When Women Take All:
Direct Election and Female Leadership[*]

Davide Cipullo[†]

This version: January 13, 2023

Abstract

This paper investigates how direct election regimes (*à la* presidential democracy) affect the selection of women into political offices compared to indirect appointment (*à la* parliamentary). Exploiting the staggered phase-in across Italian municipalities of a reform to the local institutional regime, I find that the introduction of direct elections increased the fraction of female mayors substantially. The results are stronger in cities with a high pre-reform share of female politicians and driven by high-quality female officials replacing undereducated incumbents. Taken together, the results of this paper inform that direct election regimes ease the selection of competent politicians into office.

JEL Classification: C24, D02, D72, J16
Keywords: Political selection, Voting systems, Gender gaps, Female representation

1   Introduction

The share of women sitting in national Parliaments or in national governments has increased in the last years but was still around 25 percent in 2020 (Union, 2020). Several countries have introduced active policies to encourage women's representation, including gender quotas in national and local Parliament and incentives to cast a preference vote in support of a woman. Gender quotas have been shown to affect both the gender composition and the overall quality of politicians since newly-elected female representatives tend to replace loyal, yet low-quality, male incumbents (Besley et al., 2017).[1]

Gender gaps are even wider among political leaders. According to the August 2021 issue of the REIGN database on political leaders, only 12 of 193 leaders worldwide were women at the time. Moreover, 140 countries never experienced a government run by a woman. Active policies aimed at increasing the proportion of female leaders are unfeasible since one individual at a time is selected as the leader and limitations to voter choice based on gender would arguably be unethical. Nevertheless, other characteristics of the institutional regime may either favor the persistence in office of politicians loyal to the party bureaucracy or, conversely, encourage the replacement of underqualified candidates by newcomers.

In this paper, I investigate the impact of introducing a direct election scheme for political leaders on the probability of selecting a female candidate. The empirical analysis exploits a reform to the election regime of mayors in Italian municipalities, appointed by the municipal council before 1993 and directly elected by voters since 1993. I take advantage of the staggered phase-in of the reform – due to municipalities historically holding elections in different years – to employ a Difference-in-Differences design and compare early-treated municipalities with not-yet-treated municipalities.

Before the reform, Italian municipalities were similar to small parliamentary democracies in many respects. At the time of an election, voters used to elect members of the municipality council who, in turn, appointed one of them as the mayor. Since 1993, mayors are directly elected by voters: in small municipalities, the most voted candidate is elected; in large municipalities, if none of the candidates surpasses 50 percent of valid votes, the mayor is elected in a runoff taking place two weeks later.

I find that the introduction of the direct election scheme increased substantially the proportion of municipalities in which a woman was selected as the new mayor. Specifically,

---

[1]Moreover, electoral institutions may shape the gender composition of legislative bodies. Specifically, proportional representation (PR) systems are associated with a larger share of elected women than majoritarian (MA) rules (Profeta and Woodhouse, 2021). Under PR systems, the vote is usually over party lists rather than on individual candidates; districts are larger than under majoritarian rules and multi-members; parties are more likely to make candidacy decisions at the central level. In turn, the personal characteristics of candidates matter less under PR than under MA and parties can assign safe seats to women (Gonzalez-Eiras and Sanz, 2021; Le Barbanchon and Sauvagnat, 2021). See Profeta and Woodhouse (2021) for a comprehensive literature review.

the reform increased the proportion of female mayors by 2.5 percentage points. Taking into account that only 3.5 percent of incumbent mayors before the introduction of the reform were women, the results imply that direct election caused a very sizeable increase in the share of female mayors in Italy.

Direct election regimes – akin to presidential democracies – allow voters to choose among alternative individual candidates and to compare their individual characteristics and expected performances on top of their ideological standpoints and policy platforms. On the contrary, under an indirect election regime voters select their preferred party and the frontrunner of the most voted party is not necessarily appointed to lead the government after the election or might be unseated and replaced during the term.[2] In turn, direct election encourages the selection of leaders endowed with characteristics that voters deem valuable. Indirect appointment, instead, encourages the selection of leaders endowed with characteristics that other politicians deem valuable.

If voters care about a prospect leader's competence more than other politicians do – for instance, fellow politicians may also value loyalty (Besley et al., 2017) to the party or the coalition partners – then direct election regimes will encourage the selection of higher quality politicians into office, compared to indirect election regimes. Since politics is, and used to be, an heavily male-dominated profession, high-loyalty politicians were disproportionately men. On the other hand, high-quality politicians that are selected into office under a direct election regime can be either men or women, depending on the gender composition of potential candidates. If no women are involved in politics, then a direct election regime will trigger a substitution between high-competence and high-quality male politicians. Instead, if the gender composition of prospect candidates is gender-balanced, then a direct election regime will cause a replacement between high-loyalty male politicians and high-quality male or female politicians.

The former arguments summarize two key testable mechanisms that find strong empirical support in the data. First, the results are substantially stronger in municipalities where relatively more women were serving in the municipality council before the reform – and hence, the pool of female potential mayoral candidates was larger. More specifically, the causal effect of the reform on the probability of electing a female mayor is one percentage point and statistically insignificant in municipalities were no women were

---

[2]Examples of prime ministers in parliamentary democracies who were not the winning party's frontrunner at the time of the previous election abound. For instance, Italy experienced seven consecutive governments between 2011 and 2022 (Monti, Letta, Renzi, Gentiloni, Conte I, Conte II, and Draghi) led by prime ministers who were not their party's leader in the previous election. Similarly, in the United Kingdom, prime ministers May, Truss, and Sunak were not leaders of the Conservative party at the election before their appointment as prime ministers. This possibility may arise in three main situations: first, when the members of the winning party agree to appoint as the head of government someone who is not the party leader (the norm in post WWII Italy); second, when the members of the winning party replace the party leader after the election or at a later point during the term (e.g., Renzi, May, Truss, and Sunak); third, when coalition partners influence the ex-post selection of the head of government (e.g., Monti, Letta, Gentiloni, Conte I and II, Draghi).

serving in the municipality council before the reform. Among municipalities were at least a woman was serving in the municipality council before the reform, the reform increased the proportion of female leaders by 2.5 percentage points in the most gender-unbalanced quartile of municipalities while it increased the proportion of female leaders by 5 percentage points in the most gender-balanced quartile. Second, I document that female mayors elected after the reform mainly replaced incumbents lacking higher education and that the reform led to an increase in the proportion of both highly educated female mayors and highly educated male mayors. Instead, the reform reduced the proportion of male mayors without an high school diploma by 6 percentage points.[3]

The results of this paper contribute to several areas of research. First, to the best of my knowledge, this paper is the first to compare the two most-widely implemented constitutional regimes in democratic contexts in a quasi-experimental setting. Previous evidence on the comparison between parliamentary and presidential democracies relied on theoretical (e.g., Persson, 2002) or cross-country (e.g., Persson and Tabellini, 2003) approaches. Moreover, the results presented in this paper shed light on the possibility that presidential democracies are associated to a responsible fiscal policy also because they are more likely to promote high-quality politicians as leaders.[4] Second, this paper provides novel evidence on how the voting system can influence the gender of elected officials. Existing research focuses on the impact of voting systems designed for the selection of members of legislative bodies (Gonzalez-Eiras and Sanz, 2021; Le Barbanchon and Sauvagnat, 2021; Profeta and Woodhouse, 2021). This paper instead provides evidence on how the election scheme to select political leaders – where active policies are not feasible – impacts the probability of selecting a female candidate. Third, this paper contributes to the growing literature that documents that increasing the proportion of female politicians induce an overall better political selection (e.g., Baltrunaite et al., 2014; Besley et al., 2017).

2   Background

Italy has been a parliamentary Republic since the end of World War II. The territory is divided into three subnational administrative levels (Regions, Provinces, and Municipalities), which were all exposed to parliamentary forms of government and proportional voting systems until the early nineties. Then, a number of reforms implemented between 1993 and 1995 modified the voting rule for the national Parliament from a proportional

---

[3]The share of female mayors without an high school diploma was instead not affected since virtually none of them was in office before the reform and virtually none of them was selected after the reform.

