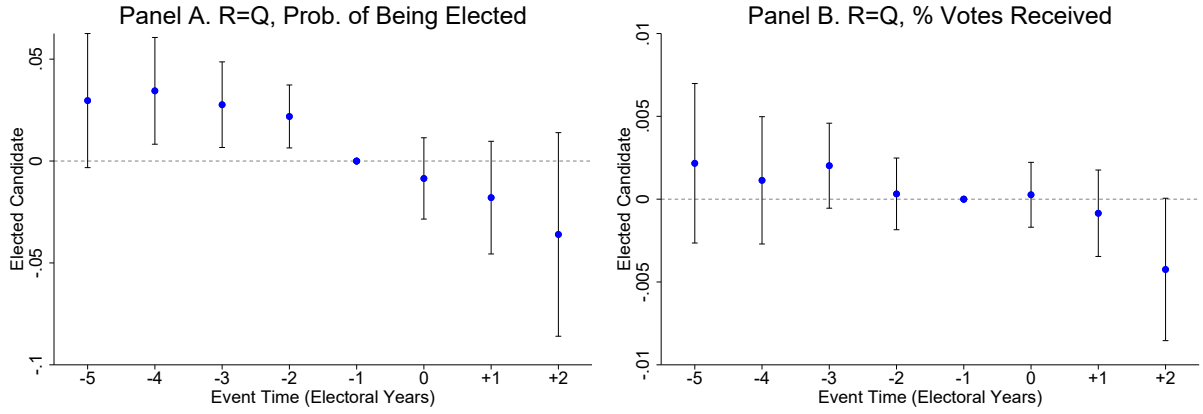


Figure A4: Dropping Observations Post Double-Gender Preference Systems

Note: The sample includes only observations before the time of the double-gender preference systems initiation. See Table C.1 for the list of regions and years included in the sample. The dependent variables are the dummy for a candidate being elected (Panel A) and the share of votes received by each candidate (Panel B) when the treatment is party-list gender quota. The coefficients are least-squares estimates of the β_τ 's with $-5 \leq \tau \leq 2$ in a specification of regression (2), which includes the dummy $P_{r,t}^{R-}$ for the alternative gender reform. Vertical lines represent 95 percent confidence intervals based on standard errors clustered at the province level. The unit of observation is at the individual level. The samples consist of 39,213 individuals from all 15 regions with ordinary statute who were candidates for regional council over the period 1995-2020. Event time is defined in election years and tracks the election window around $\tau = 0$, the year of the first election after treatment initiation. The omitted election year is $\tau = -1$. See Online Appendix C for details on data sources and variable definitions.

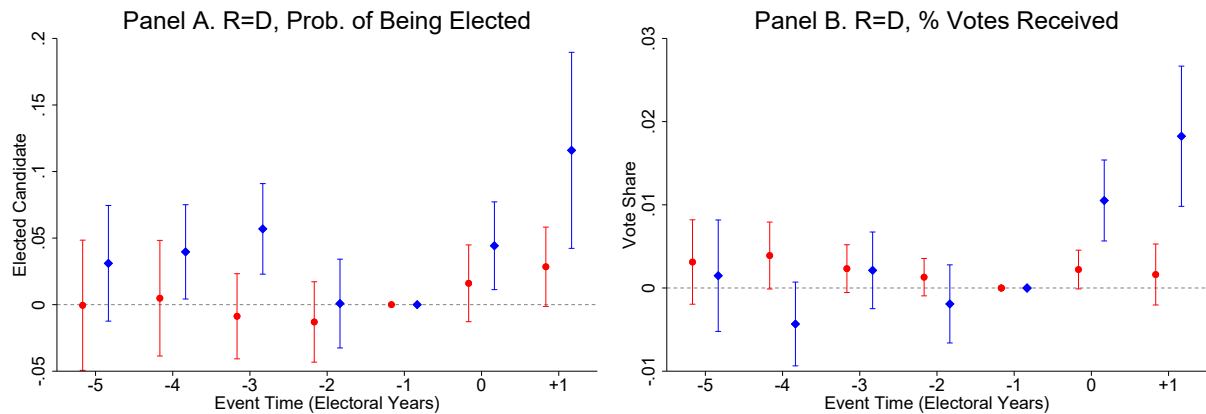


Figure A5: Binding Gender Quotas

Note: The sample is divided into the group of regions where the enactment of gender quotas is likely to be binding (red with circular dots) and the group of regions where the enactment of gender quotas is likely to be slack (blue with diamond dots). Regions where party lists had on average less than 30% of female candidates before the enactment of gender quotas are categorized in the group with binding gender quotas. In Panel A, the dependent variable is the dummy for a candidate being elected. In Panel B, the dependent variable is the share of votes received by each candidate. The coefficients are least-squares estimates of the β_τ 's with $-5 \leq \tau \leq 1$ in a specification of regression (2), which includes the dummy $P_{\tau,t}^{R^-}$ with $R^- = Q$ for the alternative gender reform. Vertical lines represent 95 percent confidence intervals based on standard errors clustered at the province level. The unit of observation is at the individual level. The samples consist of 53,040 individuals from all 15 regions with ordinary statute who were candidates for regional council over the period 1995-2020. Event time is defined in election years and tracks the election window around $\tau = 0$, the year of the first election after treatment initiation. The omitted election year is $\tau = -1$. See Online Appendix C for details on data sources and variable definitions.

