

DISCUSSION PAPER SERIES

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Quasi-Experimental Evidence from Italy**

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ABSTRACT

Can Term Limits Accelerate Women's Access to Top Political Positions? Quasi-Experimental Evidence from Italy*

We investigate whether term limits can help historically underrepresented groups, such as women, gain faster access to positions of political power. We exploit evidence from Italian local elections where, in a context of rapidly increasing women's presence in politics, mayoral term limits were extended from two to three five-year terms in municipalities with less than 3,000 inhabitants in 2014 and in those with a population between 3,000 and 5,000 in 2022. Using as control group slightly larger municipalities, we find that longer term limits delay younger cohorts' access to mayoral roles, significantly slowing the increase in female representation. The magnitude of the effect is substantial; the share of female mayors would be 4-10 percentage points higher if term limits had not been extended. The impact is stronger in municipalities with a larger presence of women at lower political levels and where gender quotas are in place, suggesting a complementarity between these policies. Our findings suggest that term limits help bridge the representational gap between entry and top-level political positions, especially in times of rapid societal change.

JEL Classification: J16, J18, J48, D72

Keywords: term limits, female political representation, Italian local elections

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1 Introduction

Recent decades have seen a substantial increase in the number of women in entry level positions in politics. The overall advancement of women’s societal status, shifts in social norms, and the implementation of gender quotas for candidate lists in many nations have all contributed to an increasing number of women entering politics. But despite rapid advancement at entry-levels, the gap between entry- and top-level representation remains large. In Europe, women account for 27% of national parliamentarians and 29% of municipal councilors, but only for 12% of prime ministers and 15% of mayors.¹

The underrepresentation of women in political leadership roles has been attributed to various factors, including societal gender norms (Folke and Rickne, 2020), bias within political parties (Esteve-Volart and Bagues, 2012) and voter prejudice (Le Barbanchon and Sauvagnat, 2022). Another reason for the slow advancement of women in politics may be the presence of electoral structures favoring extended tenures for incumbents. Term limits are relatively uncommon in Europe and mainly apply to heads of State under executive presidencies (Baturro and Elgie, 2019). At the sub-national level, only Italy and some Spanish regions apply term limits.² Term limits are more prevalent in other regions of the world. For example, in the United States, the president and governors of several states are subject to term limits, although such restrictions do not apply to members of the Senate or House of Representatives. In Africa, term limits were widely introduced during the 1990s at the presidential level (Zamfir, 2016).

In this paper, we investigate whether term limits can help accelerate generational change in politics, offering a chance for historically under-represented groups, such as women, to gain access to political power, aligning representation with shifting societal norms. Term limits may help promote female representation when a substantial portion of women have attained lower level political positions but they have been deterred from reaching the top political positions due to incumbents’ entrenchment. However, term limits also affect the duration of political tenures, which might increase or decrease female representation depending on which gender places greater value on extended time in office. Furthermore, the short-term direct impact of term limits might be amplified if earlier exposure to female leaders has subsequent effects on voters, party members, and potential candidates.

Despite the potential for turnover to foster gender equality, empirical evidence on the impact of term limits on women’s presence in politics remains limited and inconclusive. Several studies examining the introduction of term limits in various U.S. states during the early 1990s found no significant increase in the number of female politicians (Carroll and Jenkins, 2001; Carey et al., 2006; Pettey, 2018). Carroll and Jenkins (2001) attribute this primarily to a lack of female candidates participating in primary elections. Conversely, cross-country evidence shows that the share of female MPs is larger in countries without term limits, but it is difficult to ascertain whether this relationship is causal or it reflects underlying differences across countries with different electoral rules (Schwindt-Bayer, 2005).³

¹Source: Information on local governments provided by Ceciari (2019) for a sample of 41 European countries.

²Source: European Commission for Democracy Through Law - Report on Term Limits Part 2, 2019, available at https://www.te.gob.mx/vota_elections/media/files/4a7c8c5e9bcbcc8.pdf

³In a developing country setting, Labonne, Parsa and Querubin (2021) find that the introduction of term limits in the Philippines in 1987 increased female representation, but this increase was driven by ‘dynastic’

We exploit quasi-experimental evidence from local elections in Italy to study the impact of term limits on female representation. Elections occur every five years and mayors were historically subject to a limit of two consecutive terms. We analyze the implementation of two reforms that extended term limits from two to three terms, reportedly due to challenges in recruiting candidates in small towns. In 2014 the limit was increased in municipalities with fewer than 3,000 residents, while larger municipalities remained unaffected. Subsequently, in 2022 this three-term cap was also extended to municipalities with populations ranging from 3,000 to 5,000 inhabitants.

This setup presents several advantageous features. First, Italian politics has witnessed a steady increase in female representation at the grassroots level over recent decades, owing to rapid shifts in gender norms, female educational attainment, and women’s participation in the labor force, as well as various equal representation policies. Between 1992 and 2022 the share of female municipal councilors increased from 9% to 34%. In this context, term limits have considerable potential to accelerate women’s access to high-level political offices. Second, we leverage data from elections in over 4,000 municipalities spanning two decades, allowing us to exploit rich heterogeneity and enabling us to investigate when term limits can be most effective. Third, the design of the reforms allows us to estimate consistently its causal impact. More precisely, while the 3,000 and 5,000 population thresholds are also used for other policies and do not provide a clean regression discontinuity design, we disentangle the impact of term limits from other confounding policies using a difference-in-differences strategy, where slightly larger municipalities not affected by the policy change provide a credible control group. As we show below, the treatment and control groups were very similar in the past in terms of the main outcome variables, both in levels and in dynamics, supporting the validity of this empirical strategy.

Our analysis shows that the extension of term limits had the unintended consequence of slowing down women’s access to mayoral positions. In the first electoral cycle after the 2014 reform, the share of female mayors increased by 4 percentage points (standard error: 1 percentage point) less in municipalities where term limits were extended, relative to slightly larger municipalities that were unaffected by the reform. Likewise, when term limits were extended in 2022 to municipalities with more than 3,000 inhabitants and less than 5,000 inhabitants, the increase in the proportion of female mayors was 10 p.p. lower (s.e.: 4 p.p.) in these municipalities compared to larger ones. Both estimates are statistically significant and substantial in terms of magnitude, relative to the 16-18% share of female mayors who were elected in the control group. Using the sensitivity analysis proposed by [Rambachan and Roth \(2023\)](#), we find that these DID estimates are robust to deviations from the linear parallel trends assumption as large as 0.75 times the largest deviation observed in the past.

Several pieces of evidence suggest that the primary way in which extended term limits impede women’s advancement to top positions is by postponing the access of younger cohorts. Longer term limits also lead to an increase in mayors’ age and political experience. Moreover, the deceleration in women’s progression to top positions is noticeable only in municipalities

women acting as placeholders for incumbents, possibly reflecting the capture of democratic institutions by elites ([Martinez-Bravo, Mukherjee and Stegmann, 2017](#)).

where the incumbent was in their second term, indicating that it arises from the retention of incumbents rather than shifts in politician selection based on potential gender disparities in preferences for extended tenures. Previous female representation at lower levels of the hierarchy is also a strong predictor of the effectiveness of term limits, consistent with the importance of the availability of a pool of potential female mayoral candidates. The relevance of female representation at lower levels may also explain why terms limits had a larger impact when they were extended in 2022, compared to 2014. Municipalities affected by the 2022 reform had been subject to a gender quota in municipal executive councils since 2014, fostering a more extensive reservoir of potential female mayoral candidates. Term limits complement the impact of gender quotas at lower levels by providing an avenue for new female politicians to take up higher-level roles.

A potential challenge to our empirical strategy is the existence of several policies that vary at the same population thresholds used by the term limits reforms. First, mayors' salaries increase discontinuously at the 3,000 and 5,000 population thresholds. Previous work by [Gagliarducci and Nannicini \(2013\)](#) has shown that higher wages help to attract more educated candidates in Italian local elections, but there is no impact on gender.⁴ Similarly, we do not observe any differences in the gender of mayors between the treatment and control groups prior to the extension of term limits, suggesting that salaries are unlikely to explain the observed changes in the share of female mayors.⁵

Second, gender quotas in candidate lists along with double preference voting were introduced in municipalities with more than 5,000 inhabitants in 2013, eight years before this threshold was also used to implement the extension of term limits. Previous studies have shown that this reform increased the share of women among candidates to the council and elected councilors, but it had no immediate impact on the share of female mayors ([Baltrunaite et al., 2019](#); [Spaziani, 2022](#)). While it is theoretically possible that, over time, the effect of this reform trickles up to top positions, the timing of the effect suggests that longer term limits are responsible for the relative decrease in the share of female mayors that we observe below the 5,000 threshold in 2022. In a context where local elections take place in different years across municipalities, we do not observe any significant difference in the gender of mayors around the cutoff either within the first election cycle after quotas were introduced (2013-2017) or during the first four years of the second election cycle (2018-2021). A discontinuity in the share of female mayors only appears in 2022, within the second cycle of elections after gender quotas were introduced, coinciding with the extension of term limits.

Finally, another potential threat to the validity of our estimates arises from the introduction of gender quotas for executive committees in municipalities with more than 3,000 inhabitants in 2014. This reform coincided with the extension of term limits and it relied on the same population threshold, thus our analysis at this threshold identifies the combined impact of both policy changes. Nevertheless, several factors suggest that the executive gender quota is unlikely

⁴[Gagliarducci and Nannicini \(2013\)](#) use data on all Italian municipal governments from 1993 to 2001. Exploiting the 5,000 cutoff, they find that in municipalities above this threshold mayors tend to be more educated, consistent with higher compensation helping to attract candidates with better outside opportunities.

⁵Differences in mayoral salaries were constant for most of the period of our analysis, except for a 15% increase in 2020 in municipalities with less than 3,000 inhabitants. The inclusion of the period affected by this change does not affect our results.

to explain the observed changes in the share of female mayors. First, executive committee members are appointed by the mayor; therefore it is unlikely that executive quotas would influence the identity of the mayor already in the first election. At least one term is likely to be necessary for this quota to generate a trickle-up effect impacting the selection of mayoral candidates. Instead, the impact of term limits on the share of female mayors was strongest in the first election after the 2014 reform, while diminishing in subsequent elections. This is consistent with term limit extensions, which allow all incumbents to rerun in the first election, while in posterior elections some mayors reach the new three-term limit. On the contrary, a trickle-up effect from quotas at the executive level should exhibit an increasing effect over time. Second, we observe a much stronger effect in municipalities where women were already well-represented on executive committees prior to the quota and, therefore, the gender quota was less binding. This pattern points instead towards term limits, which require the availability of a pool of female potential candidates to be effective. Third, the relative increase in the share of female mayors is only observed in municipalities where the incumbent was serving a second term and was thus affected by the extension of term limits. Finally, our estimates are larger when we analyze the impact of the reform in 2022 at the 5,000 threshold, providing further evidence that term limits increased female representation.

This paper contributes to several strands of the literature. Firstly, it extends the established body of work examining the impact of term limits. Most studies on term limits have traditionally focused on the trade-off between preventing incumbents' entrenchment versus the costs of limiting voters' choice set and eliminating re-election incentives (e.g. [Besley and Case \(1995\)](#)). This literature has documented how prior experience in political office can sometimes provide an electoral advantage in subsequent elections, due to higher public visibility or through a partisan use of public resources. Conversely, restricting politicians' tenure can negatively affect performance if there are efficiency gains from politicians' experience or if electoral accountability plays a positive role. In this paper we highlight an underexplored advantage of term limits. They facilitate the alignment of political representation with shifting societal demographics and preferences. Our analysis is also related to previous work by [De Benedetto and De Paola \(2019\)](#), who analyzed how the 2014 extension of term limits in small Italian municipalities affected voter turnout.⁶

Second, we contribute to the literature on the effect of term limits on women's political representation. Several studies have analyzed the introduction of term limits in some U.S. states in the 1990s, but failed to find any increase in women's representation ([Carroll and Jenkins \(2001\)](#), [Caress \(1999\)](#), [Petty \(2018\)](#)). Our evidence from Italy, where term limits are most effective in municipalities with a large share of women at lower levels of the political hierarchy, suggests that this null effect may reflect a lack of potential female candidates. Our results highlight the conditions under which term limits may provide an opportunity for female

⁶While it is not the main focus of their paper, [De Benedetto and De Paola \(2019\)](#) mention that, in unreported results, they find that that "extended term limits reduce the probability of having female candidates running for election (significant at 10 percent level)", though they caution that this result is not robust to the choice of bandwidth in their difference-in-discontinuities analysis. Our estimates are more precise reflecting that (i) we exploit information from a larger set of elections (1993-2023 vs. 2011-2017), and (ii) we rely on a difference-in-differences strategy, which exploits information from a broader set of municipalities, around 3,000 compared to 600 municipalities in [De Benedetto and De Paola \(2019\)](#).

candidates to reach top positions.

Finally, we contribute to the literature on gender representation policies and the persistence of inequality in the political sphere. Most prior work has focused on gender quotas, as they have been the main tool adopted by policymakers to foster gender equality. In Europe, where quotas tend to target the lower levels of the political hierarchy, they have substantially increased the share of women at targeted levels, but so far their impact on higher-ranked positions has been limited.⁷ Our results indicate that term limits can complement quotas, amplifying their effects to higher levels of the political hierarchy.

2 Conceptual framework

Term limits determine when a new generation of candidates has the chance to run and replace the existing political class. The impact of term limits on women’s presence in top positions will depend on at least three factors: (i) whether they lead to the replacement of the term-limited incumbent by a female mayoral candidate (‘replacement’ effect), (ii) whether having a shorter time horizon makes politics more or less attractive for men and women (‘selection’ effect) and, in the longer term, (iii) whether the exposure to female politicians has a knock-on effect on voters, party members, and potential candidates (‘exposure’ effect).

The strength of the replacement effect is likely larger in contexts with a strong incumbency advantage and where term limits are more binding. Furthermore, if the incumbent is term-limited, the probability that the new party candidate is a woman will be higher if there is a large pool of female politicians at lower levels, which may be fostered by the existence of gender quotas at lower levels of the hierarchy. It is also crucial that party leaders and members are not biased against female candidates. However, women may still fail to reach top positions if voters have prejudices against female leaders.

In addition to this direct effect through the replacement of incumbents, a second channel - selection - may affect female candidates if the possibility of a longer tenure makes politics relatively more attractive to women or men, for example through greater stability in the position. If term limits affect female representation through this channel, then we would expect a change in the share of female candidates running for mayoral positions also in municipalities where the incumbent is not yet term-limited. In the Italian context, we expect this effect to be relatively small. The existing empirical evidence indicates that, before term limits were extended, attaining a mayoral position had only a modest positive impact on earnings (Bertoni et al., 2023).⁸

Finally, the long-term effects of increased political turnover depend on whether it shifts the equilibrium level of representation through an exposure effect, or it just accelerates convergence to a pre-existing equilibrium level that reflects underlying voter preferences and the supply

⁷Gender quotas in candidate lists have not impacted significantly the share of female mayors within two electoral cycles in Spain (Bagues and Campa, 2021), Italy (Baltrunaite et al., 2019; Spaziani, 2022) or France (Lassébie, 2020). In contrast, O’Brien and Rickne (2016) find that the voluntary introduction of gender quotas by the Swedish Social Democratic Party did increase the share of female mayors.