[4]Persson and Tabellini (2003) finds that presidential democracies have smaller public sectors than parliamentary democracies and that presidential democracies are more likely to increase spending during economic downturns and reduce spending in booms. Meriläinen (2022) finds that electing more competent political leaders increases fiscal sustainability.

system to a prevalently majoritarian system and introduced a presidential system featuring the direct election of executive officers at all sub-national levels.

The focus of this paper is on the reform of the municipalities' voting regime. Before the reform, voters used to elect the members of the municipality council who, in turn, elected the mayor among its members. At any time, the council had the power to unseat the incumbent mayor via a vote of no confidence and try to form a new majority for the remaining part of the term. Ordinary terms lasted five years and mayors were not term-limited. Regular terms lasted five years, although early terminations were admitted by the law and were relatively common.

Since 1993, mayors are directly elected under majoritarian rules, and a large majority premium of seats in the council is assigned to the elected mayor's coalition to improve the stability of local governments.[5] The voting system reform also introduced gender quotas in all municipalities having less than 15,000 residents. More specifically, each party was required to have at least one-third of women candidates in its list of candidates for the municipality council. Italy's supreme court later abolished this portion of the reform in 1995 due to constitutional concerns.[6]

Municipalities vote on different dates for a combination of historical and political reasons. First, on the occasion of the first municipal elections after the end of WWII in 1946, several areas of the country were still devastated at the time of the vote, and the central government allowed municipalities to vote on different dates between March and late autumn. The majority of municipalities voted on five different dates during spring 1946, and more than 1,000 voted on eight dates during the autumn (Ballini, 2010). Second, during the post-war decades, successful votes of no confidence or other causes of anticipated end of term were relatively common. The combination of these two factors lead to a large variation in the timing of elections: as shown in Figure A.1, only 17% of municipalities voted in the same year as the implementation of the 1993 voting reform, while the first vote under the new regime took place in subsequent years in the remaining municipalities.

---

[5]The reform also assigned to mayors the faculty of dismissing members of the executive office, required the anticipated end of the term and new elections for the council and the mayor in the cases of the resignation of the mayor or a vote of no confidence against her; reduced the length of the term from five to four years; introduced a term limit of two consecutive terms for mayors, not applying backward. The introduction of the term limit did not prevent mayors who have been in office before the reform to run. Consider the example of a mayor elected in 1983, and confirmed in 1988. According to the law, she had the right to run for office in 1993 and 1997 but, in the case of two victories, not in 2002. The term length has been subsequently restored to five years starting from elections held in 1999.

[6]Baltrunaite et al. (2014) exploit the unexpected abolition of gender quotas to estimate that quotas increased the quality of elected politicians.

3   Data and Empirical Strategy

The main data source is the individual-level register of the universe of politicians holding any office at the municipality level, compiled yearly since 1986 by the Italian Ministry for Internal Affairs (*Anagrafe degli Amministratori Locali*). The dataset reports politicians' characteristics as gender, education, employment status and category, date, and place of birth, as well as the description of the office, the party affiliation, and the election and nomination dates.

I restrict the sample to politicians who serve as the mayor in municipalities belonging to the fifteen ordinary regions, as the so-called *special regions* (*Friuli-Venezia Giulia, Sardegna, Sicilia, Trentino-Alto Adige* and *Valle d'Aosta*) are guaranteed the autonomy to determine a different electoral system for their municipalities. Overall, I have information from 22,171 unique mayors serving in 6,322 municipalities between 1986 and 2008 for a total of more than 137,700 municipality-year observations.[7]

The staggered phase-in of the reform around its implementation in 1993 – due to municipalities voting at different points in time also prior to the reform – generates a plausibly exogenous variation in the timing of exposition across municipalities. Consider, as an example, a municipality holding elections in 1992 and 1997, and a municipality holding elections in 1993 and 1998. In the former municipality, the incumbent mayor was subject to the old voting system until 1996, while in the latter municipality, the mayor in power in 1993 was already elected based on the new regime.

Under the assumption that municipalities exposed to the reform in different years would have evolved following parallel trends in its absence, a difference-in-differences model of the form

$$FemaleMayor_{i,t} = \eta_i + \delta_t + \beta PostReform_{i,t} + u_{i,t}, \tag{1}$$

identifies the causal effect of the voting reform on the probability that the elected mayor is a woman.

In equation (1), the dependent variable is an indicator equal to 1 if the mayor in power in municipality i during the year t is a woman and 0 otherwise, η_i represents the municipality fixed effects, δ_t represents the year fixed effect and $PostReform_{i,t}$ is an indicator equal to 1 if the latest election in municipality i took place after the implementation of the 1993 reform.

The setup is intuitively appealing but deserves a careful discussion on the threats to the validity of the parallel trends assumption and the empirical design.

---

[7]Using municipality-year observations instead of municipality-term is preferable for two reasons. First, this approach allows to exploit the variabiation induced by the opportunity of unseating and replacing the incumbent mayor that was present before the 1993 reform and is a key feature of parliamentary forms of government. Second, this approach allows to control for time dummies.

First, government stability, which in turn affects the timing of elections, is potentially endogenous to the voting system (Bordignon et al., 2016; Carozzi et al., 2022) and the selection of candidates (Gagliarducci and Paserman, 2012).[8] For instance, incumbent mayors elected under the old rule might have advocated for early elections under the newly introduced presidential system to secure a more stable power. Conversely, members of the municipality council might have unseated the incumbent mayor just before the phase-in of the reform to secure another term subject to the parliamentary regime.

I use an instrumental variables approach similar to the one applied by Repetto (2018) to deal with the potential endogeneity in the timing of elections. As documented in Figure A.1, the year of the previous election is a very strong predictor of the year in which the subsequent election is going to take place due to the 5-year regular term length. For instance, a municipality voting in 1987 or 1989 has a significantly lower probability of holding the next election in 1993 than a municipality voting in 1988. Formally, I instrument $PostReform_{i,t}$ with its five years, or one term, lagged counterpart $\mathbb{1}(ElYear_{i,t-5} \geq 1988)$, determined before the reform and the beginning of the parliamentary discussion about it. In turn, the compliers in year t are the municipalities subject to the reform in the same year and in which the previous election took place in year $t-5$.

I estimate the following Difference-in-Differences regression using 2SLS:

$$FemaleMayor_{i,t} = \eta_i + \delta_t + \beta \widehat{PostReform}_{i,t} + v_{i,t}, \tag{2}$$

where

$$PostReform_{i,t} = \eta_i + \delta_t + \phi \mathbb{1}(ElYear_{i,t-5} \geq 1988) + \epsilon_{i,t}. \tag{3}$$

The coefficient of interest is β, which identifies the causal effect of the voting reform on the probability that the mayor holding office in municipality i during the year t is a woman.

Second, it is necessary to take into consideration that the proportion of women that are selected as mayors is constantly increasing over time (Cipullo, 2021). This might, in principle, result in a higher chance of selecting female candidates in municipalities voting at later dates, even in the absence of any voting reforms. If we consider again the example of a comparison between municipalities voting in 1992 under the old system and those voting in 1993, then equation (1) is comparing municipalities that differ not only because of the implementation of the reform but also because of holding elections at different

---

[8]Carozzi et al. (2022) find in Spanish municipalities that, in the presence of indirect election of mayors, an increase in the number of parties entering the municipality council reduces the stability of incumbent governments while Bordignon et al. (2016) document that the number of parties admitted to the municipality council is endogenous to the voting system. Gagliarducci and Paserman (2012) find in Italian municipalities that, under a direct election scheme, female mayors are more likely to be unseated via a vote of no-confidence than male mayors.

years. To ensure that the empirical results capture the effect of the reform rather than the increasing trends in the proportion of female mayors, I show the empirical results also controlling for linear time trends specific to each cohort of municipalities. Furthermore, I propose a specification in which I add several time-varying municipality characteristics and pre-reform characteristics interacted with time trends.