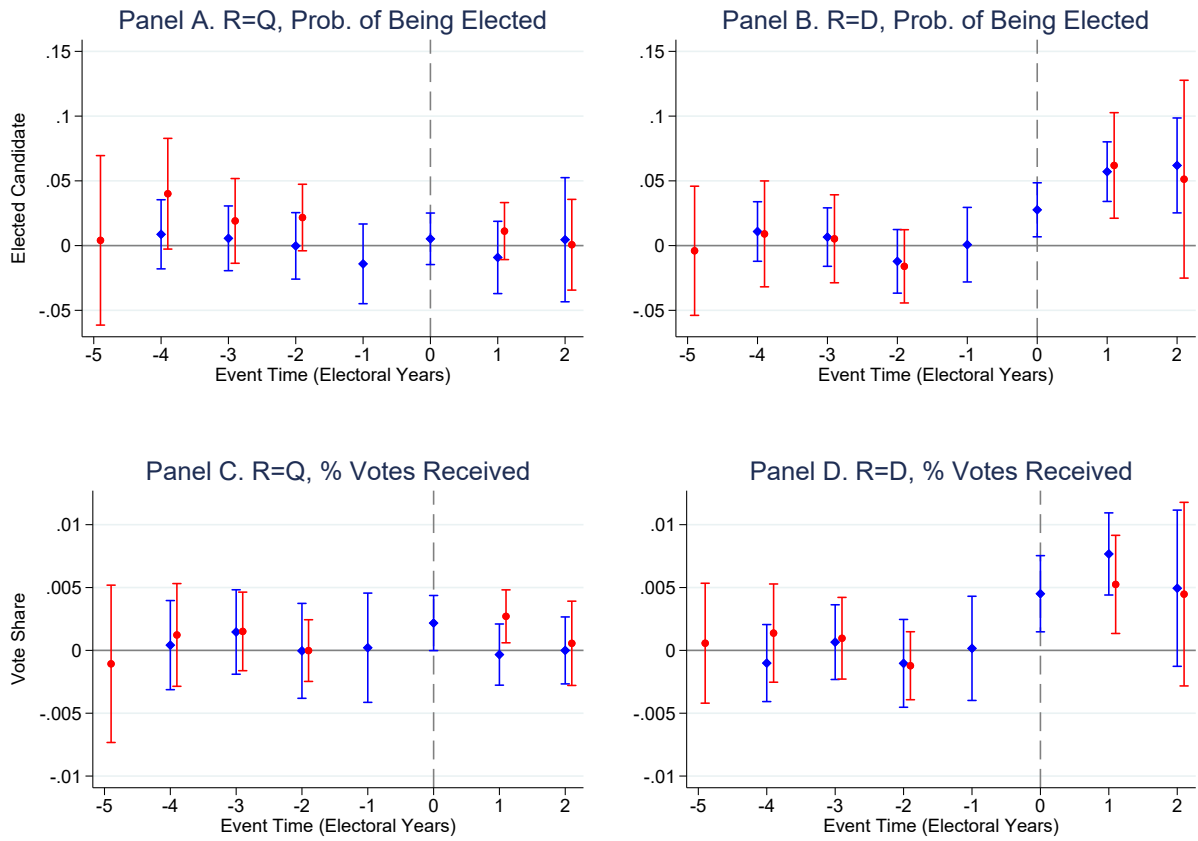


Figure A6: Robust Estimators

Note: In the first row panels, the dependent variable is the dummy for a candidate being elected when the treatment is party-list gender quota (Panel A) and double-gender preference (Panel B). In the second row panels, the dependent variable is the share of votes received by each candidate when the treatment is party-list gender quota (Panel C) and double-gender preference (Panel D). The coefficients are least-squares estimates of the β_τ 's with $-5 \leq \tau \leq 2$ in a specification of regression (2), which includes the dummy $P_{r,t}^{R-}$ for the alternative gender reform, using the estimator proposed by Sun and Abraham (2021) (red with circular dots) and Borusyak et al. (2021) (blue with diamond dots). Vertical lines represent 95 percent confidence intervals based on standard errors clustered at the province level. The unit of observation is at the individual level. The samples consist of 53,040 individuals from all 15 regions with ordinary statute who were candidates for regional council over the period 1995-2020. Event time is defined in election years and tracks the election window around $\tau = 0$, the year of the first election after treatment initiation. The omitted election year is $\tau = -1$. See Online Appendix C for details on data sources and variable definitions.