⁸Employing a close elections research design, Bertoni et al. (2023) find that successful mayoral candidates earn approximately 6% more annually over a 15-year horizon compared to unsuccessful candidates. The availability of one additional term is unlikely to significantly increase this premium.

of minority candidates. Term limits may directly shift this equilibrium upwards, through a feedback cycle between elected representatives and the supply of candidates, e.g. via role-model effects.

Analyzing the impact of term limits through the lenses of replacement, selection, and exposure can help to elucidate how their effects may vary across different contexts and time periods. A substantial replacement effect can be expected during periods of rapid growth in women's political presence and in contexts with strong incumbency advantages. This replacement effect would be observable in races where the incumbent is term-limited. Selection effects are more likely to emerge when men and women have different preferences or face differing labor market opportunities. In this case term limits might affect the gender mix of mayoral candidates in all races, irrespective of the incumbent's term-limited status. Finally, if an exposure effect is present, we would expect to observe an additional increase in the share of female politicians in subsequent elections in municipalities that experienced greater mayoral turnover and, by proxy, more exposure to female mayors in the intervening period. This exposure effect should be more pronounced in contexts where lack of prior exposure to female mayors has been a barrier to representation. We will revisit these concepts in our analysis.

3 Institutional framework

3.1 Local government and electoral system

Italian municipalities are responsible for a wide range of public services, including water supply, waste management, municipal policing, infrastructure maintenance, housing provision, and welfare policy implementation. The local administration is formed by a mayor, an executive committee, and a council. The mayor serves as the executive head, guiding allocation of public funds and appointing the executive committee. Members of the executive are assigned to areas of competence, and each of them supersedes a specific policy domain (e.g. education), assisting decision-making in their area. Council members can propose policies and local legislation and vote on them. While mayors and council members are elected directly by voters, executive committees are chosen among elected council members by the mayor.

The electoral system varies depending on municipalities' population. In municipalities with less than 15,000 inhabitants, which are the focus of this paper, the mayor is elected through a majoritarian system and the list associated with the mayor receives 2/3 of the seats in the council through a proportional representation system with open lists.

Local elections in Italy take place every five years. For historical reasons, such as the dissolution of the local government, not all municipalities hold elections on the same year. During the period of our analysis the largest batch of municipalities, accounting for around half of the total, held elections in years ending in 4 and 9 (i.e. 2004, 2009...).

3.2 Term limits reforms: 2014 and 2022

Italian mayors have been subject to a two-term limit since 1993. In April 2014 term limits were extended from a maximum of two to a maximum of three consecutive five-year terms in

municipalities with less than 3,000 inhabitants, as measured in the latest census.⁹

The main political motivation for the term limit extension was the difficulty in finding mayoral candidates who could replace incumbents in small municipalities.¹⁰ This reform was not implemented in five regions with “special status”, which have autonomy to decide on electoral policies.¹¹ In 2022, the three-term limits policy was extended to all municipalities with less than 5000 inhabitants.

3.3 Other policies based on population cutoffs

The population thresholds used for the extension of term limits are also relevant for several institutional features that might potentially affect mayor characteristics.

3.3.1 Salaries and size of municipal council

Mayoral salaries are determined based on the number of inhabitants of the municipality, following a step function that varies at different population cutoffs, including the 3,000 and the 5,000 cutoffs. Over time, differences in compensation according to municipality size have been stable, except for a 15% salary increase in 2020 in municipalities below 3,000 inhabitants.¹²

The size of the municipal council also varies at some population thresholds. While it does not change at the 5,000 threshold, the municipal council has been always slightly larger in municipalities with more than 3,000 inhabitants. The specific difference has changed several times during the period of our study.¹³

3.3.2 Equal representation policies

Several policies have been implemented in Italy during the last decade to increase female representation, targeting different levels of the political hierarchy. First, a 40% gender quota on candidate lists was introduced in 2013 in municipalities with more than 5,000 inhabitants along with double preference voting, which allows voters to cast up to two preference votes, one for a female and one for a male candidate for the council. This reform led to a substantial increase in the share of female council members, but it did not affect significantly the share of female mayors or executive members (Baltrunaite et al., 2019; Spaziani, 2022).

Second, a 50% gender quota on the executive committee was implemented in 2014 in municipalities with more than 3,000 inhabitants. The quota affects the choice of members on behalf of the mayor. Most importantly, both the timing and the population cutoff are the same as the one adopted for term limit extensions - 3,000 inhabitants - although the extension of term limits

⁹Law 7 April 2014, n. 56, available at <https://www.gazzettaufficiale.it/eli/id/2014/4/7/14G00069/sg>.

¹⁰See discussion in law proposal n. 3539, available at https://www.camera.it/leg17/995?sezione=documenti&tipoDoc=lavori_testo_pdl&idLegislatura=17&codice=17PDL0038480

¹¹Three of these regions remained with a two-term restriction for all municipalities (Sardinia, Sicily, Friuli Venezia-Giulia), while two regions (Aosta Valley and Trentino-South Tyrol) already had a three-term limit.

¹²The law decree 2019-10-26, article 57, increased mayors' remuneration in municipalities below 3,000 to 85% of the salary in municipalities just above this threshold. The salary increase was effective on 25-12-2019. See <https://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legge:2019-10-26;124>

¹³The municipal council included 12 members in municipalities below 3,000 before 2011, 9 members in 2011, 6 in 2012 and 2013, and 10 after 2014, while in municipalities with a population size between 3,000 and 10,000, councils were composed by 16 members before 2011 municipal, 12 members in 2011, 7 in 2012 and 2013, and 12 since 2014.

affects municipalities below this cutoff, and gender quotas were implemented in municipalities above.

3.3.3 Other policies

There are two other policies relying on population thresholds during this period. The Domestic Stability Pact (DSP), a regulation aimed at improving national financial stability, was introduced in 1999 in all municipalities, constraining their capability to run deficits. In 2001, municipalities below 5,000 were excluded and, in 2013, the rule was extended to all municipalities between 1,000 and 5,000 inhabitants. Finally, in 2015 the DSP was replaced with a budget balance rule for all local authorities. Given that the term limits reform relying on the 5,000 threshold was introduced much later, in 2022, and it was implemented taking into account the population according to the 2021 census, the Domestic Stability Pact is unlikely to be a relevant confounding effect.

Similarly, in 2010 a law was introduced requiring small municipalities to manage jointly a number of basic public services (Law no. 78/2010).¹⁴ This law affected municipalities with fewer than 5,000 inhabitants, except in the case of municipalities legally considered as ‘mountain municipalities’, where the threshold was lowered to 3,000 residents. Cremaschi et al. (2023) have shown that this reform reduced access to local public services and increased the electoral support for far-right parties in national elections by around 1.5 percentage points. Given its timing, we do not expect this policy to affect our analysis of the term limits at the 5,000 threshold. However, this policy might have potentially affected some electoral outcomes in 2014 in ‘mountain municipalities’ below the 3,000 threshold, coinciding with the extension of term limits.

4 Data

We use data from local elections held between 1993 and 2023.¹⁵ We exclude from the analysis Italian regions with a special status, as they were not subject to the policy reform. As we explain in more detail in the ‘Empirical analysis’ section, our analysis considers 4,068 municipalities with more than 1,000 and less than 7,000 inhabitants. Around 24% of the Italian population lives in these municipalities. Our focus on small municipalities implies that we are estimating the impact of the policy in areas that are relatively more rural, with slightly fewer women, and older population. Close to 40% of these municipalities have the status of mountain municipality.

4.1 Electoral information

As shown in Table 1, turnout tends to be high, around 75% of eligible residents vote, and the gender composition of voters is balanced, with 50% of voters of each gender. On average, there are around 2.4 candidates to mayor per municipality.

¹⁴Municipalities were required to manage jointly manage at least three public services by January 1, 2013, at least three other services by September 30, 2014, and all remaining services by December 31, 2014.

¹⁵Electoral data was retrieved from the Ministry of Internal Affairs *Eligendo* <https://elezioni.interno.gov.it>, see Data Appendix C for details

4.2 Female representation

Female representation in mayoral positions has been historically low, although it has been increasing over time (see Figure 1). In 1993 there were just over 4% of female mayors, compared to 15% by 2022. Female representation is higher at lower levels, in municipal councils and executive committees, and it has increased substantially over time, particularly with the introduction in 2013 of gender quotas in candidate lists and double preference voting in municipalities with more than 5,000 inhabitants, and in 2014 of gender quotas in executive committees in municipalities with more than 3,000 inhabitants.

Younger cohorts of politicians have higher shares of women. We observe more women among newly elected mayors and among mayoral candidates, compared to the share of women among all mayors (see Figure 2). The larger presence of women among younger cohorts already suggests that, over time, as new mayors are elected the share of female mayors is likely to increase.

4.3 Mayors' characteristics

The average mayor in our sample is around 50 years old and has 15 years of education (see Table 1). Elected mayors tend to have previous political experience. The average mayor has been a council member before being elected for around 10 years.

Around 39% of mayors are re-elected and 31% of municipalities have an incumbent who cannot re-run due to term limits. The relatively high share of term-limited municipalities is driven by two factors. First, most mayors who are not term-limited, regardless of their gender, tend to rerun. Second, incumbents have a high probability of being re-elected. While the share of previous incumbents among all candidates is 16%, the probability of an incumbent being re-elected, conditional on re-running for election, is 66%. Given the high probability of re-election of incumbents, the end of their tenure represents a unique chance for new candidates to mayor.

Dynastic candidates, which we proxy using surname information, seem to be rare. Less than 2% of mayors have the same surname as the previous incumbent.¹⁶

5 Empirical analysis

We analyze separately the extension of term limits in 2014 in municipalities with less than 3,000 inhabitants and in 2022 in those with a population between 3,000 and 5,000. Given the characteristics of the policy, we consider two different empirical methods. In our main analysis, we use a difference-in-differences (DID) strategy, using as treatment and control groups municipalities within a 2,000 inhabitants bandwidth of the policy cutoff. While a standard regression discontinuity design is not appropriate in this context due to the existence of other relevant institutional differences at the cutoffs, we also report results from a difference-in-discontinuities (RD-DID) analysis (i.e. a regression discontinuity design considering the outcome variable in differences). Our DID and RD-DID estimates are very similar, but less precise in the latter case.

¹⁶The scarce presence of dynastic candidates is in contrast with findings for the Philippines by Labonne, Parsa and Querubin (2021), reflecting the difference in institutional context between the two countries, and suggests that the role of kinship in shaping the impact of term limits is less important in this context.

5.1 Difference-in-differences

To ensure that we compare municipalities with similar institutional characteristics and to minimize the possibility that they are exposed to differential time-variant shocks, we restrict our sample to municipalities within 2,000 inhabitants of the population thresholds used for extending term limits. More precisely, to estimate the effect of the 2014 reform, which extended term limits in municipalities below 3,000 inhabitants, we compare the evolution of (i) municipalities with more than 1,000 and less than 3,000 inhabitants (in what follows, ‘small’ municipalities) versus municipalities with more than 3,000 and less than 5,000 inhabitants (‘medium’ municipalities). This sample restriction excludes municipalities above 5,000 inhabitants, which were affected by the introduction of quotas in candidate lists and double preference voting in 2013, as well as municipalities with less than 1,000 inhabitants, which was the threshold used for the application of the *Domestic Stability Pact* in 2013. This sample includes around 3,500 municipalities. Similarly, in our analysis of the 2022 reform, which extended term limits in municipalities with more than 3,000 and less than 5,000 inhabitants, we compare (i) municipalities with more than 3,000 and less than 5,000 inhabitants (‘medium’ municipalities) versus municipalities with more than 5,000 and less than 7,000 inhabitants (‘large’ municipalities). In this case we are only able to include in our study municipalities that had elections in 2022 and 2023. There are around 320 municipalities in this sample.

As we show in more detail below, our analysis suggests that DID is an appropriate empirical strategy in this context. The treatment and control groups were very similar before term limits were extended, both in terms of the average values for the main outcome variables as well as their evolution over time, providing support for the parallel trends assumption.¹⁷ The lack of significant pre-existing differences in levels makes the DID more convincing, as it implies that parallel trends tests are not sensitive to functional form assumptions which in many contexts, including this one, are not trivial (Roth and Sant’Anna, 2023). For instance, while similarly to most of the literature, in our analysis we consider changes in percentage points, theoretically one could also argue for the use of percent changes. Finally, we also assess the robustness of the DID estimates to potential deviations from the linear parallel trends assumption using the sensitivity analysis proposed by Rambachan and Roth (2023). This robustness exercise allows to estimate how large a violation of parallel trends would have to be in order to invalidate our results.

5.1.1 Pre-existent differences between treatment and control groups

Descriptive graphs We start by showing graphically the evolution over time of the main variables in the treatment and control groups. These graphs provide suggestive visual evidence indicating (i) there are no significant differences between the control and treatment groups prior to the policy change (ii) but both groups diverge after the policy change. Figures 3 and 4 provide descriptive information on the evolution over time of the main variables by municipality size,

¹⁷In some settings, larger municipalities may not provide a valid counterfactual for the evolution of smaller ones. For instance, in the context of Spanish local elections, Bagues and Campa (2020) show that voting behavior evolves quite differently in large and small municipalities, invalidating the consistency of standard DID estimates that rely on population thresholds to assess the impact of policy changes on voting behavior, e.g. the introduction of gender quotas in Spain in municipalities with less than 5,000 inhabitants in 2007.

for the 2014 and the 2022 reforms respectively. Given that there are some years with very few elections, for clarity in our graphical analysis we group elections by electoral cycles. When we analyze the 2014 reform, we consider as the baseline electoral cycle years 2014-2018 (i.e. the first cycle of elections after the reform). In our analysis of the 2022 reform, we restrict our sample to municipalities that had one election after the reform, i.e. years 2022-23, and track them in previous electoral cycles.

As illustrated in both figures, the treatment and control groups appear highly comparable prior to the policy change across all dimensions except one. The sole difference lies in the number of candidates, which seems to evolve in parallel in the treatment and control groups, but it tends to be greater in larger municipalities. This observation aligns with the policy’s motivation, which was driven by the scarcity of mayoral candidates in smaller municipalities. More precisely, before 2014 there are around 2.3 candidates in small municipalities, compared to 2.6 in medium-sized ones. Similarly, before 2022 the number of candidates was around 2.9 in large municipalities, compared to 2.6 in medium size ones.

The other dimensions seem to be balanced across the treatment and control groups, both at the 3,000 threshold and the 5,000 threshold. Around 35% of mayors were term-limited before terms limits were extended. As expected, the share of term-limited mayors decreases to zero in treated municipalities in the first election after the reform, while in the control group it remains roughly constant. The gap between both groups is slightly smaller in the second cycle of elections, which we can observe in the case of the 2014 reform (years 2019-2021), reflecting that in treated municipalities some mayors reached their third term and became term-limited. The probability that the mayor is re-elected follows a very similar pattern. Before the reforms there is no apparent difference between the treatment and control groups, but a gap arises when term limits are extended in smaller municipalities.

Mayors in treatment and control groups were also very similar before the reform in terms of their age and their political experience, as measured by the number of years since they entered the council. However, a gap seems to appear when term limits are extended, with a relative increase in the political experience and age of mayors in ‘treated’ municipalities.

Finally, the share of female candidates and female mayors, which was growing in all municipalities prior to the reforms, stagnates when term limits are extended, while in municipalities in the control group it keeps growing at the same speed as before.