To further ensure that the parallel trends assumption likely holds in this context, I also show the results from estimating dynamic models of the form:

$$FemaleMayor_{i,t} = \eta_i + \delta_t + \sum_{k \in [-5,5], k \neq -1} \alpha_k \mathbb{1}(ElYear_{i,t} - 1993 = k) + \varepsilon_{i,t}, \qquad (4)$$

and

$$FemaleMayor_{i,t} = \eta_i + \delta_t + \sum_{k \in [-5,5], k \neq -1} \alpha_k \mathbb{1}(ElYear_{i,t-5} - 1988 = k) + \varepsilon_{i,t}. \qquad (5)$$

The validity of the empirical design would be reassured if the coefficients α_k are undistinguishable from zero for all $k < 0$.

Lastly, recent research has shown that estimating Difference-in-Differences models using a two-way fixed effects model as in the equations specified above might result in biased estimates of the average treatment effect on the treated when different units are treated at different points in time (e.g., Callaway and Sant'Anna, 2021; De Chaisemartin and d'Haultfoeuille, 2020; Goodman-Bacon, 2021). To ensure the results of this paper are robust, I also estimate the empirical model using the estimator proposed by Sant'Anna and Zhao (2020) and Callaway and Sant'Anna (2021), as well as the estimator proposed by De Chaisemartin and d'Haultfoeuille (2020).

4 Results

Table 1 reports the estimated impact of the introduction of a direct election regime on the probability of selecting a female mayor. I show the coefficients obtained both using OLS as in equation (1) and 2SLS as in equations (2) and (3). Across all specifications, the results document that the introduction of the direct election of mayors increased the probability of selecting a female candidate by 1.5–3.5 percentage points. The coefficients are sizeable in magnitude and very precisely estimated: taking into consideration that a woman was the mayor only in 3.5 percent of municipalities before the reform, the results imply that the reform increased the proportion of female mayors by 40–100 percent, depending on the specification.

Table 1 also shows that the estimates are robust to the introduction of cohort-specific

Table 1: Direct election of leaders and proportion of female mayors

|	OLS			2SLS		
	(1)	(2)	(3)	(4)	(5)	(6)
	Female Mayor	Female Mayor	Female Mayor	Female Mayor	Female Mayor	Female Mayor
Post Reform	0.019***	0.015***	0.015***	0.035***	0.024***	0.024***
	(0.006)	(0.005)	(0.005)	(0.009)	(0.007)	(0.007)
Observations	137,718	137,718	137,718	137,718	137,718	137,718
R^2	0.345	0.346	0.348	0.000	0.000	0.004
Year Effects	✓	✓	✓	✓	✓	✓
Municipality Fixed Effects	✓	✓	✓	✓	✓	✓
Cohort × linear trends		✓	✓		✓	✓
Time-varying covs			✓			✓
Pre-determined covs × Year			✓			✓
Control mean	0.0350	0.0350	0.0350	0.0350	0.0350	0.0350
First-stage F				3553	6180	6180

Notes: In column (1), the estimated equation is (1). Column (2) augments the specification in column (1) with linear trends specific to each cohort of municipalities. Column (3) augments the specification in column (2) with controls for each municipality's surface, population density, gender differences in educational attainment, population, sex ratio, female occupation rate, pre-reform share of women in the municipality council interacted with time trends, education level of the pre-reform incumbent mayor interacted with time trends, and vote share of the main parties in 1992 national elections interacted with time trends. In column (4), the estimated equations are (2) and (3), using 2SLS. Column (5) augments the specification in column (4) with linear trends specific to each cohort of municipalities. Column (6) augments the specification in column (5) with controls for each municipality's surface, population density, gender differences in educational attainment, population, sex ratio, female occupation rate, pre-reform share of women in the municipality council interacted with time trends, education level of the pre-reform incumbent mayor interacted with time trends, and vote share of the main parties in 1992 national elections interacted with time trends. Standard errors robust to clustering at the municipality level are in parentheses. *,**,*** represent the 10%, 5%, 1% significance levels.

linear time trends and additional covariates interacted with time. Indeed, the coefficients estimated in columns (1), (2), and (3) and the coefficients estimated in columns (4), (5), and (6) lie within each other's confidence intervals, respectively. Nevertheless, the specifications in columns (2) and (5) appear to be more conservative than the specifications in (1) and (4) and therefore the analysis conducted in the rest of the paper will rely on the same specifications as in columns (2) and (5). On the other hand, accounting for the possible endogeneity in the timing of exposure to the reform by using 2SLS increases the estimates. This suggests that some male incumbent mayors advocated for early elections just before the reform to secure re-election under the new scheme.

Table B.2 in the Online Appendix reports the first-stage and reduced-form relationship associated with columns (4) – (6) of Table 1. The first-stage has a very high statistical power (the F-statistic exceeds 3,000), confirming that the year of the previous election is a very strong, albeit not perfect, predictor of the year in which the subsequent election will occur. Indeed, the first-stage coefficient indicates that being predicted to hold the
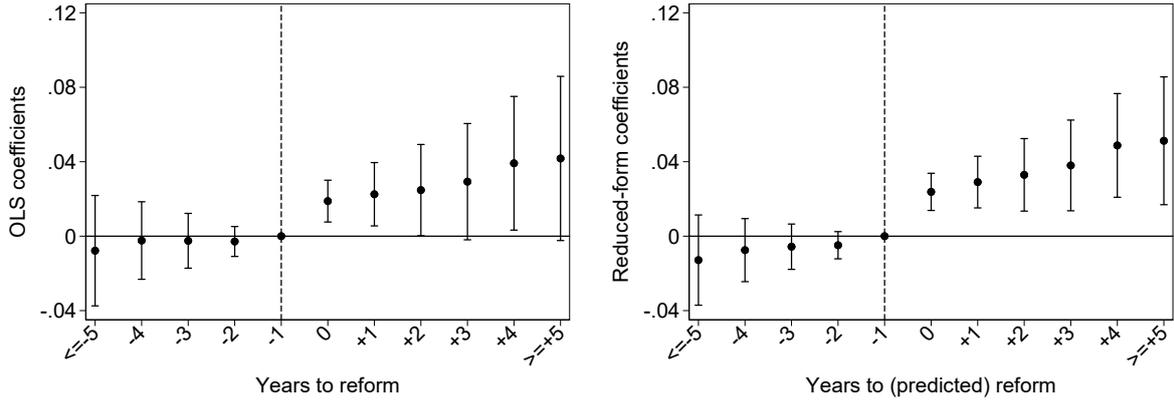
(a) Dynamic specifications
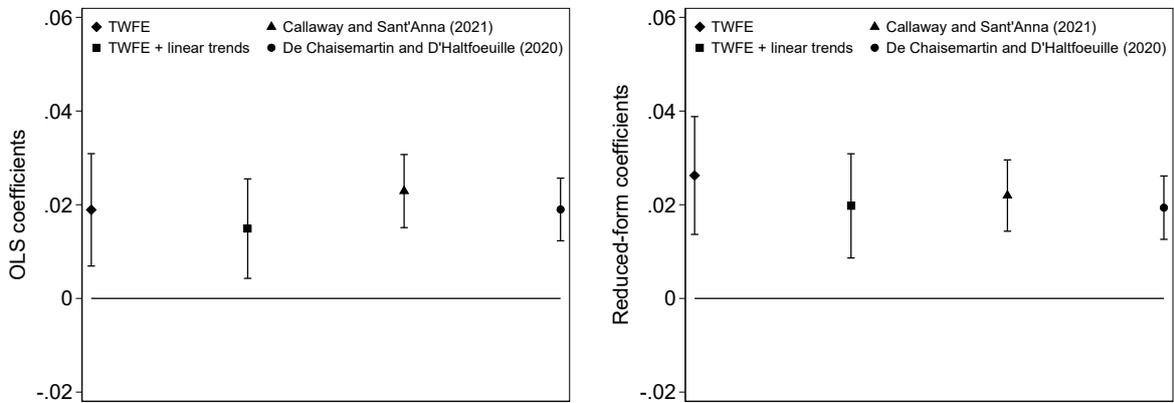
(b) Alternative Difference-in-Differences estimators

Figure 1: Dynamic specifications and alternative estimators

Notes: Panel (a) reports the results from estimating equations (4) and (5), respectively. Panel (b) plots the results from estimating the analogous of the OLS cofficients reported in Table 1, columns (1) and (2) and the reduced-form coefficient reported in Table B.2, columns (4) and (5) using the estimator proposed by Callaway and Sant'Anna (2021) and Sant'Anna and Zhao (2020), and the estimator proposed by De Chaisemartin and d'Haultfoeuille (2020). 95% confidence intervals are based on standard errors robust to clustering at the municipality level.

next election after the reform increases the chances of being effectively subject to the reform by approximately 75–80 percentage points.