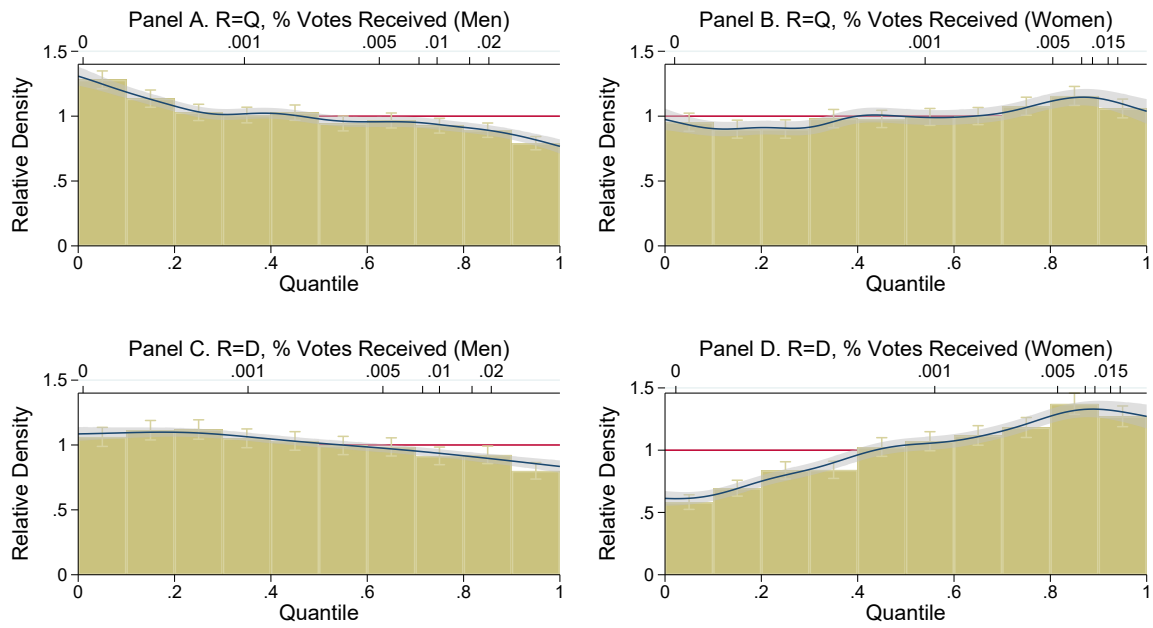


Figure A7: Gender Reforms and Women in Regional Council - Relative Distribution

Note: The y -axis illustrates the difference in the distribution of the dependent variable, which represents the vote share of council candidates, before and after the implementation of party-list gender quotas (Panels A and B) and the double-gender preference system (Panels C and D). The analysis is restricted to male candidates (Panels A and C) and female candidates (Panels B and D). The samples consist of 35,888 individuals in Panels A and C and 17,152 individuals in Panels B and D from all 15 regions with ordinary statute who were candidates for regional council over the period 1995-2020. See Online Appendix C for details on data sources and variable definitions.