Balance test The above descriptive graphs visually suggest that there were no differences between the treatment and control groups prior to the policy change, except for the number of candidates. Next we formally test whether the treatment and control groups were similar in levels before the intervention, controlling for electoral year fixed effects and clustering standard errors at the municipal level. For the 2014 reform, we compare ‘small’ and ‘medium’ municipalities in years 1993-2013. Similarly, for the 2022 reform, we compare ‘medium’ and ‘large’ municipalities between 1993 and 2021. As shown in Table [2](#), the treatment and control groups are statistically similar before the reform in all dimensions except for the number of candidates and for a small difference in the probability of being term-limited in 2022. The lack of pre-existent differences lends support to our empirical strategy. As the main outcome variables

were similar before the introduction of the policy, it is more reasonably to expect that the two groups of municipalities would have evolved similarly, absent the introduction of the policy.

Event study analysis We conduct an event study analysis to examine the validity of the parallel trends assumption. In particular, we estimate the following equation:

$$(1) \quad Y_{me} = \alpha_m + \beta_e + \sum_{k=T_0}^{-2} \gamma_k \times TreatmentGroup_m + \sum_{k=0}^{T_F} \gamma_k \times TreatmentGroup_m + \varepsilon_{me},$$

where Y_{ie} is the outcome of interest (e.g. whether a female mayor was elected in municipality m in the election that took place in electoral cycle e), α_e and β_m represent a set of dummies for electoral cycles and municipalities respectively, and T_0 and T_F represent respectively the first and the last electoral cycle available in the dataset. *TreatmentGroup* is a binary variable taking value 1 for municipalities that were affected by the extension of term limits (e.g. municipalities with more than 1,000 and less than 3,000 inhabitants when we analyze the 2014 reform). Standard errors ε_{me} are clustered at the municipality level.

Overall, the event study estimates support the validity of a difference-in-differences strategy in this context (see Figures 5 and 6). Out of 42 tests, we only observe two significant coefficients at the 5% level, which is consistent with the underlying probability of finding false positives. One of the violations corresponds to the evolution in the share of female candidates in small and medium municipalities between 2004-2008 and 2009-2013, and the other to the evolution in the number of candidates in large and medium municipalities between 2012-2016 and 2017-2021.

5.1.2 Difference-in-differences estimates

We estimate the following difference-in-differences equation separately for each reform:

$$(2) \quad Y_{mt} = \alpha_m + \beta_t + \gamma Three\ Terms_{mt} + \varepsilon_{mt},$$

where Y_{mt} is the outcome variable of interest, α_m and β_t represent two sets of municipality and year fixed effects, and *Three Terms* is a binary variable taking value 1 when the municipality is subject to a three-term limit. Standard errors are clustered at the municipality level.

In our analysis of the 2014 reform we restrict the sample to elections between 2004 and 2019 in municipalities with more than 1,000 and less than 5,000 inhabitants. We exclude elections in years 2020 onwards, as municipalities with less than 3,000 inhabitants experienced this year a small increase in mayoral salaries and in 2022 they were affected by the extension of term limits. In the post-treatment period, years 2014-2018 provide information on the impact within the first cycle of elections that took place after the reform, and year 2019 informs about the effect of the reform in the second cycle of elections¹⁸. In our analysis of the 2022 reform we consider municipalities between 3,000 and 7,000 inhabitants in years 2013-2023. We exclude

¹⁸In a small number of municipalities there were two elections between 2014-2018 due to the resignation of the mayor or some other exceptional event requiring a new election before the end of the standard five year term.

observations before 2013 given that in this year gender quotas in candidate lists were introduced in municipalities above 5,000 inhabitants. We report results in Table 3 (i.e. 2004-2019 for the 3,000 threshold and 2013-2023 for the 5,000 threshold). All estimates are very similar if we consider instead a longer panel, using observations since 1993 (see Table B.1).

We start by quantifying the impact of the term limit extension on the probability that the incumbent mayor can run again and is re-elected. As shown in the upper panel of Table 3, column 1, the extension of term limits in small municipalities in 2014 decreases the probability that the incumbent is term-limited by 32 p.p (s.e.=1 p.p.). The impact of the 2022 reform is very similar, a 36 p.p. decrease (s.e.=6 p.p.), although it is less precisely estimated (see bottom panel of Table 3, column 1). We also observe a decrease in the number of candidates in both thresholds, -0.08 at the 3,000 threshold (s.e.=0.03) and -0.06 at the 5,000 threshold (s.e.=0.10), as well as a decrease in the share of female candidates of 2 p.p. (s.e.=1 p.p.) at the 3,000 threshold and 8 p.p. (s.e.=3 p.p.) at the 5,000 one, compared to larger municipalities unaffected by the reform.

To induce a replacement effect, the reform should also affect the probability that incumbents are re-elected. Indeed, we find that the reform increased the probability that the incumbent mayor was re-elected by 11 p.p. in 2014 (s.e.: 2 p.p.) and by 17 p.p. in 2022 (s.e.: 8 p.p.).

Next, we analyze the impact on the characteristics of mayors. The extension of term limits helped to retain mayors that are older and also more experienced. In 2014 the reform increase the average age of mayors by 0.87 years (s.e.=0.45) and in 2022 by 0.65 (s.e.=1.23 p.p.), although only the former coefficient is statistically significant. The number of years since the mayor had entered the municipal council increased by 1.12 (s.e.=0.35) when term limits were extended in 2014, and by 0.66 (s.e.=1.07) with the 2022 extension.

Finally, we also observe a clear and significant decrease in the share of female mayors in smaller municipalities right after the reform, compared to larger ones that were not affected by the extension of term limits. The share of female mayors decreased by 4 p.p. in municipalities affected by the 2014 reforms (s.e.: 1 p.p.), compared to an average of 17% in the control group. In 2022 the effect is around 10 p.p. (s.e.: 4 p.p.), relative to a 16% baseline. The effect of the 2022 reform is substantially larger in magnitude than the 2014 reform. We return to this observation in the heterogeneity section, where we focus on how supply considerations - the presence of women at lower positions of the political hierarchy - on the impact of term limits.

5.1.3 Treatment effect bounds

The consistency of our DID estimates relies on the assumption that, in the absence of the reform, the outcome variable would have evolved similarly in the treatment and the control group. While we do not observe any significant violations of the parallel trends assumption prior to the policy change, the informativeness of these tests is limited by their statistical power. Following Rambachan and Roth (2023), we conduct sensitivity analysis allowing for violations of the parallel trends assumptions.

We report confidence intervals for our main estimates allowing for deviations from the parallel trends assumption (see Figure 7). In the x-axis, M indicates the maximum violation that is allowed, taking as a baseline the maximum deviation observed in the pre-treatment period.

For instance, while $M=0$ corresponds to the case of trends being exactly parallel (i.e. standard DID), $M=1$ allows for post-treatment violations of parallel trends that are not larger than the worst pre-treatment deviation in the evolution of both groups (between consecutive periods). Our estimates on the impact of reform on the probability that the incumbent is term-limited are robust to deviations from the linear parallel trends larger than the largest deviation observed in the pre-treatment period. In the case of the impact of the reform on the gender of the mayor, DID estimates are robust to deviations from the linear parallel trends assumption as large as 0.75 for the 2014 extension and around 0.50 for the 2022 one.

5.2 Mechanisms

To get a better understanding of the underlying mechanism, we conduct two heterogeneity analyses. First we examine whether the impact varies depending on whether the incumbent had completed their first or their second term, and therefore it is directly affected by the term limits extension. Second we compare the impact depending on whether there was a relatively larger share of women at lower levels in previous terms.

As we show below, the impact of the reform on female representation is only significant when the previous incumbent was in the 2nd term, consistent with a replacement effect, and it is significantly larger in municipalities with a higher presence of women in previous executive councils, highlighting the importance of having a pool of potential female mayoral candidates.

5.2.1 Selection versus replacement effects? Impact by number of terms served by the previous incumbent

This heterogeneity analysis helps to disentangle whether the extension of term limits decreases the probability of having a female mayor due to its direct impact on the probability that the mayor is term-limited (‘replacement effect’), or due to the existence of gender differences in preferences for the length of political careers (‘selection effect’).

In municipalities where the mayor was in the 2nd term, the extension of term limits implies that the incumbent can re-run in the following election and future mayors face a longer time-horizon. Instead, in municipalities where the mayor was in their 1st term, incumbents can re-run independently of the reform, and the reform may affect the pool of candidates only through its impact on politicians’ time-horizon.

We restrict our analysis to the first cycle of elections after the reform, years 2014-2018. In municipalities where the incumbents were in their second term, the 2014 reform (mechanically) decreases by 100 p.p. the probability of being term-limited and we observe a 26 p.p. increase (s.e.=2 p.p.) in the probability that the incumbent is re-elected (see Table 4, upper panel). There is also a significant increase in the political experience of mayors and 7 p.p. decrease in the share of female mayors, compared to larger municipalities where the mayor was unable to run again. Conversely, in municipalities where the incumbent mayor was in the first term of their mandate we do not observe any significant impact of the reform on any dimension (Table 4, lower panel). We find a similar pattern when we conduct the analysis for the 2022 reform, the extension of term limits only affects the characteristics of mayors in municipalities where the incumbent was in their second term (Table 5). Overall, evidence from both reforms suggests

that the ‘replacement effect’ is the dominating mechanism. The extension of term limits enabled more experienced incumbents to remain in office, while in municipalities where incumbents were not allowed to rerun there is a replacement in favor of younger and less experienced candidates, who are more likely to be women.

5.2.2 The role of supply: Impact by previous level of female representation at lower hierarchy levels

Theoretically, we expect term limits to lead to an increase in female representation in top positions when a large enough pool of potential female candidates is available. To understand the impact of supply considerations on the impact of the reforms, we estimate how the effect of term limits varies depending on the previous share of women in the executive. We estimate the following equation:

$$(3) \quad Y_{mt} = \alpha_m + \beta_t + \gamma \text{ThreeTerms}_{mt} \times \text{WomenExecutive}_{mt-1} + \varepsilon_{mt},$$

where $\text{WomenExecutive}_{m,t-1}$ is a variable that denotes the share of women in the two previous executive councils. We only estimate this equation for the 2014 reform, as in the 2022 reform there is practically no variation in terms of the share of women in the executive due to the introduction in 2014 of a 50% gender quota that affected both medium and large municipalities.

The share of women in previous executive councils is not related to the probability that the current mayor is affected by the term limit extension (see Table 6, column 1) but, as expected, term limits extensions slow down the access of women to mayoral positions in municipalities where the executive council was more feminized (see column 6). The magnitude of the effect is quite substantial. The extension of term limits in a municipality with 10 p.p. more women in the executive council decreases the likelihood that the new mayor is a woman by 4.2 additional p.p. (s.e.: 0.6 p.p.).

5.3 Is there an exposure effect? Short- vs. medium-term effects

The impact of changes in term limits may be amplified or reduced over time. On the one hand, as mayors in small municipalities hit the new three-term limit, the share of term-limited mayors is likely to increase. On the other hand, the increased exposure to female politicians in the first cycle of elections could have a knock-on effect on voters and parties, leading to further improvements in the next elections. This exposure effect would be particularly important in cases where voters or party members have concerns about the quality of female politicians, and learn about their quality over time through exposure to newly elected women.

To understand whether exposure effects are relevant, we compare the impact of term limits in the first cycle of elections after the 2014 reform versus its impact in the following electoral cycle. More precisely, to estimate the short-term impact of the 2014 reform, we estimate equation (2) using data for years 2004-2013 as the pre-reform period and 2014-2018 as the post-reform period. Instead, to estimate the mid-term effects we consider years 2004-2013 as the pre-reform period and 2019-2021 as the post-reform period, excluding data for the first cycle of elections (2014-

2018). Our analysis stops at 2022, due to the extension in this year of term limits to midsize municipalities.

While in the first cycle of elections incumbents in small municipalities have 35 p.p. (s.e.=2 p.p.) lower probability of being term-limited, in the second election cycle the gap decreases to 22 p.p. (s.e.= 2 p.p.), reflecting that some mayors in small municipalities have now reached their third term (see Table 7, first column, both panels). The gap in the probability that the mayor is a woman also decreases from 3.9 p.p. (s.e.= 1.5 p.p.) in the first cycle to 2 p.p. (s.e.=1.9 p.p.) in the second cycle (see Table 7, last column, both panels). Overall, the evidence does not support the existence of an additional exposure effect.

5.4 Confounding effects of other policies

As discussed in section 3.3, there are other policies that rely on the 3,000 and the 5,000 inhabitants cutoffs. Below we provide several pieces of evidence suggesting that the change in female representation at the mayoral level that we observe in 2014 at the 3,000 threshold and in 2022 at the 5,000 threshold was induced by the extension of term limits, and not by these other policies.

5.4.1 Gender quotas in executive committees

A gender quota in executive committees was introduced in 2014 in municipalities with more than 3,000 inhabitants, at the same time and relying on the same population threshold as the extension of term limits. Therefore, our DID estimation of the 2014 reform captures the joint effect of the two policies, the term limit extension and the introduction of the executive quota policy. There are several pieces of evidence suggesting that executive quotas cannot explain the relative increase in the share of female mayors in larger municipalities. First, the evolution over time in the share of female mayors suggests that the relative increase in the share of female mayors is driven by an stagnation in the share of female mayors in small municipalities, which were affected by the extension of term limits (see Figure 3, 1st column, bottom row). Instead, in municipalities over 3,000, where the executive gender quotas were introduced, the share of female mayors seems to follow the same trend as in previous years. Second, the effect of the reform is concentrated in locations where the representation of women in previous terms was relatively higher (Table 6). This is consistent with term limits being the main factor, as they are likely to be more relevant when a larger pool of female mayoral candidates is available. On the contrary, the executive quota reform should arguably have had a larger impact in municipalities where in the past the previous representation of women was low, and therefore it is more binding. Third, we only observe an impact in municipalities where the incumbent mayors were in their second term, which is consistent with the replacement effect induced by term limits (Tables 4 and 5). If the executive quota was increasing the probability of a female mayor, we would have expected an effect also when the previous mayor was in the first term, at least in the share of female mayoral candidates. Fourth, the effect is stronger in the first cycle of elections after the reform (e.g. years 2014-2018) than in the second one (e.g. 2019-2021). This is more consistent with term limits, which have a larger impact on the probability that the incumbent is term-limited in the first election (see Figure 3, first row, first column). Instead, if anything quotas

in executive committees should have an increasing effect over time. There is limited scope for the quota to affect the identity of the mayor in the first election after its introduction, given that executive committee members are selected by the mayor among council members after the election has taken place, but over time a trickle-up effect might arise, as women who entered politics due to the quota climb up the political ladder. Finally, we also observe an impact of the reform in 2022, when gender quotas in the executive were present both in municipalities above and below the threshold.

5.4.2 Gender quotas in candidate lists and double preference voting

Since 2013, municipalities with more than 5,000 inhabitants are subject to gender quotas in candidate lists and double preference voting. Previous studies have documented that this reform, which increased substantially female presence in the council, did not have a significant impact on the share of female mayors, at least within the first cycle of elections (Baltrunaite et al., 2019; Spaziani, 2022). However it is possible that a trickle-up effect arises over time.