Figure 1 confirms the overall credibility of the estimates. On the one hand, in panel (a) I estimate the OLS model in equation (4) and the reduced-form model in equation (5). The results strongly suggests that, absent the voting system reform, the probability of selecting female mayors in municipalities treated at different points in time would have evolved following parallel trends. All estimated coefficients relative to the years preceding the (predicted) reform introduction are small and not significantly different from zero at conventional levels; on the contrary, coefficients estimated after the introduction of the reform are sizeable and consistently significant at the 5% level. On the other hand,

in panel (b) I show the results obtained by using alternative Difference-in-Differences estimators that account for the issues of TWFE regressions discussed in Section 3. The results indicate that TWFE estimators perform adequately in this context since the estimated coefficients are virtually equivalent across a variety of estimators.

In the Online Appendix, I address several empirical concerns. First, in Figure A.2, I perform a placebo test in which I assume a reform took place every year between 1990 and 2000. The estimated coefficients are never statistically different from zero for placebo reforms while the only positive and statistically significant coefficient is estimated in connection with the actual reform. Second, in Table B.3, I document that the results are present and, if anything, larger in municipalities having more than 15,000 residents, for whom the voting reform in 1993 did not introduce gender quotas for the election of members of the municipality council. Third, in Table B.4, I show that the results are not confounded by the concurrent introduction of a municipal property tax which has been previously shown to have an impact on political selection (Bordignon et al., 2020).[9] Lastly, in Table B.5, I show that the results are not confounded by the quasi-concurrent dissolution of Italy's largest parties.[10]

5   Mechanisms

Besley et al. (2017) document that the introduction of a gender quota in Sweden increased the proportion of female candidates and elected officials, who entered office at the expense of low-quality male politicians. The results in Besley et al. (2017) rely on a form of the trade-off between competence and loyalty (e.g. Egorov and Sonin, 2011; Zakharov, 2016). Namely, selecting competent politicians increases the chances of election success at the expenses of loyalty to the party structure.

In this section, I explore whether a similar conjecture is consistent with the transition

---

[9]The introduction of the municipal property tax ICI should not affect the estimates since it was introduced in 1993 throughout the country. Nevertheless, in Table B.4, I augment the specification with controls for predictors of each municipality's exposure to the newly-introduced local property tax used in the literature (Bianchi et al., 2021; Bordignon et al., 2020) interacted with time dummies. Specifically, I add controls for i) the pre-reform transfers received by the municipality, ii) the share of buildings constructed before WWII, iii) the provincial GDP in 1992, and iv) the revenues from a temporary property tax levied in 1992, all interacted with time dummies.

[10]Three of the main parties who used to have government responsibilities at the national or at the local level in post-World War II Italy dissoluted after the end of the Soviet Union and a major corruption scandal that hit many political leaders at the national level in yearly nineties. Daniele et al. (2020) estimate that mayors belonging to parties hit by the corruption scandal were more likely to be unseated and replaced than mayors belonging to other parties. The dissolution of the major parties should not affect the estimates since none of the parties was dissolved exactly at the same time of the voting system reform (i.e., after the 1992 local election and before the 1993 local election). Nevertheless, in Table B.5, I interact the model with an indicator equal to 1 if the incumbent mayor in 1992 was a member of the Christian Democrats (DC), the Communist Party (PCI), or the Socialist Party (PSI), respectively, to reassure that the results are not driven by the replacement of incumbent mayors that used to belong to parties that were dissolved during their period in office.

from an indirect election regime to a direct election regime. On the one hand, direct elections shift the focus of the electoral competition from party labels to individual candidates. On the other hand, direct elections avoid that a candidate different from the winner party's frontrunner is appointed to form a government when parties bargain after the election. In turn, introducing direct election should increase the demand for competent leaders relative to high-loyalty leaders. This would induce a substitution between high-loyalty male incumbents and high-competence male or female newcomers.

5.1 Heterogeneity by the pre-reform share of female politicians

First, in Figure 2, I exploit heterogeneity across municipalities in the pre-reform share of women who were serving as a member of the municipality council. Mayors are the apical position of the political administration in Italian municipalities, and the main parties usually select their candidates among the incumbent members of the municipality council.[11] On the one hand, members of the municipality council already received a sizeable number of individual preference votes in the previous elections. On the other hand, incumbent councilors are more experienced than outsider candidates and have had the chance of showing their worth to party colleagues and voters during the term.

In panel (a) of Figure 2, I compare municipalities where at least one woman was serving as a member of the municipality council before the reform and municipalities where only men used to serve in the municipality council. The results show that the introduction of a direct election regime increased the proportion of female elected officials especially in municipalities where at least one woman was a member of the municipality council before the reform. The results of this exercise document that the reform lead to the election of female mayors mainly in municipalities where there existed a pool of female potential candidates that party and voters could select from. In municipalities where, instead, no women were active in the political arena, the reform did not lead to any statistically significant increase in the proportion of female mayors.

In panel (b) of Figure 2, I further explore this mechanism by comparing, among municipalities where at least one woman was serving as a member of the council before the reform, municipalities where the pool of councilors was relatively more gender-unbalanced and municipalities where the pool of councilors was relatively more gender-balanced. Specifically, I interact the baseline regression models with a set of three indicators that measure the proportion of female members of municipality councils before the reform.

---

[11]Franzoni (2023) documents that 82 percent of elected mayors used to be part of the administration prior to their election.
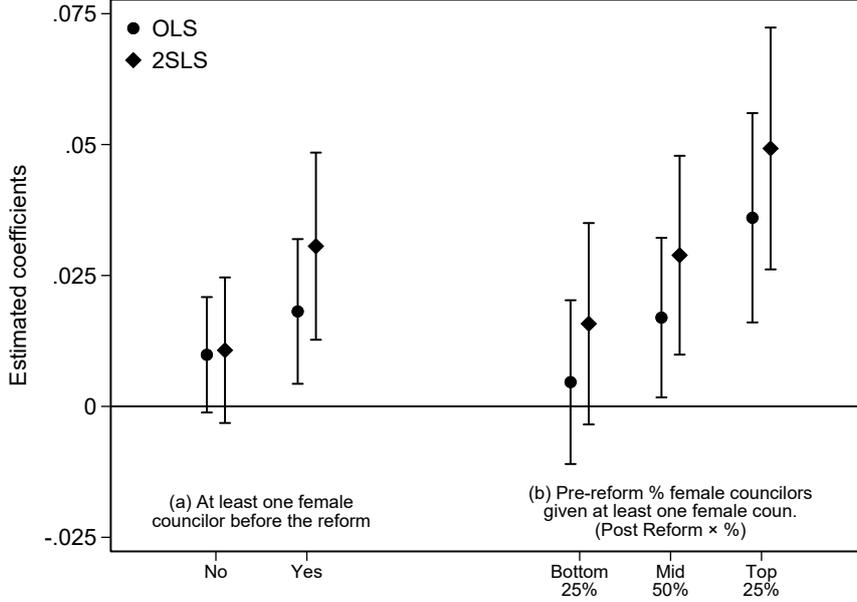
Figure 2: Heterogeneous effects by pre-reform share of women in municipality council

Notes: Panel (a): coefficients and confidence intervals are obtained by estimating the OLS model in equation (1) and the 2SLS model in equations (2) and (3) in the subsamples of municipalities where, before the reform, i) no women were serving as a member of the municipality council and ii) at least one woman was serving as a member of the municipality council. Panel (b): coefficients and confidence intervals are obtained by estimating the model in equations (6) using OLS and 2SLS, respectively. The specifications include linear time trends specific to each cohort of municipalities as in columns (2) and (5) of Table 1. Circle markers represent OLS estimates while diamond markers represent 2SLS estimates. 95% confidence intervals are based on standard errors robust to clustering at the municipality level.