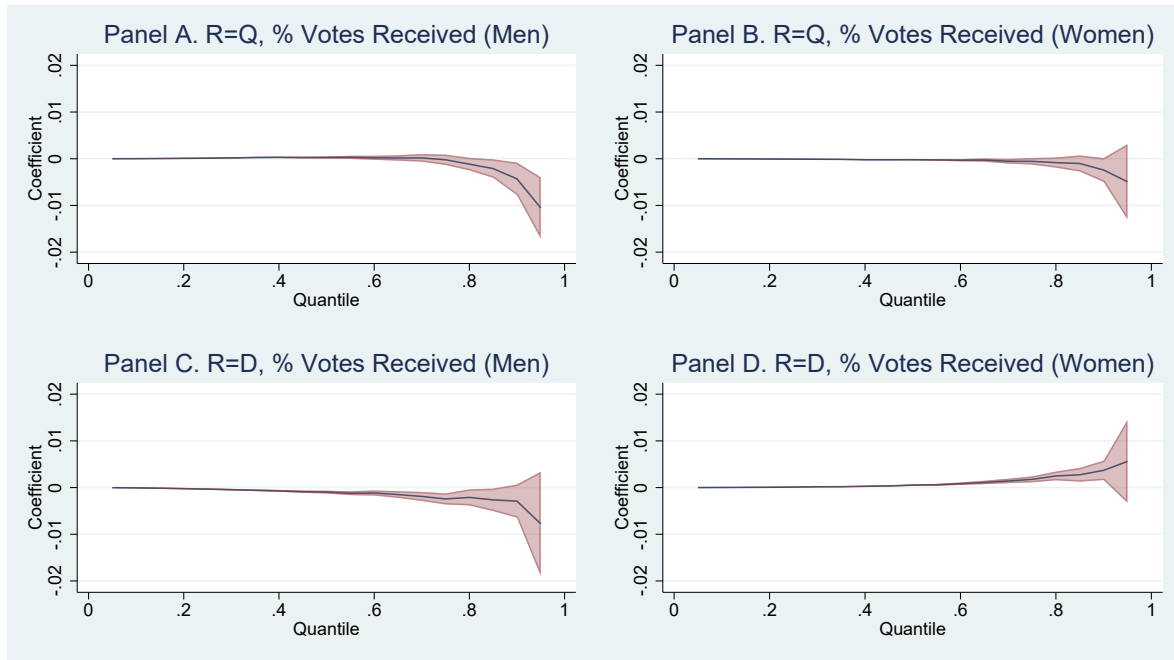


Figure A8: Gender Reforms and Women in Regional Council - Quantile Regression

Note: The dependent variable is the share of votes received by each candidate when the treatment is party-list gender quota (Panels A and B) and double-gender preference system (Panels C and D), limiting the sample to male candidates for council (Panels A and C) and female candidates for council (Panels B and D). The coefficients are estimated through a multivariate quantile regression with 95 percent confidence intervals. The samples consist of 35,888 individuals in Panels A and C and 17,152 individuals in Panels B and D from all 15 regions with ordinary statute who were candidates for regional council over the period 1995-2020. See Online Appendix C for details on data sources and variable definitions.

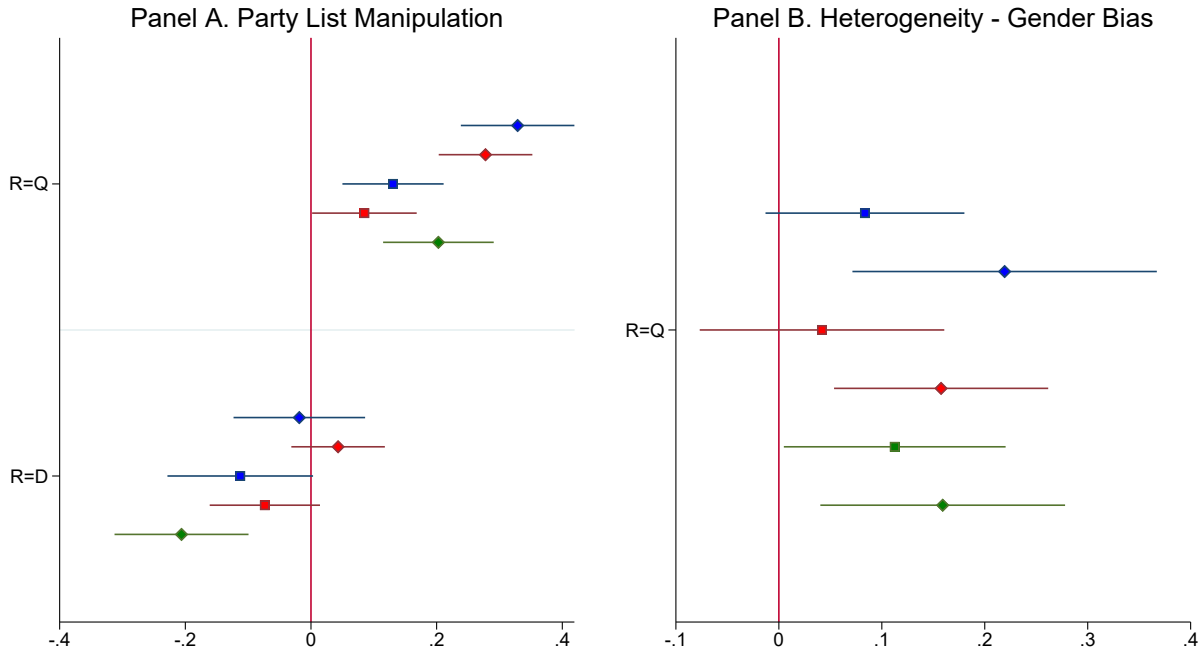


Figure A9: Strategic Party List Manipulation and Heterogeneity

Note: In Panel A, the dependent variables are the average number of candidates within a province (diamond blue dot), the average number of candidates within a list (diamond red dot), the average number of male candidates within a province (square blue dot), the average number of male candidates within a list (square red dot), and the average number of lists supporting the same candidate for president (diamond green dot). In Panel B, the dependent variables are the average number of male candidates in province with low gender bias (square blue dot) and high gender bias (diamond blue dot), the average number of male candidates within a list in province with low gender bias (square red dot) and high gender bias (diamond red dot), and the average number of lists supporting the same candidate for president in provinces with low gender bias (square green dot) and high gender bias (diamond green dot). Province with high gender bias are those with a residualized gender earnings gap larger than the median across province in the pre-treatment period. All coefficients (dots) are mean estimates of Poisson pseudo-maximum likelihood regressions including province and year fixed effects. Horizontal lines represent 95 percent confidence intervals based on standard errors clustered at the province level. The unit of observation is at the list level. The sample consists of 7,036 lists in 95 provinces over the period 1995-2020. See Online Appendix C for details on data sources and variable definitions.