To ensure that the higher share of female mayors that we observe in the 2022 and 2023 elections in municipalities above 5,000 inhabitants is not driven by the long term effect of this reform, we re-estimate our analysis of the 2022 reform, controlling for gender quotas. Adding a dummy for the presence of quotas in candidate lists does not affect the estimated impact of the extension of term limits (see Table 8, columns 1 and 2). The estimate is also unaffected when we include controls for the number of times that a municipality has been exposed to quotas (column 3). In this case the effect of term limits is identified by the comparison between elections in years 2018-2021 vs. elections in 2022, which were similar in terms of being exposed to quotas for the second time, but in the latter case there is also the additional impact of the term limits expansion in municipalities above 5,000 inhabitants

In columns 4-6 of Table 8, we explore whether term limits may have affected the share of women in the council. The estimate is negative and significant when we do not take into account gender quotas. However, the estimate becomes positive and insignificant once we account for the existence of gender quotas.

5.4.3 Mayors' remuneration

Mayors' remuneration vary at the 3,000 and at the 5,000 population thresholds, which might potentially affect the characteristics of mayors, including their gender. Historically, the salary increase at these cutoffs was around 50% at the 3,000 threshold and 29% at the 5,000 threshold. This gap only changed in 2020, following a reform that increased salaries in municipalities with less than 3,000 inhabitants by 15%, leaving salaries in other municipalities unchanged.

In our main analysis of the 2014 reform we excluded years 2020 and 2021, to account for the possibility that the asymmetric change in salaries at the 3,000 threshold in 2020 may had affected the characteristics of mayors in smaller municipalities. Nonetheless, estimates are practically identical when we include these two years in the analysis, suggesting that the 15% salary increase did not have a substantial impact on the gender of mayors.

The DID specification is likely to account for time invariant differences in salaries, although we cannot discard that there was some unobserved shocked precisely at the time of the reform

that affected municipalities differently depending on the salary level.

5.4.4 Joint provision of basic public services

We also verify that our results are not driven by the 2010 reform requiring ‘mountain municipalities’ with less than 3,000 inhabitants to provide jointly some public services. We re-estimate our main analysis of the 2014 extension of term limits excluding this municipalities from our sample (see Table 9). The results are very similar to the estimates for the overall sample, confirming that they reflect the impact of the increase in term limits. For instance, the share of female mayors decreased by 4.5 p.p. in non-mountain municipalities with less than 3,000 inhabitants after 2014, relative to larger municipalities, compared to the 4.4 p.p. decrease observed in the overall sample.

5.5 Regression discontinuity design

The 3,000 and 5,000 population cutoffs have been historically used for a number of policies, potentially invalidating a regression discontinuity design (RDD) in this context. To investigate the validity of an RDD approach in this context, we examine (i) the distribution of municipalities around the thresholds and (ii) whether there were any discontinuities in the main outcome variables before the term limit reforms. Given that we find some violations of the standard RDD assumptions, we then report results relying on a difference-in-discontinuities approach.

5.5.1 Density function

Consistently with the existence of several policies that might affect the benefits of being above or below the thresholds, we observe some evidence of bunching above the 3,000 threshold (see Figure A.1, first column). This ‘manipulation’ of the population count is already observed at the 2001 census, suggesting that it is likely to reflect the effect of some pre-existing policies, such as differences in salaries. We also observe evidence of manipulation at this threshold in 2021, but not in 2011. Instead, we do not find any evidence of bunching at the 5,000 threshold (Figure A.1, second column)

5.5.2 Pre-existing discontinuities in outcome variables

We investigate the existence of discontinuities in our outcome variables of interest prior to the reform. We estimate the following RDD equation:

$$(4) \quad Y_{it} = f(\text{population}_{it}) + \beta \text{Treatment}_i + \varepsilon_{it}$$

where $f(\text{population}_{it})$ is a flexible function of the running variable population and Treatment is a dummy variable that takes value one for municipalities above the corresponding population cutoff. The sample includes information for the two electoral cycles before term limits where extended (i.e. years 2004-2013 for the 3,000 threshold and years 2012-2021 for the 5,000 threshold). We report results using the mean square error (MSE) optimal bandwidth for local

polynomials proposed by Calonico, Cattaneo and Titiunik (2014), we allow for different bandwidths above and below the cutoff, and we employ a uniform kernel, assigning equal weights to observations in the bandwidth regardless of the distance to the cutoff. Below we report results using a linear polynomial. Results are essentially unchanged if we consider instead a second order one.

We observe a pre-existing discontinuity at the 3,000 threshold in several of the outcome variables. As shown in Figure A.2, in municipalities just above 3,000 inhabitants there are significantly more candidates, and the share of female candidates and mayors is lower. However, we do not observe any significant discontinuities around the 5,000 threshold (see Figure A.4).

These pre-existent differences at the 3,000 threshold in terms of the gender of candidates and mayors contrast with the results of the balance tests that we conducted in the DID analysis. Prior to the 2014 reform, small and medium municipalities only differed significantly in terms of the number of candidates, but they had similar shares of female candidates and mayors (see Table ??). The inspection of the RD plots displayed in Figure A.2 suggest that this discrepancy reflects the existence of manipulation very close to the threshold, which leads to an exceptionally large share of female politicians just below the threshold. The DID analysis, by considering a larger set of municipalities, is less sensitive to this manipulation.

5.5.3 Difference-in-discontinuities estimates

In sum, the 3,000 threshold exhibits several violations of the standard RDD assumptions: there is evidence of manipulation of the population counts and some of the main outcome variables display discontinuities at the threshold. Interestingly, we do not observe these problems at the 5,000 threshold, despite being used in 2013 for the introduction of gender quotas in candidate lists and the large difference in salaries.

To address potential confounding factors at the threshold, researchers often employ a difference-in-discontinuities (RD-DID) approach. This method analyzes changes in the outcome variable over time, aiming to control for time-invariant confounding factors that may exist at the discontinuity (e.g. Gagliarducci and Nannicini (2013); De Benedetto and De Paola (2019)). The RD-DID relies on stronger assumptions than the standard regression discontinuity design (RDD). Similarly to DID, a potential threat to the validity of RD-DID is that, if municipalities above and below the threshold are somehow different, they might be affected differently by time-variant shocks. For instance, the economic cycle might potentially affect mayors' characteristics differently depending on the level of salaries. Compared to the DID approach, this method has the advantage that, by using the RDD framework, it allows for more credible control of the 'running' variable's role. However, this is typically achieved at the expense of lower statistical power.

We estimate equation 4 using ΔY_{it} as the outcome variable. As shown in Figures A.3 and A.5, the outcome variables in differences do not exhibit anymore any pre-existent discontinuities at the thresholds, providing support for the consistency of this empirical strategy.

Our main results are qualitatively similar, but less precise than the DID estimates (see Figures 8 and 9). According to the difference-in-discontinuities estimation, the extension of term limits decreased the share of female mayors by 2 p.p. (s.e.=3 p.p.) below the 3,000

threshold in 2014 and by 9 p.p. (s.e.=12 p.p.) below the 5,000 threshold in 2022. These point estimates are very similar to the DID ones (4 p.p. and 10 p.p. respectively), but standard errors are larger and it is not possible to reject that the effect is equal to zero.

6 Conclusion

Longer term limits have a negative impact on female representation in mayoral positions. Exploiting evidence from the extension of term limit in Italy in 2014 and 2022, we find that in absence of the extension, female representation in these roles would have been 4-10 p.p. higher. Longer term limits delayed access for new cohorts to mayoral roles, which in turn slowed down growth in female representation, especially in contexts where female representation at lower levels of the hierarchy was higher, and in the presence of gender quotas candidate lists. Our analysis suggests that the effect is driven mainly by the replacement of incumbents by younger candidates, who are more likely to be women, rather than to potential gender differences in politicians' preferences for longer tenure.

Persistence perpetuated by electoral structures that favor incumbents can contribute to a gap between top and entry-level political positions. A representative class not aligned with voters' changing preferences may persist even if stereotypes or agency issues within parties are absent. Some authors have shown that political turnover has a positive impact on economic growth (Marx, Pons and Rollet, 2022). Our evidence suggests an additional benefit - it facilitates a quicker convergence, which might be relevant in times of rapid societal change. In a context where policymakers around the world have been striving to achieve equal representation at top levels of the political hierarchy, term limits can be an effective gender representation policy. Moreover, they complement the impact of traditional policies such as gender quotas at the entry-level of the political hierarchy.

Our work leaves a number of open questions. First, the effect of term limits may be asymmetric. We study the impact of lengthening term limits. It is possible that reductions of term limits, as in the US in the 1990s, do not have an immediate effect, as there might not be a pool of female candidates readily available. Further research is needed on the impact of removing or shortening term limits. Second, we are able to study the short term effect of the reform, only within two elections. In the longer term, exposure effects may potentially amplify (or reduce) its impact. Third, as discussed in section 2, the effects of terms limits are likely to depend on the characteristics and preferences of voters, party members and politicians. In contexts where voters and parties are more biased against women, term limits may be less effective. Fourth, our work focuses on term limits' ability to promote female representation in politics, as opposed to race, ethnicity, and other kinds of diversity. While we expect our results to be relevant also for these other dimensions, more work is needed. Finally, our work may be also relevant for other labor markets where there are barriers to new cohorts accessing top positions. Long pipelines or structures that favor incumbents' persistence can have negative consequences for female representation (Arellano-Bover et al., 2024). For instance, policies that accelerate the career of younger cohorts in the corporate world, such as term limits in executive boards, may

increase female representation in these positions.¹⁹

¹⁹Some authors have supported the introduction of term limits in corporate boards in the US to increase female representation although, up to the best of our knowledge, no causal evidence is available (e.g. [Rosenblum and Nili \(2019\)](#)).

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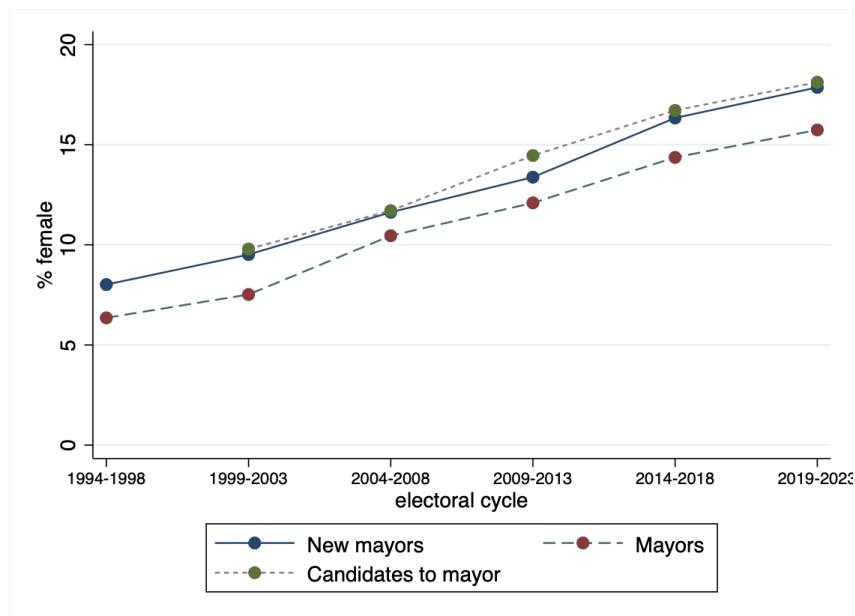
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Figure 1: Share of female politicians, different levels



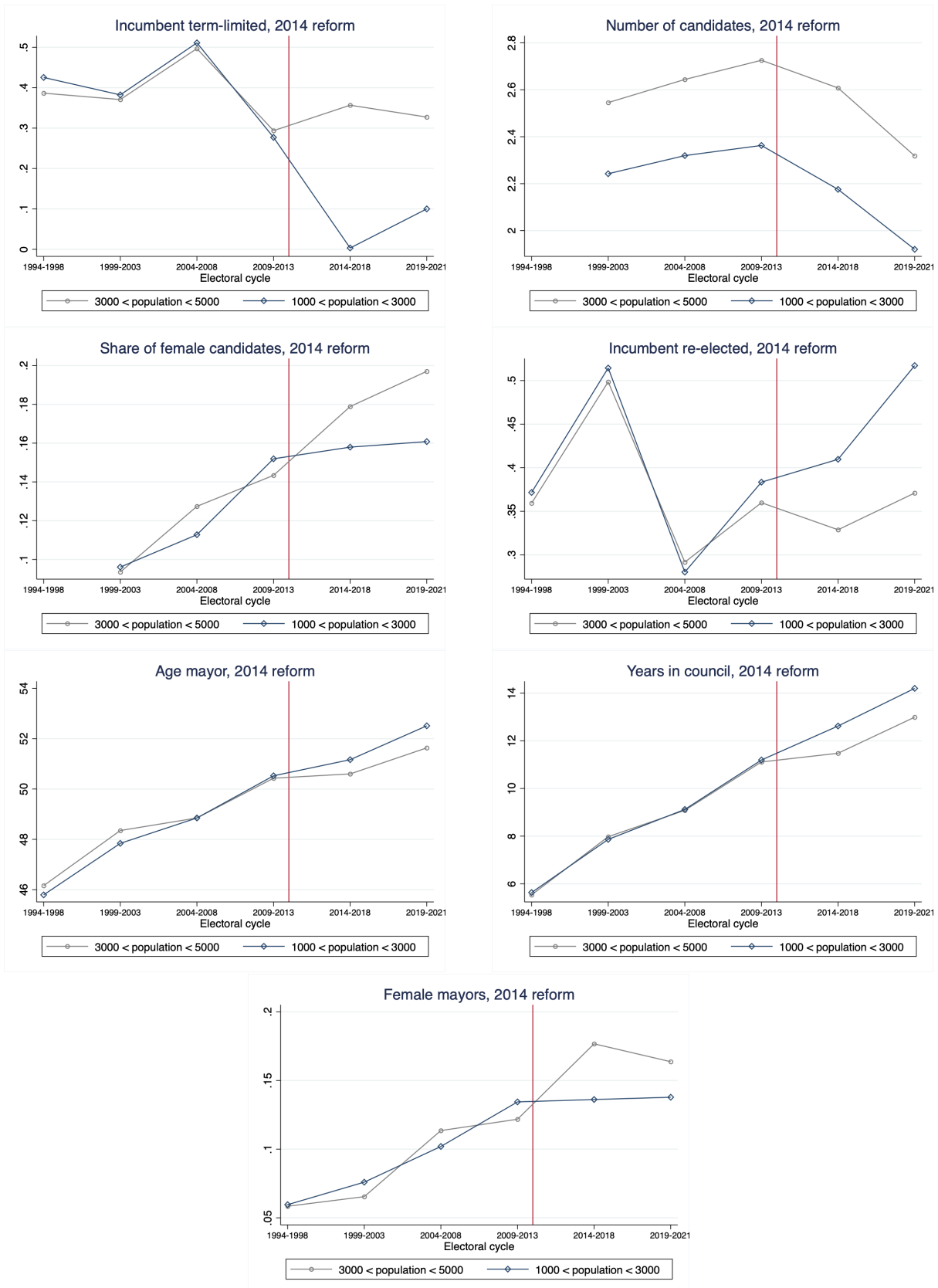
Note: The figure shows the evolution of the share of women at different levels of the local government: among mayors (short-dash line), executives (dash line), and councillors (solid line). Data is presented as yearly averages of municipalities having an election within the year on the x-axis. The two vertical lines indicate the introduction in 2013 of a gender quota for councillor candidates in municipalities with more than 5,000 inhabitants and the introduction in 2014 of a gender quota for executive committees in municipalities with more than 3,000 inhabitants.

Figure 2: Share of women among mayoral candidates, new mayors and incumbents.