Formally, I estimate

$$FemaleMayor_{i,t} = \eta_i + \delta_t + \sum_{k \in [1,3]} \alpha_k PostReform_{i,t} \times \mathbb{1}(FemaleCouncil_{i,1992} = k) + \varepsilon_{i,t},$$

(6)

where $\mathbb{1}(FemaleCouncil_{i,1992} = 1)$ for municipalities in the bottom 25 percent of pre-reform female representation in the council, $\mathbb{1}(FemaleCouncil_{i,1992} = 2)$ for municipalities in the middle 50 percent of the distribution of pre-reform female representation, and $\mathbb{1}(FemaleCouncil_{i,1992} = 3)$ for municipalities in the top quartile of pre-reform female representation. The results presented in panel (b) of Figure 2 document that the reform increased the proportion of female mayors significantly more in municipalities where the supply of female potential candidates was the largest than in the other municipalities. Specifically, the results show that the reform had a small and statistically insignificant impact in municipalities belonging to the bottom 25 percent, while it increased the probability of selecting a female mayor by 2.5 percentage points in municipalities in the middle part of the distribution and by approximately double as much in municipalities in the
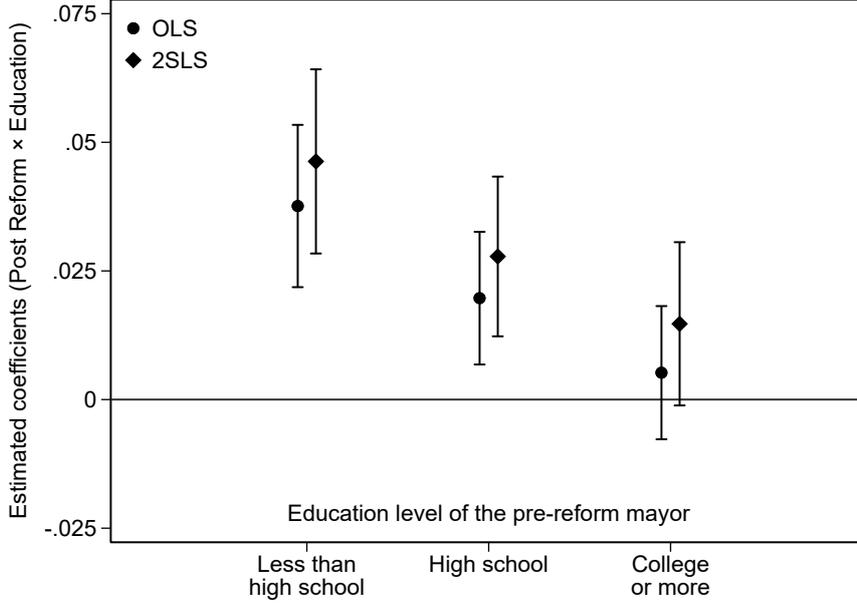
13

Figure 3: Heterogeneous effects by pre-reform incumbent mayor's education level

Notes: Coefficients and confidence intervals are obtained by estimating the model in equations (6) using OLS and 2SLS, respectively. The specifications include linear time trends specific to each cohort of municipalities as in columns (2) and (5) of Table 1. Circle markers represent OLS estimates while diamond markers represent 2SLS estimates. 95% confidence intervals are based on standard errors robust to clustering at the municipality level.

top quartile.

5.2   Female mayors only replace uneducated incumbents

Second, in Figure 3, I exploit heterogeneity across municipalities in the pre-reform educational levels of mayors. Formally, I estimate using OLS and 2SLS

$$FemaleMayor_{i,t} = \eta_i + \delta_t + \sum_{k\in[1,3]} \alpha_k PostReform_{i,t} \times \mathbb{1}(Education_{i,1992} = k) + \varepsilon_{i,t},$$

(7)

where $\mathbb{1}(Education_{i,1992} = 1)$ takes the value 1 in municipalities where the pre-reform incumbent mayor did not complete high school education (and zero otherwise), $\mathbb{1}(Education_{i,1992} = 2)$ takes the value 1 if the pre-reform incumbent used to have an high school diploma as the highest education degree, and $\mathbb{1}(Education_{i,1992} = 3)$ takes the value 1 if the pre-reform incumbent mayor used to hold at least a college degree.

Education level can be interpreted as a proxy for the mayor's productivity in office and of voters' perceptions of her ability. In turn, the effect of the direct election on the probability of electing a female mayor should be stronger in localities where the incumbent
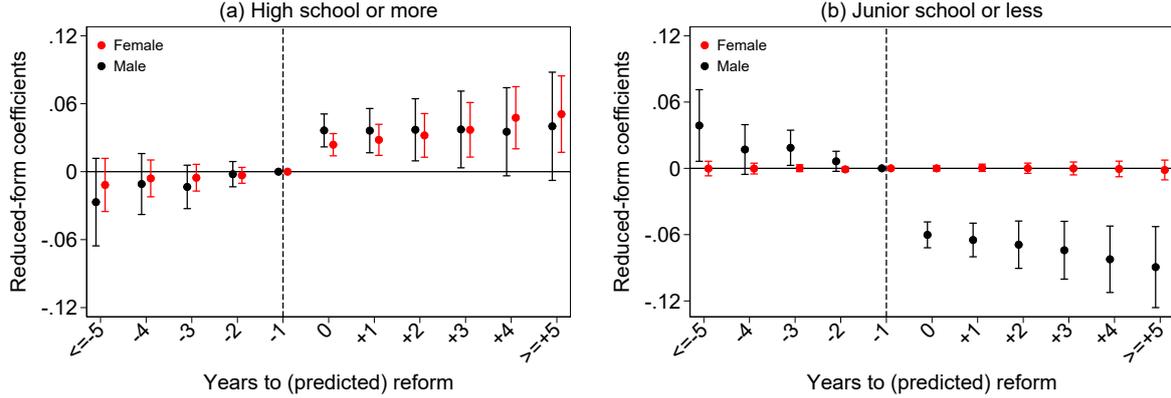
14

Figure 4: Direct election of leaders and education level of male and female mayors

Notes: This figure reports the results from estimating equation (5) using as dependent variable an indicator equal to 1 if the mayor is a female politician who hold at least an high school diploma (panel (a), red markers); an indicator equal to 1 if the mayor is a male politician who hold at least an high school diploma (panel (a), black markers); an indicator equal to 1 if the mayor is a female politician who neither holds an high school diploma nor a college degree (panel (b), red markers); an indicator equal to 1 if the mayor is a male politician who neither holds an high school diploma nor a college degree (panel (b), black markers). 95% confidence intervals are based on standard errors robust to clustering at the municipality level.

is of mediocre quality than in localities where parties used to select a high-quality mayor also before the reform.

The results presented in Figure 3 are consistent with this conjecture. The voting system reform has a small and statistically insignificant effect on the probability of electing a female mayor in municipalities where the incumbent mayor in 1992 used to hold a college degree. Conversely, the treatment effect of the reform is driven by municipalities in which, before the reform, a mayor without a college degree was in office. More specifically, in municipalities where the pre-reform incumbent used to hold a high-school diploma as the highest educational achievement, direct elections increased the probability of electing a female mayor by 3 percentage points. In municipalities where the pre-reform incumbent had not completed high school, the reform increased the probability of electing a female mayor by 5 percentage points. The estimated coefficients for $PostReform_{i,t} \times \mathbb{1}(Education_{i,1992} = 2)$ and $PostReform_{i,t} \times \mathbb{1}(Education_{i,1992} = 1)$ are significantly different from each other and both significantly different from zero.[12]

5.3   Reform improved the quality of elected mayors

Third, we should expect the introduction of direct election to affect not only the gender of elected mayors but also other quality traits that voters may appreciate more than party

---

[12]The results in Figure 3 do not reflect the educational divide between the Centre-North and the South of Italy. Indeed, Table B.7 in the Online Appendix shows that the voting system reform increased the probability of electing female mayors especially in Northern Italy.

leaders and other members of the municipality councils. In Figure 4, I estimate the impact of the reform on the educational achievements of the elected mayor, separately by gender. More specifically, in Panel (a) I estimate the model presented in equation (5) using as the dependent variables an indicator equal to 1 if the elected mayor is a man holding at least an high school diploma (and zero otherwise) – black coefficients and confidence intervals – and an indicator equal to 1 if the elected mayor is a woman holding at least an high school diploma (and zero otherwise) – red coefficients and confidence intervals. Similarly, in Panel (b) I estimate (5) using as the dependent variables an indicator taking the value 1 if the elected mayor is a man without an high school diploma, and an indicator equal to 1 if the elected mayor is a woman without an high school diploma, respectively.