APPENDIX B. Regional Legislation

For each region that has enacted the statutory autonomy and the electoral rules, we present information on the legislative process and its sources.

Abruzzo subscribes its own statute on December 28, 2006. The regional law 1/2013 modifies Arts. 14 and 43 of the statute by lowering the numbers of members in the regional council from 42 to 31 and in the regional committee from 10 to 6. See consiglio.abruzzo.it/Statuto for the official source.

The regional law 9/2013 regulates the regional election and modifies the national law 43/1995 by (i) increasing the exclusion threshold to keep province list with less than 4% of valid ballots (or 2% if in a coalition) out of the regional council; (ii) replacing the blocked regional list with a majority prize; (iii) abolishing split voting; and (iv) introducing gender quota on the number of candidate list with neither of the two genders be more than 60%. The regional law 15/2018 integrates the law 9/2013 by introducing the double

preferences if the second preference is a different gender from the first preference. See regione.abruzzo.it/Electoral for the official source.

Apulia subscribes its own statute on May 7, 2004. The regional law 8/2013 modifies Arts. 24 and 43 of the statute by lowering the numbers of members in the regional council from 71 to 51 and the numbers of members of the regional committee from 12 to 10. See regione.puglia.it/Statuto for the official source.

The regional law 2/2005 regulates the regional election and modifies the national law 43/1995 by (i) increasing the exclusion threshold to keep province list with less than 4% of valid ballots out of the regional council (starting from the 2010 election); (ii) replacing the blocked regional list with a majority prize; and (iii) introducing gender quota on the number of candidate list with neither of the two genders be more than 2/3. The regional law 7/2015 introduces further change by introducing gender quota on the number of candidate list with neither of the two genders be more than 60%. Finally, the decree of the president of regional council 327/2020 introduces the double preference if the second preference is a different gender from the first preference. See regione.puglia.it/Electoral for the official source.

Basilicata subscribes its own statute on November 17, 2016. According to Arts. 25 and 49, the numbers of members in the regional council and in the regional committee are 21 and 5, respectively. See consiglio.basilicata.it/Statuto for the official source.

The regional law 20/2018 regulates the regional election and modifies the national law 43/1995 by (i) replacing the blocked regional list with a majority prize; (ii) abolishing split voting; (iii) introducing gender quota on the number of candidate list with neither of the two genders be more than 60%; and (iv) introducing the double preference if the second preference is a different gender from the first preference. See regione.basilicata.it/Electoral for the official source.

Calabria subscribes its own statute on February 7, 2005. The regional laws 8/2014 and 15/2015 modify Arts. 1 and 35 of the statute by lowering the numbers of members in the regional council from 51 to 31 and in the regional committee from 11 to 7. See consiglio.calabria.it/Statuto for the official source.

The regional law 1/2005 regulates the regional election and modifies the national law 43/1995 by increasing the exclusion threshold to keep province list with less than 4% of valid ballots out of the regional council. The regional law 4/2010 introduces further changes by replacing the blocked regional list with a majority prize. Moreover, the regional law 19/2014 (i) abolishes split voting; (ii) merges the districts of Crotona, Vibo and Catanzaro; and (iii) revives the blocked regional list with six candidates. Finally, the regional law 15/2020 introduces the double preference if the second preference is a

different gender from the first preference and gender quota on the number of candidate list with neither of the two genders be more than 60%. See regione.calabria.it/Electoral for the official source.

Campania subscribes its own statute on May 28, 2009. The regional law 6/2014 modifies Arts. 27 and 41 of the statute by lowering the numbers of members in the regional council from 61 to 51 and in the regional committee from 12 to 10. See consiglio.campania.it/Statuto for the official source.

The regional law 4/2009 regulates the regional election and modifies the national law 43/1995 by (i) replacing the blocked regional list with a majority prize; (ii) introducing the double preference if the second preference is a different gender from the first preference; and (iii) introducing gender quota on the number of candidate list with neither of the two genders be more than 2/3. See regione.campania.it/Electoral for the official source.

Emilia Romagna subscribes its own statute on March 31, 2005. The regional laws 12/2009 and 25/2013 modify Arts. 29 and 45 of the statute by lowering the numbers of members in the regional council from 67 to 50 and in the regional committee from 12 to 10. See regione.emilia-romagna.it/Statuto for the official source.

The regional law 21/2014 regulates the regional election and modifies the national law 43/1995 by (i) replacing the blocked regional list with a majority prize; (ii) introducing the double preference if the second preference is a different gender from the first preference; and (iii) introducing gender quota on the number of candidate list with neither of the two genders be more than 50%. See regione.emilia-romagna.it/Electoral for the official source.