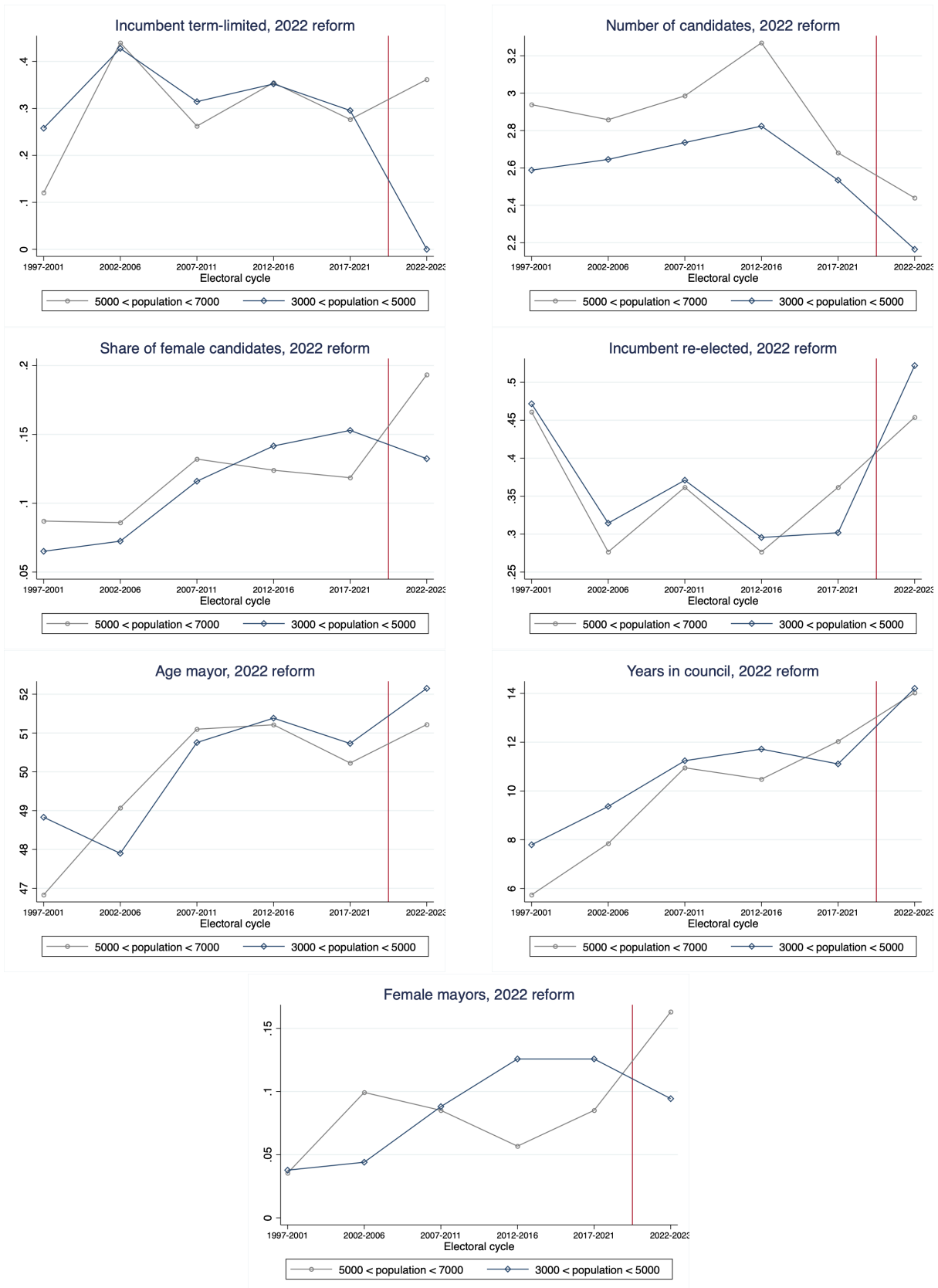
Note: The figure presents the share of women at different levels, grouped by election cycle. The solid line plots the average share of women among newly elected mayors, the dash line among all mayors, and the short-dash line among candidates to mayor.

Figure 3: Main characteristics over time, small and medium municipalities



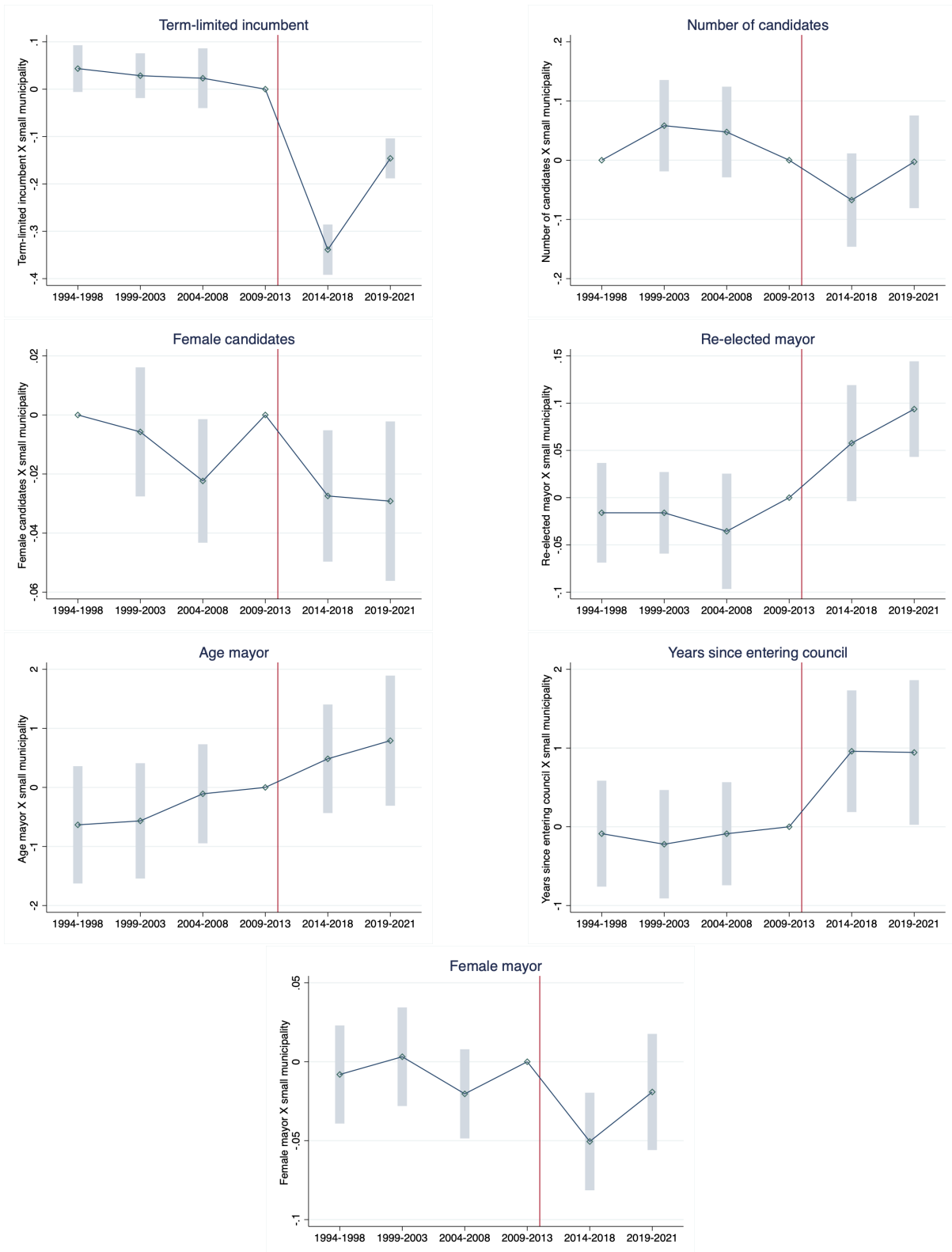
Note: The above figures provide the average value for the main outcome variables in different electoral cycles by size of the municipality. Small municipalities (more than 1,000 and less than 3,000 inhabitants) are represented by circle gray bins and medium ones (more than 3,000 and less than 5,000 inhabitants) by diamond navy bins. The vertical line at year 2014 depicts the time at which term limits were extended in municipalities below 3,000 inhabitants.

Figure 4: Main characteristics over time, medium and large municipalities



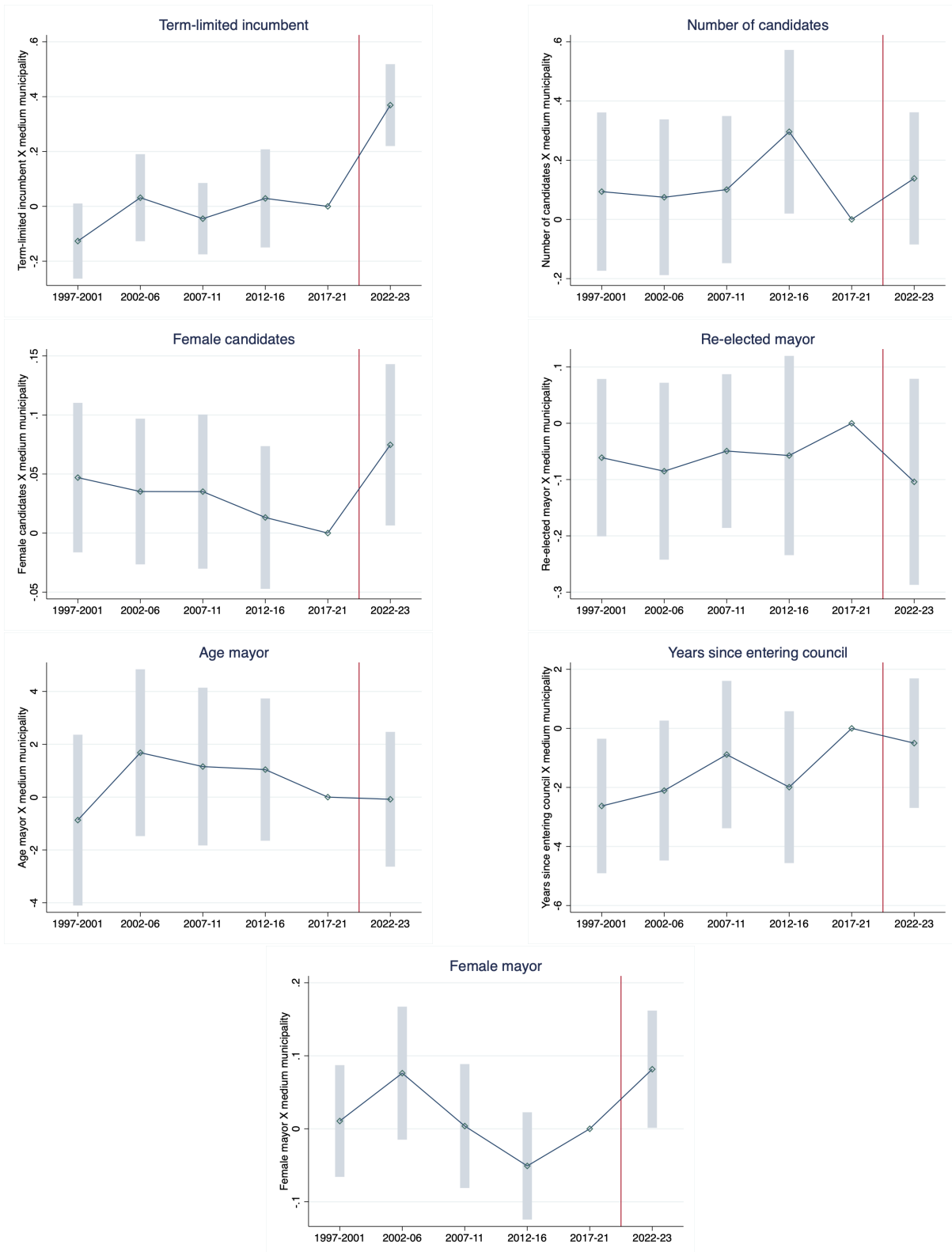
Note: The above figures display the main characteristics over time for two groups of municipalities: with more than 3,000 and less than 5,000 inhabitants ('medium') and with more than 5,000 and less than 7,000 ('large'). Each bin represents the average within an election cycle (5 years). The vertical line at year 2022 depicts the time when term limits were extended in municipalities with less than 5,000 and more than 3,000 inhabitants.

Figure 5: Event study graphs, 2014 reform



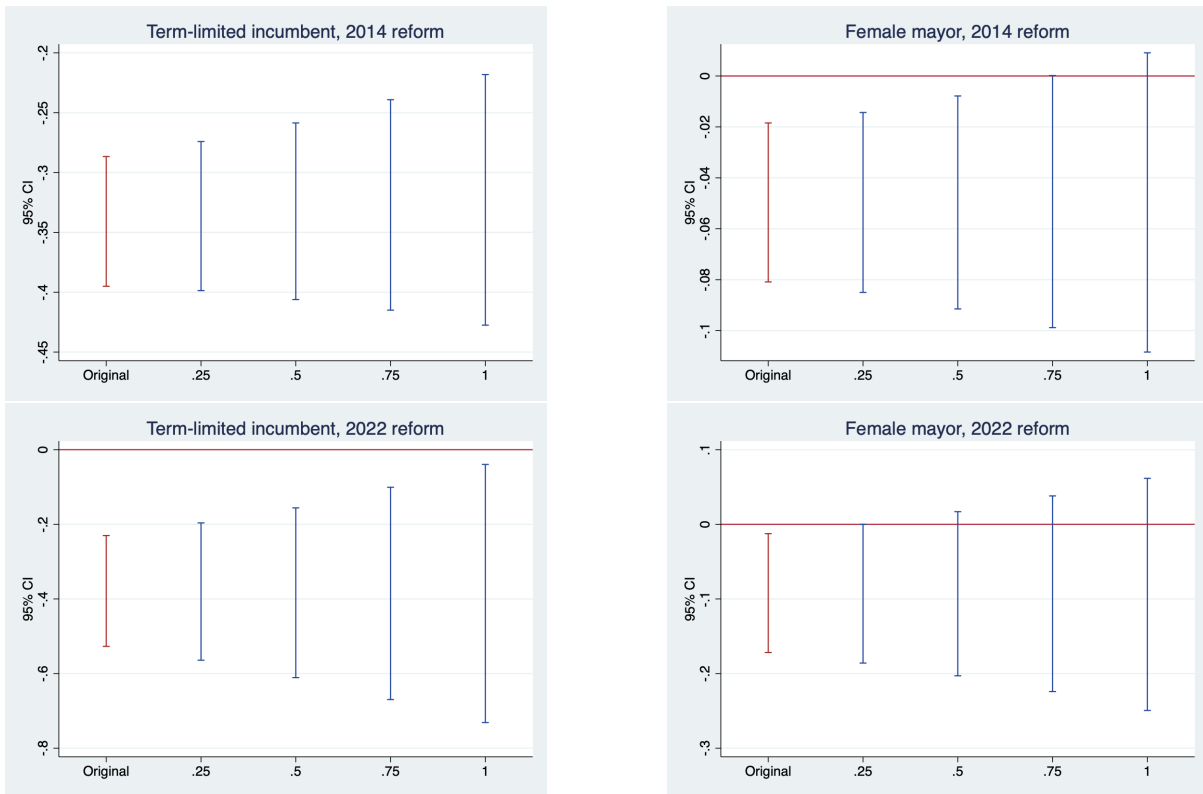
Note: The figure presents event study graphs for the 2014 term extension reforms, using estimates from equation [1](#). Coefficients are normalized to zero in t-1. Bars represent 95% confidence intervals. The red vertical line represents the time of reform, 2014.