The results presented in Figure 4 document that the reform increased significantly both the proportion of female highly educated mayors and the proportion of male highly educated mayors. Conversely, the reform significantly reduced the probability of electing a male under-educated office holder. The reform did not have any effect on the probability of electing a female under-educated mayor as virtually no female under-educated mayors used to be in power before the reform (only 0.6% of the sample) and virtually none were elected after the reform. Although oefficients estimated before the reform in Panel (b) of Figure 4 show a minor violation of the parallel trends assumption, the jump in the outcome exactly at the year of the reform is sizeable and much larger than any pre-reform lack of balancing.

In Table B.8 in the Online Appendix, I also document how the reform affected other individual characteristics of elected mayors as well as their survival rate in office. Specifically, I document that mayors elected after the reform were more likely to be previously employed in high-skill occupations and to be re-elected after a first term in office.

6 Concluding remarks

This paper exploited the reform of the voting regime to select mayors in Italian municipalities to investigate the impact of direct elections of political leaders on the selection of female appointed officials. The results document that the introduction of a direct election scheme nearly doubled the proportion of female mayors. The effect is stronger in municipalities where a relatively high share of women was, before the reform, serving in the municipality council. This evidence indicates that the reform increased the proportion of female elected officials mainly in localities where there was a large pool of female potential candidates among which parties and voters could select from.

Newly elected female mayors were more likely to replace undereducated incumbents, while the reform did not have any significant impact in the municipalities in which the pre-reform mayor held a college degree. New mayors entering office after the reform were, on average, better educated than the replaced incumbents and arguably appeared more

productive in the eyes of parties and voters since the reform also increased the probability of re-electing the incumbent mayor.

Taken together, the results of this paper highlight a novel channel on why presidential democracies tend to run a more responsible fiscal policy than parliamentary democracies. Earlier studies focused mainly on the impact of the different incentives that the two constitutional regimes give to equal agents, while this paper documents that individuals who become political leaders under a presidential system are arguably of better quality than individuals who are elected under a parliamentary system.

References

Ballini, P. L. (2010). La Rifondazione della Democrazia nei Comuni: la Legge Elettorale Amministrativa e le Elezioni Comunali del 1946. In *Le Autonomie Locali dalla Resistenza alla I Legislatura della Repubblica*, pages 369–432. Rubbettino.

Baltrunaite, A., Bello, P., Casarico, A., and Profeta, P. (2014). Gender Quotas and the Quality of Politicians. *Journal of Public Economics*, 118:62–74.

Besley, T., Folke, O., Persson, T., and Rickne, J. (2017). Gender Quotas and the Crisis of the Mediocre Man: Theory and Evidence from Sweden. *American Economic Review*, 107(8):2204–42.

Bianchi, N., Giorcelli, M., and Martino, E. M. (2021). The Effects of Fiscal Decentralization on Publicly Provided Services and Labor Markets. NBER Working Paper No. 29538.

Bordignon, M., Gamalerio, M., and Turati, G. (2020). Manager or Professional Politician? Local Fiscal Autonomy and the Skills of Elected Officials. *Regional Science and Urban Economics*, 83:103529.

Bordignon, M., Nannicini, T., and Tabellini, G. (2016). Moderating Political Extremism: Single Round versus Runoff Elections under Plurality Rule. *American Economic Review*, 106(8):2349–2370.

Callaway, B. and Sant'Anna, P. H. (2021). Difference-in-Differences with Multiple Time Periods. *Journal of Econometrics*, 225(2):200–230.

Carozzi, F., Cipullo, D., and Repetto, L. (2022). Political Fragmentation and Government Stability: Evidence from Local Governments in Spain. *American Economic Journal: Applied Economics*, 14(2):23–50.

Cipullo, D. (2021). Gender Gaps in Political Careers: Evidence from Competitive Elections. CESifo Working Paper No. 9075.

Daniele, G., Galletta, S., and Geys, B. (2020). Abandon Ship? Party Brands and Politicians' Responses to a Political Scandal. *Journal of Public Economics*, 184:104172.

De Chaisemartin, C. and d'Haultfoeuille, X. (2020). Two-way Fixed Effects Estimators with Heterogeneous Treatment Effects. *American Economic Review*, 110(9):2964–96.

Egorov, G. and Sonin, K. (2011). Dictators and their Viziers: Endogenizing the Loyalty–Competence Trade-off. *Journal of the European Economic Association*, 9(5):903–930.

Franzoni, F. (2023). Essays on Political Economics. Ph. D. Thesis, Università Cattolica del Sacro Cuore.

Gagliarducci, S. and Paserman, M. D. (2012). Gender Interactions within Hierarchies: Evidence from the Political Arena. *The Review of Economic Studies*, 79(3):1021–1052.

Gonzalez-Eiras, M. and Sanz, C. (2021). Women's Representation in Politics: The Effect of Electoral Systems. *Journal of Public Economics*, 198:104399.

Goodman-Bacon, A. (2021). Difference-in-Differences with Variation in Treatment Timing. *Journal of Econometrics*, 225(2):254–277.

Le Barbanchon, T. and Sauvagnat, J. (2021). Electoral Competition, Voter Bias, and Women in Politics. *Journal of the European Economic Association*, jvab028.

Meriläinen, J. (2022). Political Selection and Economic Policy. *The Economic Journal*, 132(648):3020–3046.

Persson, T. (2002). Do Political Institutions Shape Economic Policy? *Econometrica*, 70(3):883–905.

Persson, T. and Tabellini, G. (2003). The Economic Effects of Constitutions: What Do the Data Say. MIT press.

Profeta, P. and Woodhouse, E. F. (2021). Electoral Rules, Women's Representation and the Qualification of Politicians. *Comparative Political Studies*, 55(9):1471–1500.

Repetto, L. (2018). Political Budget Cycles with Informed Voters: Evidence from Italy. *The Economic Journal*, 128(616):3320–3353.

Sant'Anna, P. H. and Zhao, J. (2020). Doubly Robust Difference-in-Differences Estimators. *Journal of Econometrics*, 219(1):101–122.

Union, I.-P. (2020). Women in Parliament in 2020.

Zakharov, A. V. (2016). The Loyalty-Competence Trade-off in Dictatorships and Outside Options for Subordinates. *The Journal of Politics*, 78(2):457–466.