Latium subscribes its own statute on November 11, 2004. The regional law 11/2013 modifies Arts. 19 and 45 of the statute by lowering the numbers of members in the regional council from 61 to 50 and in the regional committee from 17 to 11. See regione.lazio.it/Statuto for the official source.

The regional law 2/2005 regulates the regional election and modifies the national law 43/1995 by introducing gender quota on the number of candidate list with neither of the two genders be more than 2/3. The regional law 10/2017 introduces further changes by (i) replacing the blocked regional list with a majority prize; (ii) introducing the double preference if the second preference is a different gender from the first preference; and (iii) introducing gender quota on the number of candidate list with neither of the two genders be more than 50%. See regione.lazio.it/Electoral for the official source.

Liguria subscribes its own statute on May 3, 2005. The regional law 1/2013 modifies Arts. 15 and 41 of the statute by lowering the numbers of members in the regional council from 51 to 31 and in the regional committee from 12 to 6. See regione.liguria.it/Statuto

for the official source.

The regional law 18/2020 regulates the regional election and modifies the national law 43/1995 by introducing gender quota on the number of candidate list with neither of the two genders be more than 60% and the double preference if the second preference is a different gender from the first preference. See regione.liguria.it/Electoral for the official source.

Lombardy subscribes its own statute on August 30, 2008. According to Arts. 12 and 41, the numbers of members in the regional council and in the regional committee are 80 and 16, respectively. See regione.lombardia.it/Statuto for the official source.

The regional law 17/2012 regulates the regional election and modifies the national law 43/1995 by replacing the blocked regional list with a majority prize and requiring alternating men and women in the electoral list. The regional law 38/2017 integrates the law 17/2012 by introducing the double preference if the second preference is a different gender from the first preference. See regione.lombardia.it/Electoral for the official source.

Marches subscribes its own statute on March 15, 2005. The regional law 3/2013 modifies Arts. 11 and 27 of the statute by lowering the numbers of members in the regional council from 42 to 30 and in the regional committee from 10 to 6. See regione.marche.it/Statuto for the official source.

The regional law 27/2004 regulates the regional election and modifies the national law 43/1995 by introducing gender quota on the number of candidate list with neither of the two genders be more than 2/3. The regional law 5/2015 introduces further changes by replacing the blocked regional list with a majority prize and abolishing split voting. Finally, the regional law 36/2019 introduces the double preference if the second preference is a different gender from the first preference and modifies the gender quota with the prescription that neither of the two genders in the candidate list be less than 40%. See regione.marche.it/Electoral for the official source.

Molise does not have yet subscribed its own statute following the constitutional law 1/1999. According to the regional law 21/2012, the numbers of members in the regional council and in the regional committee are respectively 21 and 4.

The regional law 20/2017 regulates the regional election and modifies the national law 43/1995 by (i) increasing the exclusion threshold to keep province list with less than 10% of valid ballots out of the regional council; (ii) replacing the blocked regional list with a majority prize; (iii) abolishing split voting; (iv) introducing gender quota on the number of candidate list with neither of the two genders be more than 60%; (v) introducing the double preference if the second preference is a different gender from the first preference; and (vi) merges the districts of Campobasso and Isernia. See regione.molise.it/Electoral

for the official source.

Piedmont subscribes its own statute on March 4, 2005. The regional law 3/2013 modifies Arts. 17 and 55 of the statute by lowering the numbers of members in the regional council from 61 to 51 and the numbers of members of the regional committee from 14 to 11. See regione.piemonte.it/Statuto for the official source.

The national law 43/1995 regulates the regional election. Up to date, Piemonte does not have yet transpose the national law 20/2016 on the implementation of the gender quota on the number of candidate list and the double preference if the second preference is a different gender from the first preference..

Tuscany subscribes its own statute on February 12, 2005. The regional law 18/2013 modifies Arts. 6 and 35 of the statute by lowering the numbers of members in the regional council from 53 to 41 and the numbers of members of the regional committee from 10 to 8. See regione.toscana.it/Statuto for the official source.

The regional law 25/2004 regulates the regional election and modifies the national law 43/1995 by (i) increasing the exclusion threshold to keep province list with less than 4% of valid ballots out of the regional council; (ii) replacing the opened province list with a blocked list with no preferences required; and (iii) introducing gender quota on the number of candidate list with neither of the two genders be more than 2/3. The regional law 51/2014 introduces further change by (i) lowering the exclusion threshold to keep province list with less than 3% of valid ballots out of the regional council; (ii) reintroducing the opened province list with preferences required; (iii) requiring alternating men and women in both the blocked regional list and opened provincial list; (iv) introducing the double preference if the second preference is a different gender from the first preference; and (v) splitting the electoral district of Florence into four separate districts: Florence 1, Florence 2, Florence 3, and Florence 4. Moreover, the law introduces the possibility of run-off election if in the first round no candidates to the presidency of the regional council gains more that 40% of the ballots. See regione.toscana.it/Electoral for the official source.