Figure 6: Event study graphs, 2022 reform



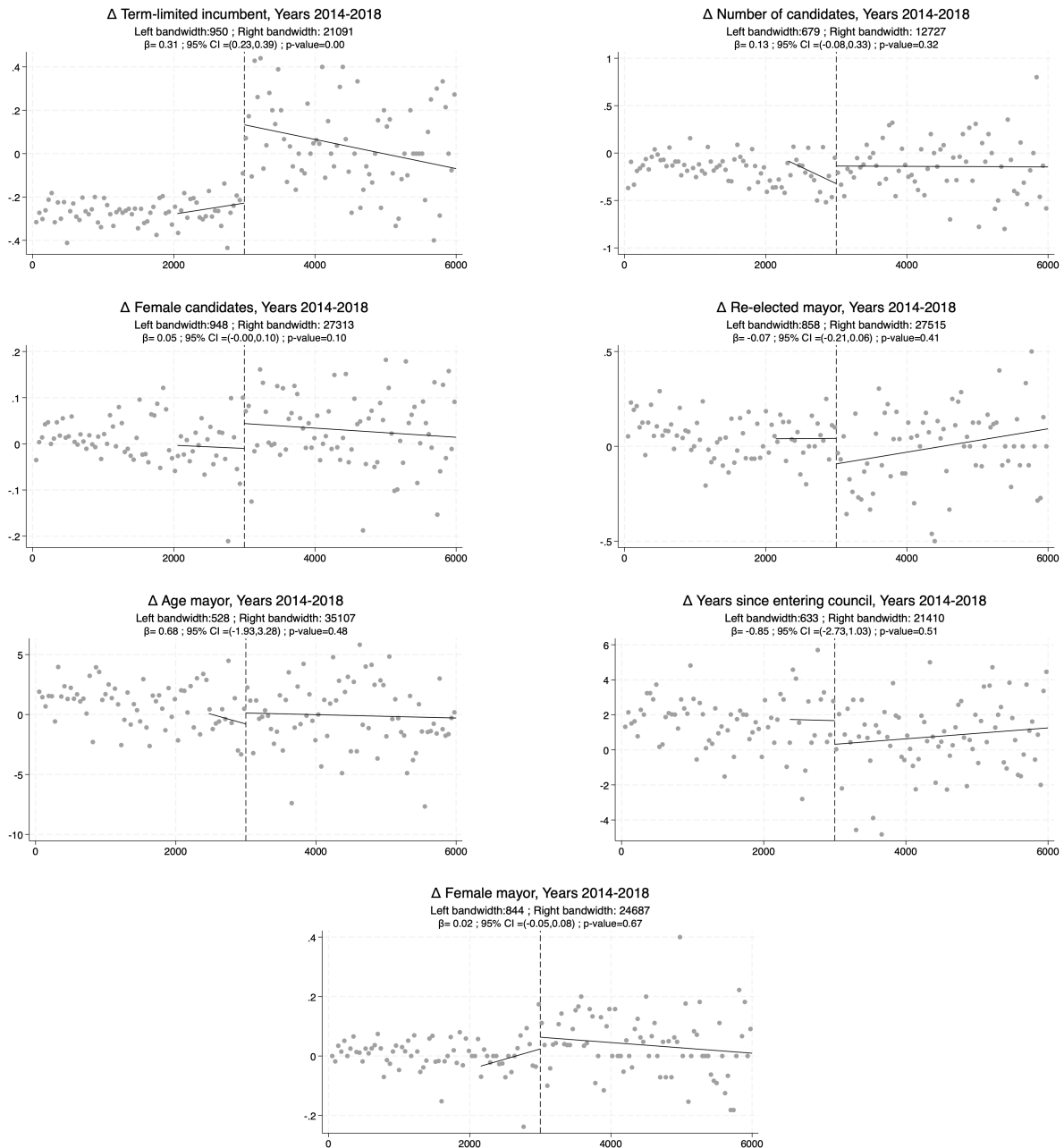
Note: The figure presents event study graphs for the 2022 term extension reforms, using estimates from equation [1](#). Coefficients are normalized to zero in t-1. Bars represent 95% confidence intervals. The red vertical line represents the time of reform, 2022.

Figure 7: ‘Honest’ DID bounds



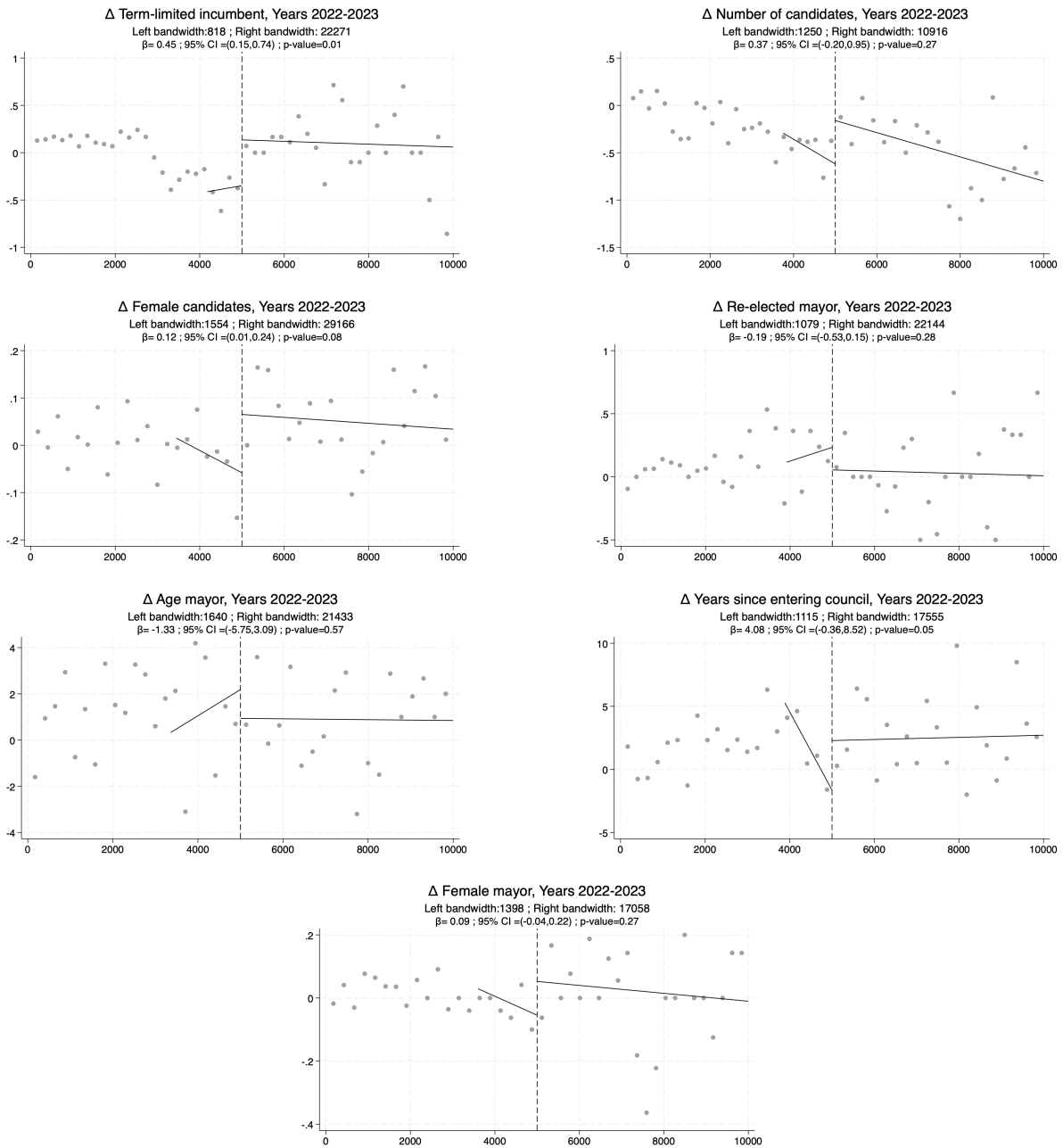
Note: The above figures report sensitivity analysis based on [Rambachan and Roth \(2023\)](#). Whiskers represent 95% confidence intervals for the corresponding estimate and the x-axis represents different values of \bar{M} , the sensitivity parameter for the deviation allowed in the parallel trends assumption, relative to the maximum deviation observed in the pre-treatment period.

Figure 8: Difference-in-discontinuities, 3000 cutoff, years 2014-2018



Note: The above Regression Discontinuity (RD) plots report binned sample means for several outcome variables in differences, e.g. Δ *Term-limited incumbent* represents the difference between the value of this variable in the election that took place in year t and its value in the previous election (typically in $t - 5$). The RD plots report information above and below the 3,000 threshold (i.e. the population threshold for the 2014 reform, below which term limits were extended from two to three terms), in period 2014-2018. The plots also report the results from a regression discontinuity estimation, using the MSE optimal bandwidth proposed by [Calonico, Cattaneo and Titiunik \(2014\)](#), allowing for different bandwidths above and below the cutoff, a first-degree polynomial and a uniform kernel.

Figure 9: Difference-in-discontinuities, 5000 cutoff, years 2022-2023



Note: The above Regression Discontinuity (RD) plots report binned sample means for several outcome variables in differences, e.g. Δ *Term-limited incumbent* represents the difference between the value of this variable in the election that took place in year t and its value in the previous election (typically in $t - 5$). The RD plots include information above and below the 5,000 threshold (i.e. the population threshold for the 2022 reform, below which term limits were extended from two to three consecutive terms), in period 2022-2023. The plots also report the results from a regression discontinuity estimation, using the MSE optimal bandwidth proposed by [Calonico, Cattaneo and Titiunik \(2014\)](#), allowing for different bandwidths above and below the cutoff, a first-degree polynomial and a uniform kernel.

Table 1: Descriptive statistics

	N	Mean	St. dev.	Min.	Max.
Turnout	22358	0.75	0.11	0.23	1
Female voters	18793	0.50	0.013	0.38	1
Number of candidates	18749	2.42	0.82	1	7
Female candidates	18744	0.14	0.24	0	1
Age mayor	23273	49.1	10.2	19	91
Years of education mayor	22523	14.7	3.40	0	22
Years in council mayor	23273	9.62	7.95	0	38
Female mayor	23273	0.11	0.31	0	1
Re-elected mayor	23185	0.39	0.49	0	1
Term-limited incumbent	22590	0.31	0.46	0	1
Same surname	23273	0.014	0.12	0	1

Note: The Table presents summary statistics at the ‘municipality*election year’ level for 4,068 Italian municipalities with more than 1,000 inhabitants and less than 7,000 between 1993 and 2023. Information on candidates and voters is only available from 1994. See description of variables in Data section.

Table 2: Balance tests: treatment and control groups before the reforms

Panel A. Before the 2014 reform					
	3,000 < population < 5,000		1,000 < population < 3,000		
	N	Mean	N	Mean	Difference
Term-limited incumbent	3917	0.39	8715	0.40	0.010
Number of candidates	2931	2.64	6562	2.31	-0.329***
Female candidates	2935	0.12	6562	0.12	-0.002
Re-elected mayor	3917	0.38	8715	0.39	0.008
Age mayor	3919	48.41	8721	48.23	-0.200
Years since entering council	3919	8.38	8721	8.43	0.016
Female mayor	3919	0.09	8721	0.09	0.003

Panel B. Before the 2022 reform					
	5,000 < population < 7,000		3,000 < population < 5,000		
	N	Mean	N	Mean	Difference
Term-limited incumbent	2755	0.34	4873	0.36	0.019**
Number of candidates	2631	2.90	4681	2.58	-0.315***
Female candidates	2628	0.15	4685	0.15	-0.008
Re-elected mayor	2755	0.38	4873	0.37	-0.010
Age mayor	2773	49.24	4890	49.75	0.414
Years since entering council	2773	9.84	4890	10.23	0.285
Female mayor	2773	0.11	4890	0.12	0.006

Note: The two panels report a balance test for municipalities in the control group (columns 2 and 3) and in the treatment group (columns 4 and 5) for the 2014 reform (Panel A) and the 2022 reform (Panel B). Panel A provides information for years 1993-2013 for municipalities with more than 3,000 and less than 5,000 inhabitants according to the 2011 census (columns 2-3) and for municipalities with more than 1,000 and less than 3,000 (columns 4-5). Panel B provides information for years 1993-2021 for municipalities with more than 5,000 and less than 7,000 inhabitants according to the 2011 census (columns 2-3) and municipalities with more than 3,000 and less than 5,000 inhabitants (columns 4-5). In both panels, column 6 indicates the difference between the corresponding treatment and control groups, conditional on years fixed effects, with standard errors clustered at the municipality level. Stars indicate whether this difference is significant: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Impact of the extension of term limits, 2014 and 2022 reforms

Panel A. Extension of term limits in 2014							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Incumbent term-limited	Number candidates	Female candidates	Incumbent re-elected	Years in council	Age mayor	Female mayor
Three terms	-0.32*** (0.01)	-0.08*** (0.03)	-0.02** (0.01)	0.11*** (0.02)	1.12*** (0.35)	0.86* (0.45)	-0.04** (0.01)
Observations	11,118	11,102	11,100	11,118	11,136	11,136	11,136
Mean	0.353	2.505	0.188	0.345	12.01	50.81	0.175
Panel B. Extension of term limits in 2022							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Incumbent term-limited	Number candidates	Female candidates	Incumbent re-elected	Years in council	Age mayor	Female mayor
Three terms	-0.36*** (0.06)	-0.06 (0.10)	-0.08** (0.03)	0.17** (0.08)	0.65 (1.07)	0.65 (1.23)	-0.10*** (0.04)
Observations	3,066	3,091	3,085	3,066	3,114	3,114	3,114
Mean	0.338	2.407	0.182	0.448	13.90	51.80	0.160

Note: Three terms is a dummy that takes value one when the term limit has been extended to three terms. Panel A includes results from regressions in the sample of elections between 2004 and 2019 in municipalities with more than 1,000 and less than 5,000 inhabitants. Panel B includes elections between 2013 and 2023 in municipalities with more than 3,000 and less than 7,000 inhabitants. Standard errors clustered at the municipality level in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 4: Impact of 2014 reform, by incumbent's term

Panel A. Incumbent in 2nd term.							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Incumbent term-limited	Number candidates	Female candidates	Incumbent re-elected	Years in council	Age mayor	Female mayor
Three terms	-0.98*** (0.02)	-0.13** (0.06)	-0.02 (0.02)	0.26*** (0.02)	2.23*** (0.67)	-0.02 (0.88)	-0.07** (0.03)
Observations	3,494	3,488	3,489	3,494	3,494	3,494	3,494
Mean	0.979	2.660	0.187	0.00587	10.70	50.38	0.220
Panel B. Incumbent in 1st term.							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Incumbent term-limited	Number candidates	Female candidates	Incumbent re-elected	Years in council	Age mayor	Female mayor
Three terms	0.00 (0.01)	-0.07 (0.04)	-0.02 (0.01)	-0.02 (0.03)	0.35 (0.43)	0.71 (0.53)	-0.03 (0.02)
Observations	5,680	5,665	5,667	5,680	5,687	5,687	5,687
Mean	0	2.582	0.175	0.525	12.16	50.73	0.156