Online Appendix

A Figures
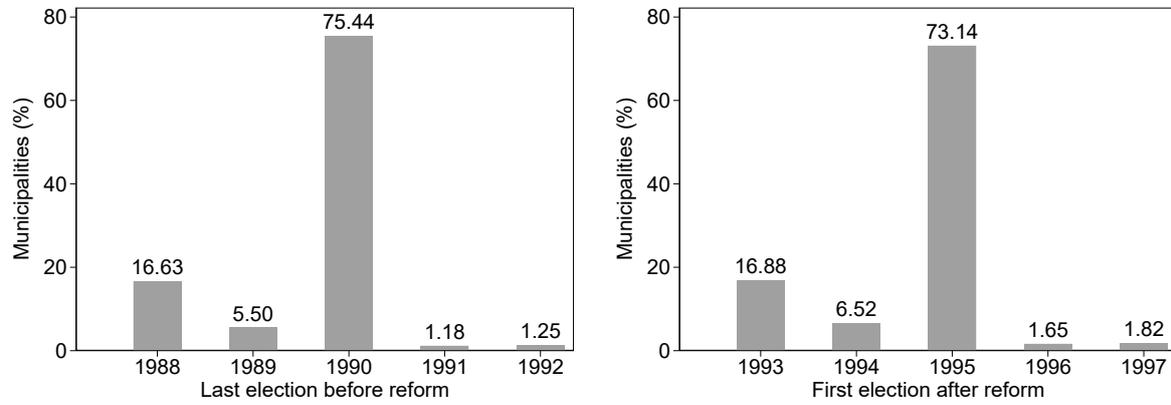
Figure A.1: Distribution of elections around the reform and 5 years prior to the reform

Notes: Distribution of elections held in each year during the 1988–1992 cycle (panel (a)) and during the 1993–1997 cycle (panel (b)).
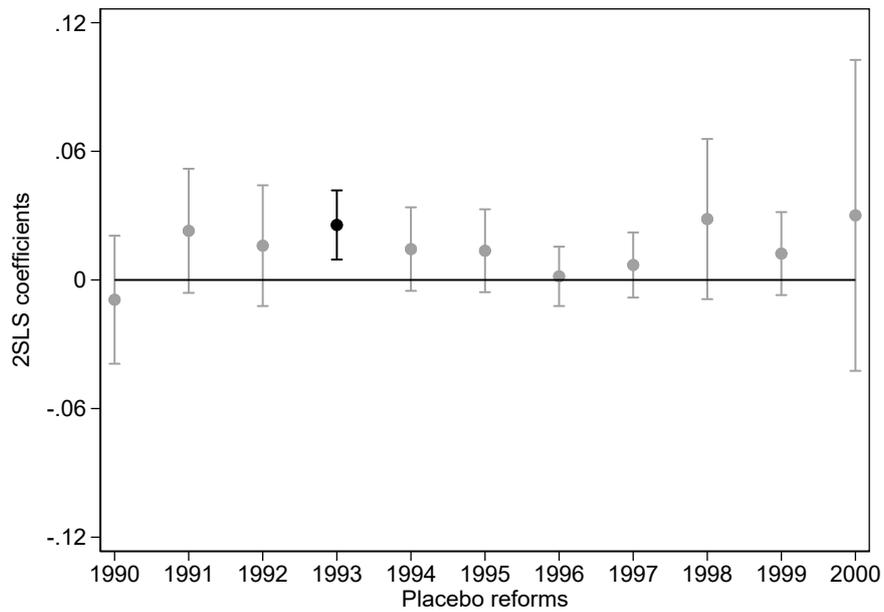
Figure A.2: Placebo coefficients

Notes: Estimation method: 2SLS as in equations (2) and (3) where, at each iteration the treatment indicator $PostReform_{i,t}$ has been replaced with an indicator $\mathbb{1}(\widehat{ElYear_{i,t}} \geq k)$, where each $k \in \{1990, 2000\}$ is specified in the horizontal axis label. Consistently, the instrument $\mathbb{1}(ElYear_{i,t-5} \geq 1988)$ has been replaced with an indicator $\mathbb{1}(ElYear_{i,t-5} \geq k-5)$. The specifications include linear time trends specific to each cohort of municipalities as in columns (2) and (5) of Table 1. 95% confidence intervals are based on standard errors robust to clustering at the municipality level.

B Tables

Table B.1: Descriptive Statistics

Variable	(1) Mean	(2) St. Dev.	(3) Obs.
(a) Mayor and Council characteristics			
Female Mayor	0.064	0.246	137,718
College Mayor	0.407	0.491	137,718
Age Mayor	46.572	9.858	137,718
Female Councilors	0.148	0.112	137,718
High-skill job Mayor	0.138	0.345	137,718
Re-elected Incumbent	0.331	0.471	137,718
Same Party	0.866	0.340	131,483
(b) Election and City characteristics			
Post Reform	0.635	0.481	137,718
Instrument	0.641	0.480	137,718
First year of treatment	1,994.674	0.829	137,718
First year of predicted treatment	1,994.538	1.080	137,718
Year	1,997.176	6.490	137,718
Population	6,624.680	43,208.263	137,718
Surface (km^2)	33.070	45.941	137,718
Population density (inh./km^2)	278.498	629.428	137,718
Gender gaps in educ. attainment	112.131	26.847	137,718
Sex ratio	96.487	6.128	137,718
Female occupation rate	29.547	8.612	137,718
(c) Pre-reform characteristics			
Female Councilors (1992)	0.082	0.066	137,718
Female Councilors in majority party (1992)	0.078	0.101	137,718
Female Councilors in minority parties (1992)	0.083	0.099	137,718
College Mayor (1992)	0.371	0.483	137,718
High School Mayor (1992)	0.437	0.496	137,718
Junior School Mayor (1992)	0.193	0.395	137,718
Vote share of DC (1992)	0.343	0.129	137,718
Vote share of PDS (1992)	0.138	0.102	137,718
Vote share of PSI (1992)	0.138	0.080	137,718
Vote share of LEGA (1992)	0.126	0.113	137,718
Vote share of RC (1992)	0.053	0.037	137,718
Vote share of MSI (1992)	0.040	0.030	137,718

Notes: All mayors serving in municipalities belonging to ordinary regions between 1986 and 2008.

Table B.2: First stage and reduced form

	First-stage			Reduced form		
	(1)	(2)	(3)	(4)	(5)	(6)
	Post Reform	Post Reform	Post Reform	Female Mayor	Female Mayor	Female Mayor
Instrument	0.748***	0.811***	0.811***	0.026***	0.020***	0.019***
	(0.013)	(0.010)	(0.010)	(0.006)	(0.006)	(0.006)
Observations	137,718	137,718	137,718	137,718	137,718	137,718
R^2	0.978	0.982	0.982	0.000	0.000	0.004
Year Effects	✓	✓	✓	✓	✓	✓
Municipality Fixed Effects	✓	✓	✓	✓	✓	✓
Cohort × linear trends		✓	✓		✓	✓
Time-varying covs			✓			✓
Pre-determined covs × Year			✓			✓
Control mean	0.00300	0.00300	0.00300	0.0340	0.0340	0.0340
F-stat	3553	6180	6180			

Notes: In column (1), the estimated equation is (3). Column (2) augments the specification in column (1) with linear trends specific to each cohort of municipalities. Column (3) augments the specification in column (2) with controls for each municipality's surface, population density, gender differences in educational attainment, population, sex ratio, female occupation rate, pre-reform share of women in the municipality council interacted with time trends, education level of the pre-reform incumbent mayor interacted with time trends, and vote share of the main parties in 1992 national elections interacted with time trends. In column (4), the estimated equations are the reduced-form associated to the 2SLS specification in equations (2) and (3). Column (5) augments the specification in column (4) with linear trends specific to each cohort of municipalities. Column (6) augments the specification in column (5) with controls for each municipality's surface, population density, gender differences in educational attainment, population, sex ratio, female occupation rate, pre-reform share of women in the municipality council interacted with time trends, education level of the pre-reform incumbent mayor interacted with time trends, and vote share of the main parties in 1992 national elections interacted with time trends. Standard errors robust to clustering at the municipality level are in parentheses. *,**,*** represent the 10%, 5%, 1% significance levels.

Table B.3: Robustness to introduction of gender quotas

	Full sample		Below 15,000 residents 2SLS		Above 15,000 residents	
	(1)	(2)	(3)	(4)	(5)	(6)
	Female Mayor	Female Coun.	Female Mayor	Female Coun.	Female Mayor	Female Coun.
Post Reform	0.024***	0.099***	0.022***	0.103***	0.035*	0.060***
	(0.007)	(0.003)	(0.008)	(0.003)	(0.020)	(0.006)
Observations	137,718	137,718	127,895	127,895	9,823	9,823
R^2	0.001	0.032	0.001	0.029	0.006	0.032
Year Effects	✓	✓	✓	✓	✓	✓
Municipality Fixed Effects	✓	✓	✓	✓	✓	✓
Cohort × linear trends	✓	✓	✓	✓	✓	✓
Control mean	0.0350	0.0830	0.0350	0.0820	0.0340	0.0870

Notes: In columns (3) and (4), the sample is restricted to municipalities having less than 15,000 residents, while in columns (5) and (6), the sample is restricted to municipalities having more than 15,000 residents. Standard errors robust to clustering at the municipality level are in parentheses. *,**,*** represent the 10%, 5%, 1% significance levels.