Umbria subscribes its own statute on April 16, 2005. The regional law 24/2013 modifies Arts. 42 and 67 of the statute by lowering the numbers of members in the regional council from 33 to 21 and the numbers of members of the regional committee from 10 to 6. See regione.toscana.it/Statuto for the official source.

The regional law 2/2010 regulates the regional election and modifies the national law 43/1995 by introducing gender quota on the number of candidate list with neither of the two genders be more than 2/3. The regional law 4/2015 introduces further change by (i) replacing the blocked regional list with a majority prize; (ii) abolishing split voting; (iii) modifying gender quota on the number of candidate list with neither of the two genders

be more than 60%; and (iv) introducing the double preference if the second preference is a different gender from the first preference. See regione.umbria.it/Electoral for the official source.

Veneto subscribes its own statute on April 17, 2012. According to Art. 53, the number of members in the regional committee is 9. The regional law 5/2012 modifies Art. 34 of the statute by lowering the numbers of members in the regional council from 61 to 50. See regione.veneto.it/Statuto for the official source.

The regional law 5/2012 regulates the regional election and modifies the national law 43/1995 by (i) replacing the blocked regional list with a majority prize; (ii) introducing gender quota on the number of candidate list with neither of the two genders be more than 50%; and (iii) alternating men and women in the electoral list. The regional law 19/2018 introduces further change by introducing the double preference if the second preference is a different gender from the first preference. See regione.veneto.it/Electoral for the official source.

APPENDIX C. Data

In this appendix, we describe the data sources, provide variable definitions and present summary statistics for the main variables.

Region-Level Gender Reforms

The main source of information is the Conference of Regions and Autonomous Provinces. We complement this source by collecting information on the legislative histories of gender laws, including contacting elections officials in each Italian region having an ordinary status (see, Appendix B for the official sources). For each region, we collected data on the election year and the year of enactment of the party-list gender quota and the double-gender preference system. The timing of gender reforms is reported in Table C1.

Region Election-Level Data

We obtained information on candidates and the number of valid votes per candidate for both the regional council and its presidency from the Ministry of the Interior (available at elezionistorico.interno.gov.it). This dataset includes information on candidates' full name, gender, party affiliation and the number of votes received. Data on council candidates for Apulia in 2005 and 2020 election years, Calabria in 2010, Marches in 2010 and 2020, Molise in 2018, and Liguria and Tuscany in 2020 are missing. For those regional election years, we retrieve information on candidates and the number of valid votes from each regional website. The Ministry of Interior also provides information on elected presidents and councillors (available at amministratori.interno.gov.it). The dataset includes information on elected's full name, gender, date of birth, education and occupation. The sample period is 1995-2020.

Variable Definition: A candidate is included in the sample if he/she is running in a given election year. *Female Council (or President) Candidate* is a dummy for whether the candidate is a woman. *Vote Share of Council (or President) Candidate* is the number of votes obtained by the candidate in a given regional election over the total number of votes in the same district and election. *Vote Share of Female Council (or President) Candidate* is the number of votes obtained by the female candidate in a given regional election over the total number of votes in the same district and election. *Party Lists* is the number of lists within a district in a given regional election. *Candidates per Party List* is the number of candidates belonging to a party list within a district in a given regional election. *Female Candidates per Party List* is the number of female

Table C1: The Timing of Gender Reforms in the Italian Regions

Region	Party-list Quota	Double-gender Preference	Election Year
Abruzzo	2013	2018	1995, 2000, 2005, 2008, 2014, 2019
Apulia	2005	2020	1995, 2000, 2005, 2010, 2015, 2020
Basilicata	2018	2018	1995, 2000, 2005, 2010, 2013, 2019
Calabria	–	–	1995, 2000, 2005, 2010, 2014, 2020
Campania	2009	2009	1995, 2000, 2005, 2010, 2015, 2020
Emilia-Romagna	2014	2014	1995, 2000, 2005, 2010, 2014, 2020
Latium	2005	2017	1995, 2000, 2005, 2010, 2013, 2018
Liguria	2020	2020	1995, 2000, 2005, 2010, 2015, 2020
Lombardy	2012	2017	1995, 2000, 2005, 2010, 2013, 2018
Marches	2004	2019	1995, 2000, 2005, 2010, 2015, 2020
Molise	2017	2017	1995, 2000, 2001, 2006, 2011, 2013, 2018
Piedmont	–	–	1995, 2000, 2005, 2010, 2014, 2019
Tuscany	2004	2014	1995, 2000, 2005, 2010, 2015, 2020
Umbria	2010	2015	1995, 2000, 2005, 2010, 2015, 2019
Veneto	2012	2018	1995, 2000, 2005, 2010, 2015, 2020