Note: The table presents results from estimation of equation (2) on the sub-sample of municipalities where the incumbent was in the second term (Panel A) and in the municipalities where the incumbent was in the first term (Panel B). “Three terms” takes value one when a municipality is affected by the reform. In all columns the sample includes information from elections between 2004 and 2018 in municipalities with more than 1,000 and less than 5,000 inhabitants. The sample only includes regions with ordinary status. Standard errors clustered at the municipality level in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 5: Impact of 2022 reform, by incumbent's term

Panel A. Incumbent in 2nd term.							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Incumbent term-limited	Number candidates	Female candidates	Incumbent re-elected	Years in council	Age mayor	Female mayor
Three terms	-0.90*** (0.04)	-0.31* (0.18)	-0.10* (0.05)	0.38*** (0.08)	4.42* (2.31)	2.66 (2.45)	-0.25*** (0.08)
Observations	252	252	252	252	252	252	252
Mean	0.961	2.569	0.227	0.0784	11.37	50.31	0.255
Panel B. Incumbent in 1st term.							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Incumbent term-limited	Number candidates	Female candidates	Incumbent re-elected	Years in council	Age mayor	Female mayor
Three terms	-0.02 (0.05)	0.06 (0.13)	-0.05 (0.04)	-0.05 (0.08)	-1.34 (1.13)	-0.08 (1.42)	-0.01 (0.04)
Observations	516	527	527	516	530	530	530
Mean	0	2.330	0.162	0.645	15.01	51.57	0.113

Note: The table presents results from estimation of Equation 2 on the sub-sample of municipalities where the incumbent was in the second term (Panel A) and in the municipalities where the incumbent was in the first term (Panel B). “Three terms” refers to the treatment - extension to three term limits - and takes value one when a municipality is affected by the reform. In all columns the sample includes information from elections between 2013 and 2023 in municipalities with more than 3,000 and less than 7,000 inhabitants. The sample only includes ordinary regions. Standard errors clustered at the municipality level in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 6: Impact of the 2014 reform, by share of women in the previous executive council

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Incumbent term-limited	Number candidates	Female candidates	Mayor re-elected	Years in council	Age mayor	Female mayor
Three terms	-0.29*** (0.01)	-0.03 (0.03)	0.01 (0.01)	0.08*** (0.02)	0.74* (0.41)	0.10 (0.51)	0.04** (0.02)
Three terms X Women executive	-0.05 (0.04)	-0.25** (0.10)	-0.18*** (0.04)	0.12* (0.06)	1.07 (1.39)	2.75* (1.61)	-0.42*** (0.06)
Observations	12,337	12,305	12,302	12,337	12,342	12,342	12,342
Mean	0.315	2.458	0.182	0.362	12.46	51.17	0.165

Note: In all columns the sample includes information from elections between 2004 and 2018 in municipalities with more than 1,000 and less than 5,000 inhabitants, in regions without special status. Standard errors clustered at the municipality level in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 7: Short- and midterm impact of the extension of term limits in 2014

Panel A. First cycle of elections							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Incumbent term-limited	Number candidates	Female candidates	Incumbent re-elected	Years in council	Age mayor	Female mayor
Three terms	-0.35*** (0.02)	-0.09** (0.04)	-0.02* (0.01)	0.08*** (0.02)	1.03*** (0.37)	0.55 (0.46)	-0.04** (0.02)
Observations	9,333	9,309	9,312	9,333	9,342	9,342	9,342
Mean	0.356	2.610	0.179	0.328	11.62	50.61	0.178
Panel B. Second cycle of elections							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Incumbent term-limited	Number candidates	Female candidates	Incumbent re-elected	Years in council	Age mayor	Female mayor
Three terms	-0.22*** (0.02)	-0.06 (0.04)	-0.03* (0.01)	0.13*** (0.02)	0.78* (0.47)	0.69 (0.58)	-0.02 (0.02)
Observations	8,712	8,689	8,686	8,712	8,721	8,721	8,721
Mean	0.330	2.321	0.196	0.371	13.15	51.67	0.165

Note: Three terms is a dummy that takes value one when the term limit has been extended to three terms. Panel A includes results from regressions in the sample of elections between 2004 and 2018 in municipalities with more than 1,000 and less than 5,000 inhabitants. Panel B includes elections between 2004 and 2013 and between 2019 and 2021. Standard errors clustered at the municipality level in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 8: Term limits versus gender quotas in council candidate lists

	(1)	(2)	(3)	(4)	(5)	(6)
	Female	Female	Female	Female	Female	Female
	mayor	mayor	mayor	council	council	council
Three terms	-0.10*** (0.04)	-0.10** (0.04)	-0.09* (0.05)	-0.03** (0.01)	0.03** (0.01)	0.02 (0.02)
Council gender quota		0.01 (0.02)			0.14*** (0.01)	
1st election with quota			-0.02 (0.02)			0.14*** (0.01)
2nd election with quota			0.04 (0.03)			0.13*** (0.01)
3rd election with quota			-0.03 (0.07)			0.13*** (0.03)
Observations	4,642	4,642	4,642	4,629	4,629	4,629
Mean	0.160	0.160	0.160	0.426	0.426	0.426

Note: Three terms is a dummy that takes value one when the term limit has been extended to three terms. The dummy ‘Council gender quota’ takes value one for municipalities above 5,000 inhabitants, in year 2013 and after. Dummies ‘1st election with quota’, ‘2nd election with quota’ and ‘3rd election with quota’ take value one respectively for elections in years 2013-2017, years 2018-2022 and for year 2023. All regressions include sets of dummies for years and for municipalities. In all columns the sample includes elections between 2008 and 2023 in municipalities with more than 3,000 and less than 7,000 inhabitants. Standard errors clustered at the municipality level in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

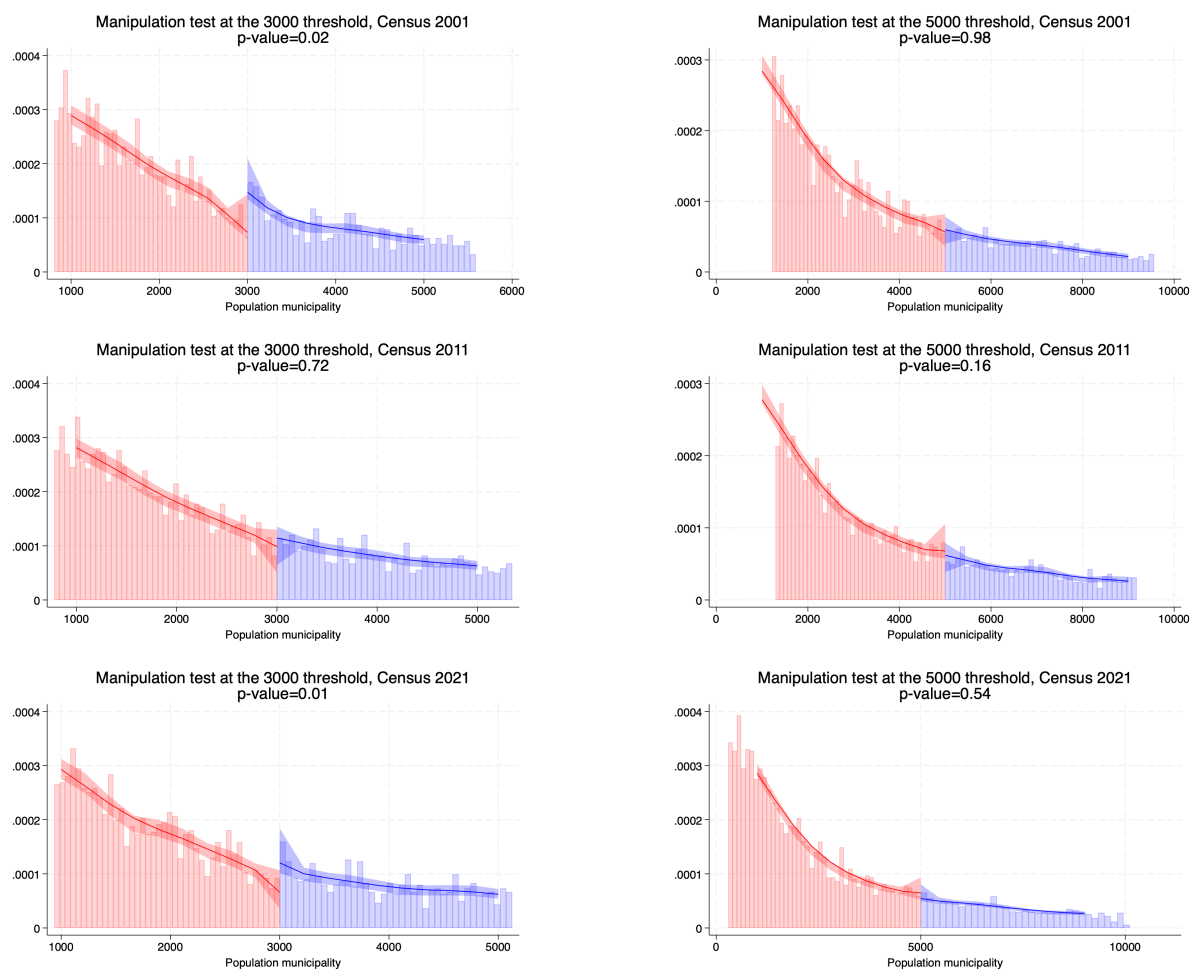
Table 9: Impact of the extension of term limits in 2014, excluding ‘mountain municipalities’

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Incumbent term-limited	Number candidates	Female candidates	Incumbent re-elected	Years in council	Age mayor	Female mayor
Three terms	-0.37*** (0.02)	-0.16*** (0.04)	-0.02* (0.01)	0.04 (0.03)	1.24*** (0.45)	1.28** (0.56)	-0.05** (0.02)
Observations	8,693	6,961	6,963	8,903	8,910	8,910	8,910
Mean	0.354	2.665	0.186	0.346	11.29	50.31	0.183

Note: Three terms is a dummy that takes value one when the term limit has been extended to three terms. All columns include results from regressions in the sample of elections between 1993 and 2018 in municipalities with more than 1,000 and less than 5,000 inhabitants that are not officially considered as ‘mountain municipalities’. Standard errors clustered at the municipality level in parentheses. *** p<0.01, ** p<0.05, * p<0.1

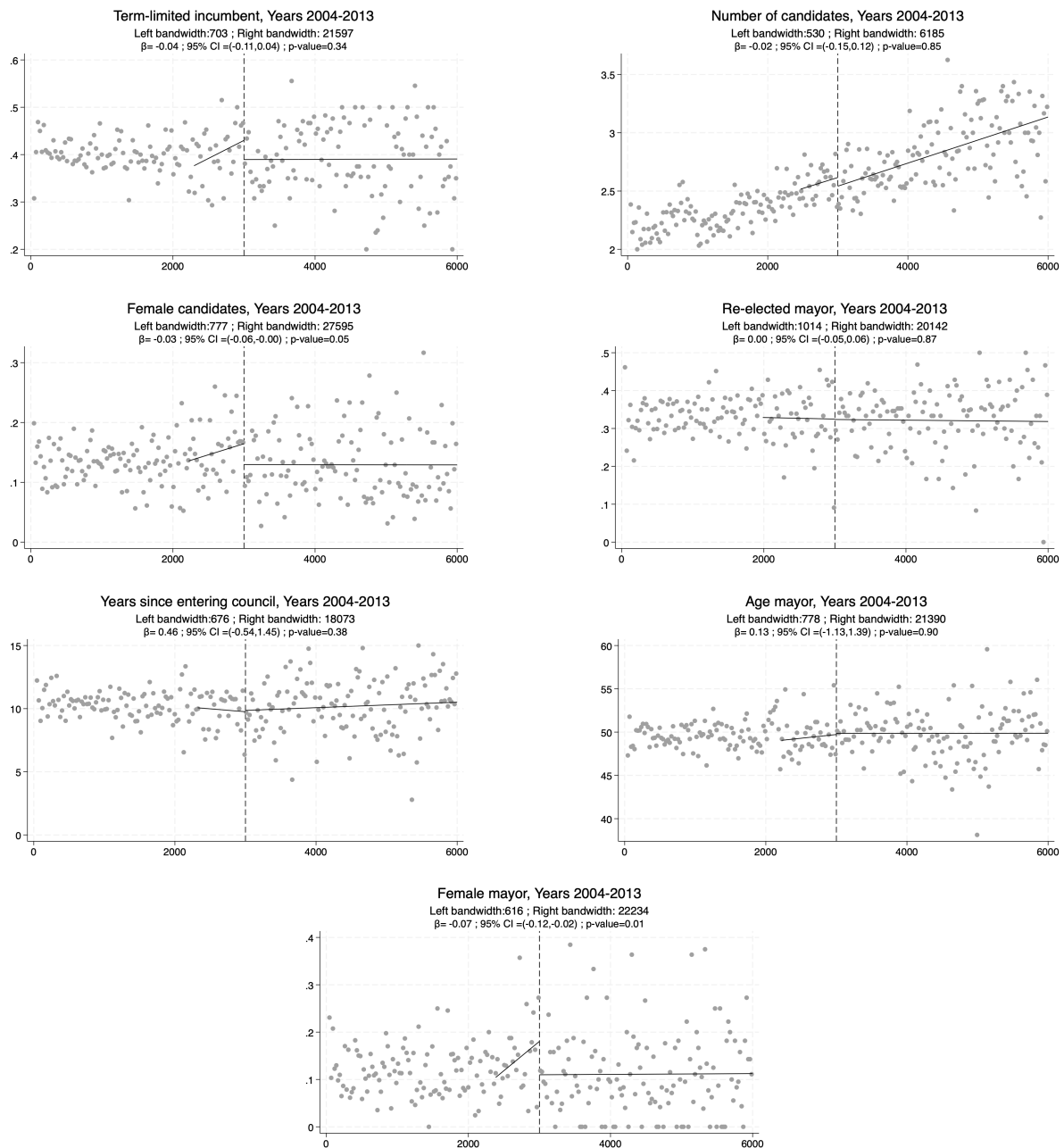
A Appendix Figures

Figure A.1: Density functions; 3,000 and 5,000 inhabitants; census 2001, 2011 and 2021