Table B.4: Robustness to introduction of local property tax

	2SLS					
	(1)	(2)	(3)	(4)	(5)	(6)
	Female Mayor	Female Mayor	Female Mayor	Female Mayor	Female Mayor	Female Mayor
Post Reform	0.024***	0.024***	0.025***	0.023***	0.025***	0.023***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Observations	116,671	116,707	137,065	137,632	134,451	116,192
R^2	0.001	0.001	0.001	0.003	0.001	0.004
Year Effects	✓	✓	✓	✓	✓	✓
Municipality Fixed Effects	✓	✓	✓	✓	✓	✓
Cohort × linear trends	✓	✓	✓	✓	✓	✓
Transfers1992 × Year	✓					✓
Yearly Transfers		✓				✓
Share Pre-WW2 Buildings × Year			✓			✓
Province GDP × Year				✓		✓
ISI1992 × Year					✓	✓
Control mean	0.0350	0.0350	0.0350	0.0350	0.0350	0.0350

Notes: In column (1), the specification is augmented with the interaction between the total amount of transfers received by the municipality in 1992 and year dummies; in column (2), the specification is augmented with controls for the yearly total amount of transfers received by the municipality; in column (3), the specification is augmented with the interaction between the share of housing built before WWII and year dummies; in column (4), the specification is augmented with the interaction between provincial GDP growth and year dummies; in column (5), the specification is augmented with the interaction between the amount of municipality tax revenues from the 1992 version of the property tax. Finally, in column (6), the specification is augmented with all the controls included in columns (1)–(5). Standard errors robust to clustering at the municipality level are in parentheses. *,**,*** represent the 10%, 5%, 1% significance levels.

Table B.5: Robustness to dissolution of major parties

	2SLS			
	(1)	(2)	(3)	(4)
	Female Mayor	Female Mayor	Female Mayor	Female Mayor
Post Reform	0.030***	0.027***	0.024***	0.027***
	(0.008)	(0.007)	(0.007)	(0.008)
Post Reform × DC Mayor 1990	−0.006			−0.004
	(0.006)			(0.007)
Post Reform × PCI Mayor 1990		−0.015		−0.015
		(0.015)		(0.015)
Post Reform × PSI Mayor 1990			0.015**	0.012
			(0.007)	(0.009)
Observations	136,457	136,457	136,457	136,457
R^2	0.001	0.001	0.001	0.001
Year Effects	✓	✓	✓	✓
Municipality Fixed Effects	✓	✓	✓	✓
Cohort × linear trends	✓	✓	✓	✓
Control mean	0.0340	0.0340	0.0340	0.0340

Notes: In column (1), the specification is augmented with the interaction between an indicator equal to 1 if the mayor serving during the year 1990 belonged to the Christian Democratic party (DC) and the $PostReform_{i,t}$ dummy; in column (2), the specification is augmented with the interaction between an indicator equal to 1 if the mayor serving during the year 1990 belonged to the Italian Communist Party (PCI) and the $PostReform_{i,t}$ dummy; in column (3), the specification is augmented with the interaction between an indicator equal to 1 if the mayor serving during the year 1990 belonged to the Italian Socialist Party (PSI) and the $PostReform_{i,t}$ dummy. All interaction terms are instrumented as in the main specification. Finally, in column (4), the specification is augmented with all the controls included in columns (1)–(3). Standard errors robust to clustering at the municipality level are in parentheses. *,**,*** represent the 10%, 5%, 1% significance levels.

Table B.6: Impact of the voting system reform conditional on maintaining the same party in office and impact of the voting system reform on the probability of maintaining the same party in office

	Within mayor's party			Change of mayor's party		
			2SLS			
	(1)	(2)	(3)	(4)	(5)	(6)
	Female Mayor	Female Mayor	Female Mayor	Same Party	Same Party	Same Party
Post Reform	0.027***	0.016*	0.016*	−0.491***	−0.549***	−0.549***
	(0.010)	(0.009)	(0.009)	(0.010)	(0.010)	(0.010)
Observations	137,708	137,708	137,708	131,483	131,483	131,483
R^2	−0.000	0.001	0.004	0.039	0.046	0.049
Year Effects	✓	✓	✓	✓	✓	✓
Municipality Fixed Effects	✓	✓	✓	✓	✓	✓
Cohort × linear trends		✓	✓		✓	✓
Time-varying covs			✓			✓
Pre-determined covs × Year			✓			✓
Control mean	0.0350	0.0350	0.0350	0.0360	0.0360	0.0360

Notes: In columns (1) – (3), the dependent variable is a dummy equal to 1 if the elected mayor is a woman. In columns (4) – (6), the dependent variable is a dummy equal to 1 if the mayor in office at time t belongs to the same party as the mayor in office at time $t-1$. Estimation method: 2SLS as in equations (2) and (3). In columns (1) – (3), a set of control for the incumbent mayor's party fixed effects is added to the specification. Standard errors robust to clustering at the municipality level are in parentheses. *,**,*** represent the 10%, 5%, 1% significance levels.

Table B.7: Heterogeneity by macro-region

	North-West	North-East	Central Italy	South
			2SLS	
	(1)	(2)	(3)	(4)
	Female Mayor	Female Mayor	Female Mayor	Female Mayor
Post Reform	0.032***	0.058**	0.023	0.005
	(0.012)	(0.024)	(0.019)	(0.011)
Observations	62,972	19,870	20,844	34,032
R^2	0.000	0.003	0.008	0.002
Year Effects	✓	✓	✓	✓
Municipality Fixed Effects	✓	✓	✓	✓
Cohort × linear trends	✓	✓	✓	✓
Control mean	0.0440	0.0460	0.0290	0.0130

Notes: The dependent variable is a dummy equal to 1 if the elected mayor is a woman. Estimation method: 2SLS as in equations (2) and (3). In column (1), the sample is restricted to municipalities belonging to Piedmont, Lombardy, and Liguria regions. In column (2), the sample is restricted to municipalities belonging to Veneto and Emilia-Romagna regions; in column (3), the sample is restricted to municipalities belonging to Tuscany, Umbria, Lazio, Marche, and Abruzzo regions; in column (4), the sample is restricted to municipalities belonging to Molise, Campania, Basilicata, Calabria, and Puglia regions. Standard errors robust to clustering at the municipality level are in parentheses. *,**,*** represent the 10%, 5%, 1% significance levels.

Table B.8: Impact of voting reform on the characteristics of elected mayors

	(1)	(2)	(3)	(4)	(5)	(6)
	Age Mayor	College Mayor	High school Mayor	No High sch. Mayor	High-skill job Mayor	Win next
Post Reform	0.520*	0.098***	–0.037**	–0.061***	0.056***	0.256***
	(0.309)	(0.014)	(0.015)	(0.009)	(0.011)	(0.018)
Observations	137,718	137,718	137,718	137,718	137,718	137,718
R^2	0.000	0.000	0.000	0.000	0.001	0.004
Year Effects	✓	✓	✓	✓	✓	✓
Municipality Fixed Effects	✓	✓	✓	✓	✓	✓
Cohort × linear trends	✓	✓	✓	✓	✓	✓
Control mean	44.926	0.355	0.428	0.217	0.100	0.400

Notes: In column (1), the dependent variable is the age of the mayor. In column (2), the dependent variable is an indicator equal to 1 if the mayor holds a college degree. In column (3), the dependent variable is an indicator equal to 1 if the mayor holds a high-school degree as the highest educational attainment. In column (4), the dependent variable is an indicator equal to 1 if the mayor did not complete high school education. In column (5), the dependent variable is an indicator equal to 1 if the mayor used to work in a high-skill profession before the appointment. In column (6), the dependent variable is an indicator equal to 1 if the mayor is re-elected after the next election. Standard errors robust to clustering at the municipality level are in parentheses. *,**,*** represent the 10%, 5%, 1% significance levels.