Note: The sample includes all 15 Italian regions having an ordinary status over the period 1995–2020.

candidates belonging to a party list within a district in a given regional election. 40% *Female Candidates per Party List* is the number of party lists with less than 40% of female candidates. *Party Lists for President Candidate* is the number of party lists supporting the same candidate for the presidency of the region in a given district and election. For both councilors and presidents, the variable *Female* is a dummy for whether

the elected candidate is a woman; the variable *Age* is the age of the elected candidate at the time of the election; the variable *Low Skilled Worker* is a dummy for whether the elected candidate is either not in the labor force, or unemployed or employed in a low skilled profession; the variable *Educational Attainment* is a categorical variable that takes 5 values (1=primary education, 2=lower secondary education, 3=upper secondary education, 4=undergraduate degree, 5=postgraduate degree); the variable *Incumbent* is a dummy for whether a candidate has been elected in the previous election in the same region. *Ideology* describes the political color of the president and is a categorical variable that takes 4 values (1=center, 2=independent, 3=left, 4=right). *Gender Bias* is the log gender earning gaps in the private sector in the years 2014-2019. The residualized variable is adjusted by education, occupation, and economic activity at the province level.

Descriptive Statistics: Table C.2 reports the summary statistics. The full sample contains a stacked cross-section of 53,040 candidates for the regional council and 462 candidates for its presidency spanning across 89 regional elections from 1995 to 2020, that is, over a mean of 6 elections per region. Women account for 32.3% of the total councilor candidates and for 15.4% of the total presidential candidates. On average, the vote shares of each council candidate and each president candidate are respectively 0.9% and 19.7% of total ballots. As for female candidates, the corresponding rates are 0.5% and 16%. Within a province per election-year, there are on average approximately 16 party lists with a mean of about 13 candidates per list, of which about 5 are female. The share of party lists with less than 40% of women is 13.2% and the number of party lists supporting the same president is around 6. Among 3,788 elected councilors, the share of female councilors is 14.7% and the average age is 47.6 years old. Average educational attainment of councilors is between upper secondary and undergraduate-degree level, and about 36% of them are either unemployed or do not participate in the labor force or employed as low skilled workers. Among elected councilors, 27% have been elected also in previous elections and 56% belong to the left party. Among 89 elected presidents of the regional councils, the share of female presidents is 6.7%, the average age is 52.7 years old, the average educational attainment is between upper secondary and undergraduate-degree level, the share of those not employed as high skilled workers is 25%, and the share of presidents affiliated to the left party is 55%. Ultimately, female employees working in the private sector within a given province earn, on average, a logarithmic wage that is 8.7 percentage points lower than their male counterparts.

Table C2: Summary Statistics - Region Election-Level Data

	Obs.	Mean	Std. dev.	Min.	Max.
Candidates Characteristics					
Council Candidate	53,040	221.789	189.291	7	826
Female Council Candidate	53,040	0.323	0.468	0	1
Vote Share of Council Candidate	53,040	0.009	0.024	0	0.646
Vote Share of Female Council Candidate	17,152	0.005	0.016	0	0.373
President Candidate	462	5.758	2.061	2	12
Female President Candidate	462	0.154	0.361	0	1
Vote Share of President Candidate	462	0.197	0.214	0	0.768
Vote Share of Female President Candidate	71	0.160	0.202	0	0.719
Province List Characteristics					
Party List	53,040	16.468	4.307	7	29
Candidates per Party List	53,040	12.94	9.466	1	41
Female Candidates per Party List	53,040	5.333	4.292	1	20
40% Female Candidates per Party List	53,040	0.132	0.339	0	1
Party Lists for President Candidate	53,033	6.043	3.355	1	15
Elected Characteristics					
Councilor	3,788	48.911	15.735	1	85
Female Councilor	3,788	0.147	0.354	0	1
Age of Councilor	3,788	47.621	9.080	18	75
Low Skilled Worker	3,788	0.363	0.231	0	1
Educational Attainment of Councilor	3,687	3.547	0.592	1	5
Incumbent Councilor	3,788	0.272	0.445	0	1
Ideology	3,709	2.965	.945	1	4
Female President	89	0.067	0.252	0	1
Age of President	89	52.685	7.667	31	71
Low Skilled Worker	89	0.247	0.434	0	1
Educational Attainment of President	84	3.762	0.456	2	4
Incumbent President	89	0.303	0.462	0	1
Ideology	84	3.340	0.640	1	4
Socioeconomic Variables					
Gender Bias	106	0.087	0.027	0.041	0.160
Gender Bias (residualized)	106	0.000	0.020	-0.044	0.046

Note: The full sample contains a stacked cross-section of candidates within a province running for regional elections either as council or president of the regional council. Data on council candidates for Tuscany in 2005 and 2010 election years are missing since the region initially opted for a system of closed lists, in which council candidates within a province were elected according to their position on the party list.