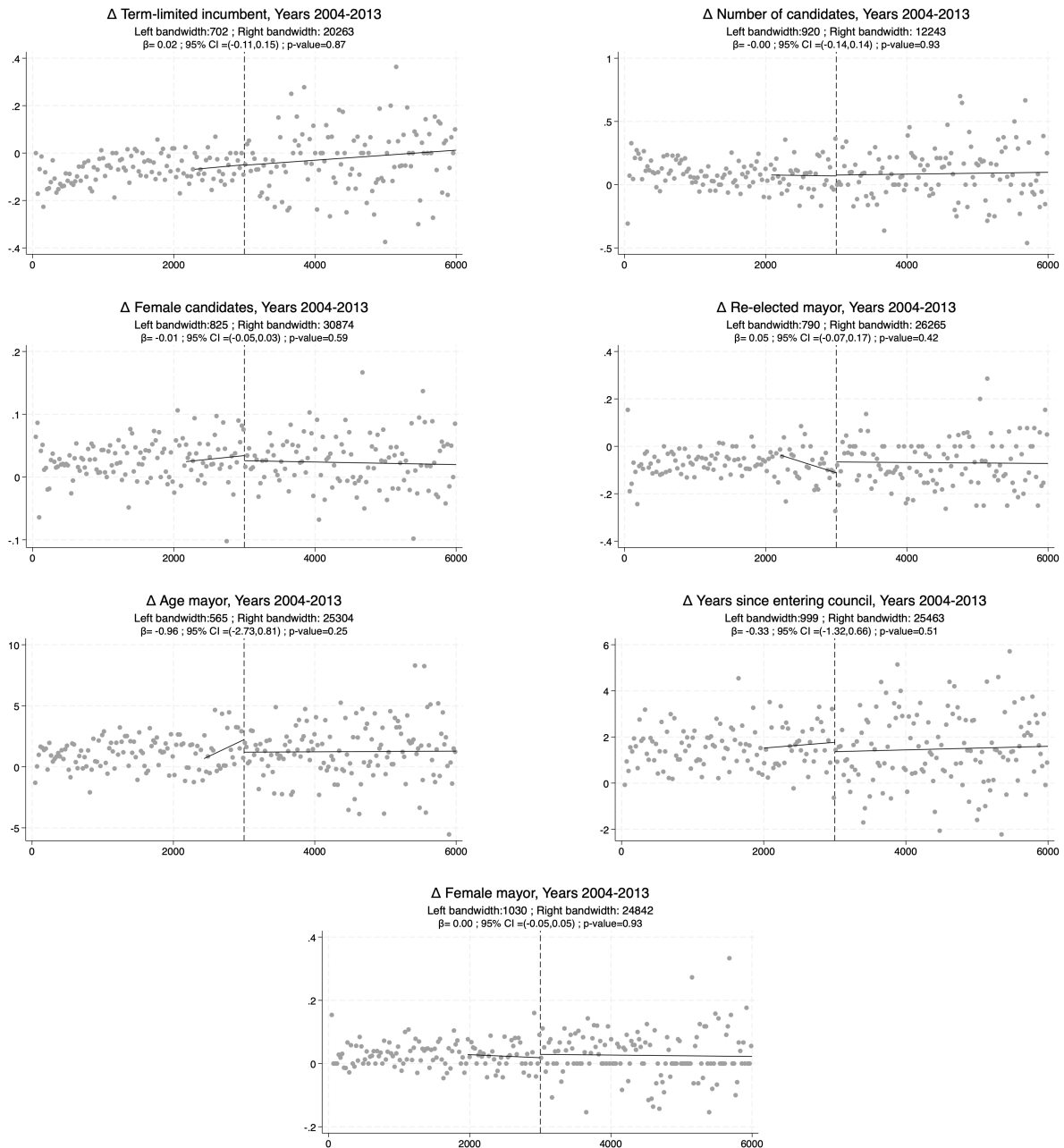
Note: The above figures report the results from manipulation testing procedures using the local polynomial density estimators proposed in Cattaneo, Jansson and Ma (2020) and the robust bias-corrected statistic. The first (second) column reports tests at the 3,000 (5,000) threshold. In top row population is measured using the 2001 census, in the middle using the 2011 census, and in the bottom using the 2021 census.

Figure A.2: Placebo regression discontinuity, 3000 population threshold, years 2004-2013



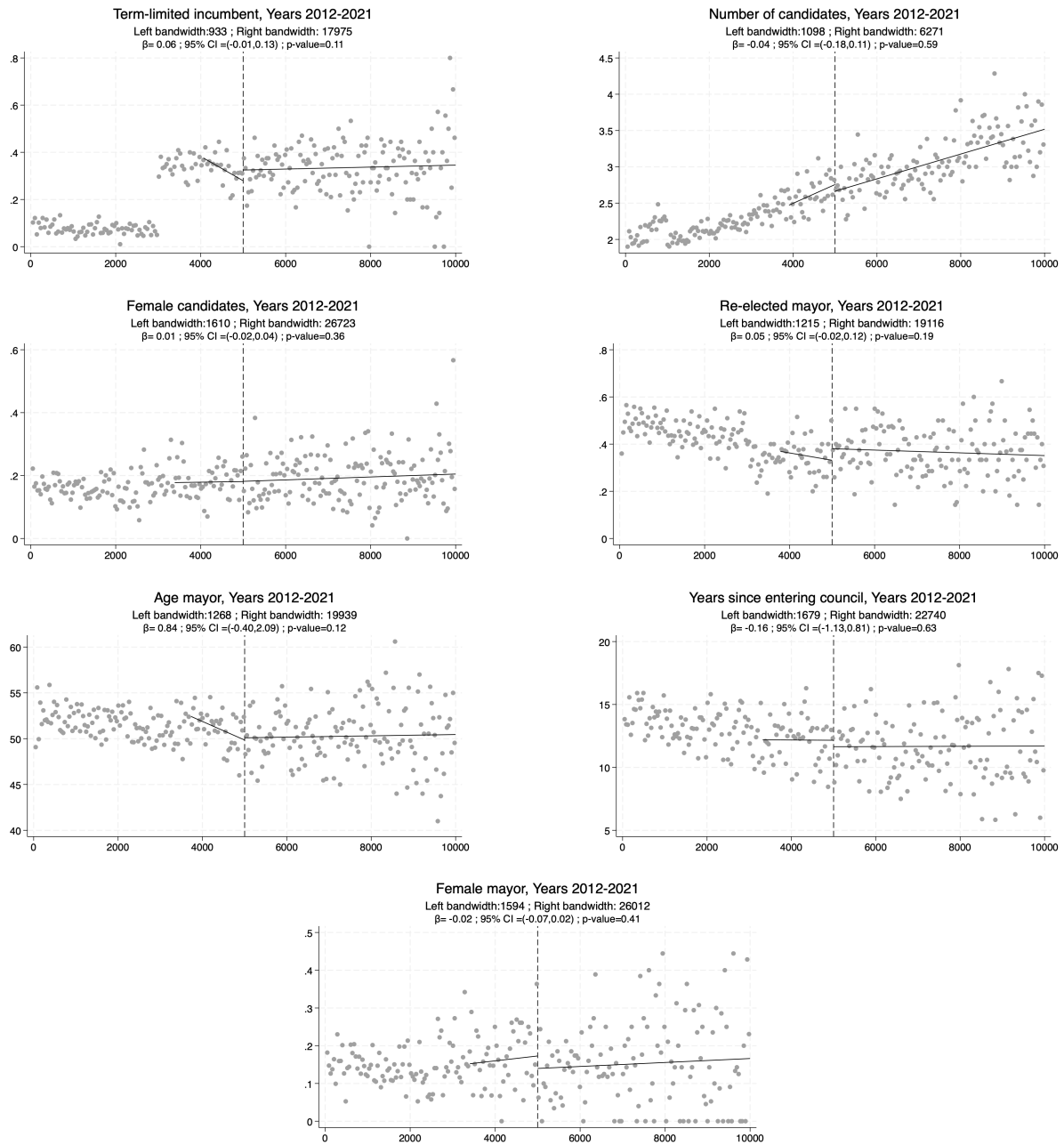
Note: The above Regression Discontinuity (RD) plots report binned sample means for several outcome variables, above and below the 3,000 threshold in period 2004-2013 (i.e. before the 2014 reform, when term limits were extended from two to three consecutive terms in municipalities below 3,000 inhabitants). The plots also report the results from a regression discontinuity estimation, using the MSE optimal bandwidth proposed by [Calonico, Cattaneo and Titiunik \(2014\)](#), allowing for different bandwidths above and below the cutoff, a first-degree polynomial and a uniform kernel.

Figure A.3: Placebo difference-in-discontinuities, 3000 cutoff, years 2004-2013



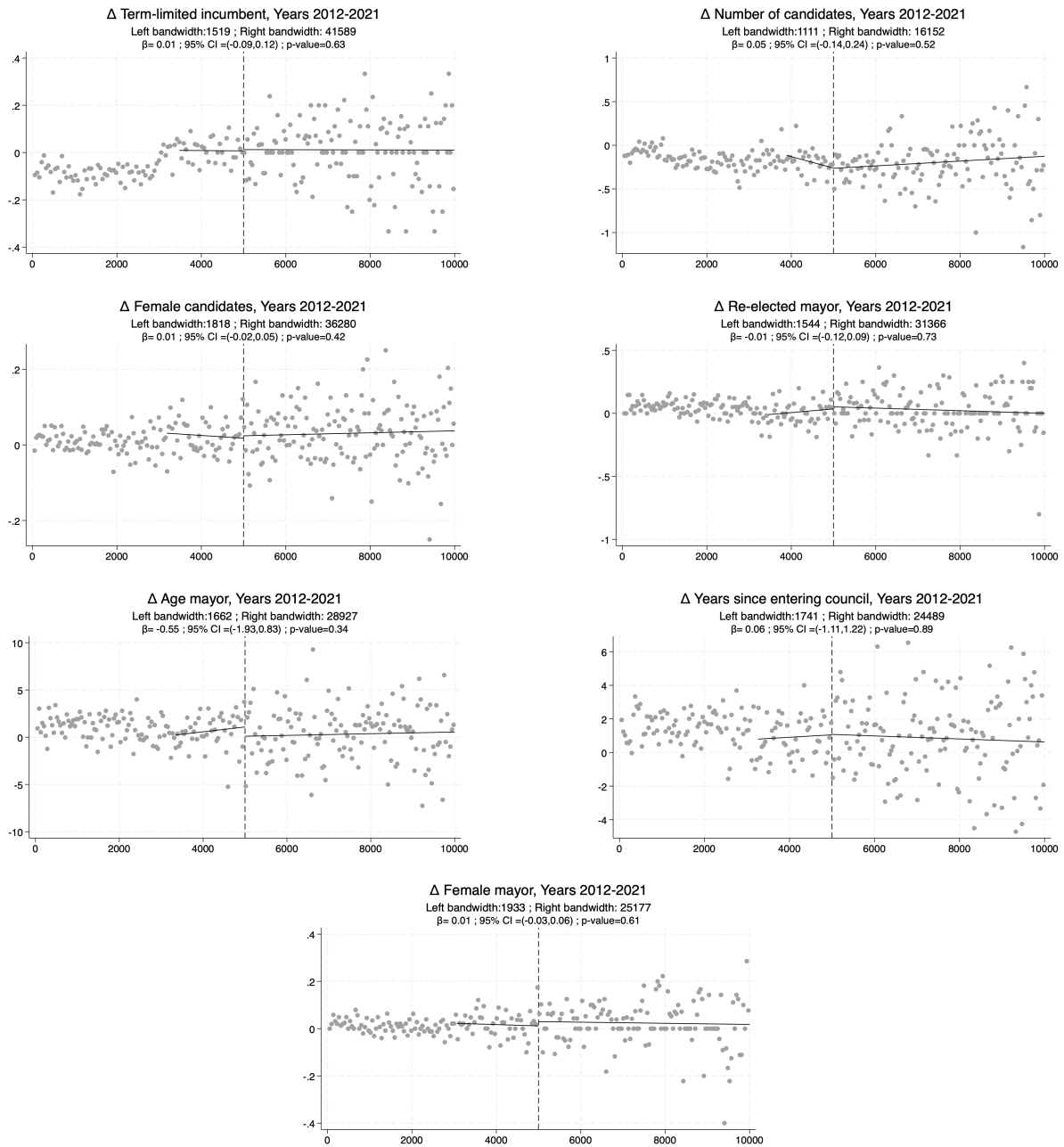
Note: The above Regression Discontinuity (RD) plots report binned sample means for several outcome variables in differences, e.g. Δ *Term-limited incumbent* represents the difference between the value of this variable in the election that took place in year t and its value in the previous election (typically in $t - 5$). The RD plot includes information above and below the 3,000 threshold in period 2004-2013 (i.e. before the 2014 reform, when term limits were extended from two to three consecutive terms in municipalities below 3,000 inhabitants). The plots also report the results from a regression discontinuity estimation, using the MSE optimal bandwidth proposed by [Calonico, Cattaneo and Titiunik \(2014\)](#), allowing for different bandwidths above and below the cutoff, a first-degree polynomial and a uniform kernel.

Figure A.4: Placebo regression discontinuity, 5000 cutoff, years 2012-2021



Note: The above Regression Discontinuity (RD) plots report binned sample means for several outcome variables, above and below the 5,000 threshold in period 2012-2021 (i.e. before the 2022 reform, when term limits were extended from two to three consecutive terms in municipalities below 5,000 inhabitants). The plots also report the results from a regression discontinuity estimation, using the MSE optimal bandwidth proposed by [Calonico, Cattaneo and Titiunik \(2014\)](#), allowing for different bandwidths above and below the cutoff, a first-degree polynomial and a uniform kernel.

Figure A.5: Placebo difference-in-discontinuities, 5000 cutoff, years 2012-2021



Note: The above Regression Discontinuity (RD) plots report binned sample means for several outcome variables in differences, e.g. Δ *Term-limited incumbent* represents the difference between the value of this variable in the election that took place in year t and its value in the previous election (typically in $t - 5$). The RD plots report information above and below the 5,000 threshold in period 2012-2021 (i.e. the population threshold for the 2022 reform, below which term limits were extended from two to three terms). The plots also report the results from a regression discontinuity estimation, using the MSE optimal bandwidth proposed by Calonico, Cattaneo and Titiunik (2014), allowing for different bandwidths above and below the cutoff, a first-degree polynomial and a uniform kernel.

B Appendix Tables

Table B.1: Impact of the extension of term limits, 2014 and 2022 reforms, using a longer panel

Panel A. Extension of term limits in 2014, sample 1993-2019							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Incumbent term-limited	Number candidates	Female candidates	Incumbent re-elected	Years in council	Age mayor	Female mayor
Three terms	-0.33*** (0.01)	-0.09*** (0.03)	-0.02** (0.01)	0.10*** (0.02)	1.14*** (0.32)	1.12*** (0.42)	-0.04*** (0.01)
Observations	17,513	14,376	14,375	17,969	18,006	18,006	18,006
Mean	0.353	2.505	0.188	0.345	12.01	50.81	0.175

Panel B. Extension of term limits in 2022, sample 1993-2023							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Incumbent term-limited	Number candidates	Female candidates	Incumbent re-elected	Years in council	Age mayor	Female mayor
Three terms	-0.39*** (0.04)	0.01 (0.10)	-0.05* (0.03)	0.05 (0.06)	-0.88 (1.07)	0.59 (1.20)	-0.07** (0.04)
Observations	9,118	7,625	7,626	9,368	9,432	9,432	9,432
Mean	0.338	2.407	0.182	0.448	13.90	51.80	0.160

Note: Three terms is a dummy that takes value one when the term limit has been extended to three terms. Panel A includes results from regressions in the sample of elections between 1993 and 2019 in municipalities with more than 1,000 and less than 5,000 inhabitants. Panel B includes elections between 1993 and 2023 in municipalities with more than 3,000 and less than 7,000 inhabitants. Standard errors clustered at the municipality level in parentheses. *** p<0.01, ** p<0.05, * p<0.1

C Data

C.1 Electoral data: administrators

The data used for the analysis was collected from the Open Data section of the [Eligendo](#) portal of Italian elections provided by the Italian Ministry of Interior. The dataset includes the universe of Italian administrators on the 31st December each year, and contains information on their name, age, gender, professional title, educational achievement, party affiliation and assigned position. The dataset was cleaned for consistency and appended for years 1985-2023. We also collected population information directly from the Census.

C.2 Electoral data: candidates

The data used for the analysis was collected from the [Eligendo](#) portal of Italian elections, and complemented with data received directly from the Ministry of the Interior. The dataset contains information on candidates for mayoral positions, including their age and gender, party affiliation, turnout, and votes received.