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# Are Gender Quotas on Candidates Bound to be Ineffective?

Quentin Lippmann<sup>‡</sup>

## Abstract

This article studies the short- and long-term effectiveness of gender quotas applied to candidates in elections based on single-member districts. I exploit the introduction of gender quotas in the French parliamentary elections in 1997 and 2002. Using election data from 1978 to 2017 and a difference-in-differences strategy, I show that the main political parties all reacted by nominating women in less winnable districts in the short term but these strategies gradually disappear for the left-wing party while they persist up to 15 years later for the right-wing party. I argue that these nomination patterns are partly explained by the persistence of incumbents and the inexperience of new female candidates as well as different compliance levels by the main parties.

**JEL codes:** D72, J16, J71

**Keywords:** Gender, elections, public policy

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# 1 Introduction

Women are underrepresented in politics. To reduce this inequality, by 2020, about 60 countries had introduced gender quotas on candidates and several more were discussing their implementation.<sup>1</sup> These quotas consist in constraining political parties to nominate a certain number of female candidates. In practice, parties have complied with these quotas by increasing the number of female candidates and, at the same time, strategically nominating these new candidates in positions bound to be lost. These strategies have led to a large gap between the number of female candidates and the number of elected women, undermining the effectiveness of gender quotas on candidates at increasing the number of elected female politicians.

The existence of these strategic nominations has been documented in the literature.<sup>2</sup> However, we know very little on whether (i) these nomination patterns can fade away and disappear over time and (ii) if so, under which conditions. Besides obvious policy implications, answering these questions is all the more important in that it can inform us on the mechanisms behind the ineffectiveness of gender quotas and the under-representation of women in politics.

The goal of this paper is to answer these two questions. The empirical setting I study is the case of France, one of the few countries to have introduced gender quotas on the nominations of candidates in elections based on single-member districts (Section 2). In France, only 6% of Parliament seats were occupied by women in 1993. To reduce this inequality, the main left-wing party self-imposed a quota in 1997, then unexpectedly won the 1997 elections and introduced a legislated quota in 2002 prescribing that all political parties had to nominate 50% of female candidates nationwide during parliamentary elections. Importantly, this quota was applied at the national level, meaning that it did not regulate where these female candidates should be nominated.

Using election data from 1978 to 2017, I first show how parties complied with the quota and increased the number of female candidates over time (Section 4). Then, I study how parties resorted to strategic nominations following the introduction of quotas in the short and the longer run, measured as 5 elections later. Combining a random forest classifier to predict the probability of winning a district and a difference-in-differences strategy

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<sup>1</sup><https://www.idea.int/data-tools/data/gender-quotas>

<sup>2</sup>See [Esteve-Volart & Bagues \(2012\)](#), [Casas-Arce & Saiz \(2015\)](#) (and the comment by [Bagues & Campa 2019](#)) and [Bagues & Campa \(2021\)](#).

(Section 5.1), I show that the strategic nominations of female candidates are undeniable in the short term (Section 5.2). Before the introduction of quotas, there is no evidence of strategic nominations. After their introduction, both the left- and the right-wing parties started nominating a larger share of women in districts where the probability of losing was higher. As time went by, the picture changes and, in 2017, the left-wing party does not appear to strategically nominate women in less winnable districts while the effect persists for the right wing. These findings are robust to alternative specifications including fixed-effects at the district level, alternative methods to predict the probability of winning a district and different proxies for political parties' support in a given district.

What explains these nomination patterns? First, I investigate the influence of the persistence of incumbents on the strategic nominations (Section 6.1). When gender quotas are introduced, winnable districts are likely to be already occupied by incumbents who enjoy an advantage for reelection. Therefore, parties may react by nominating quota candidates in the remaining districts which happen to be less likely to be won. I show that this mechanism partly explain the results. When controlling for the presence of incumbents, the extent of strategic nominations decreases for each election year both for the left- and right-wing parties.

Second, I study several mechanisms that could explain the different nomination patterns of the left- and right-wing parties. Overall, the evidence suggests that the left-wing party has been more prone to adapt its party strategy to the quota and more likely to enhance women's political representation than the right wing.

As one could argue that the strategic nominations are due to a lack of qualified female candidates in the short-term, I first show that the extent of strategic nominations decreases after controlling for the political experience of candidates. Additionally, I analyze the evolution of the promotion rates from the local to parliamentary elections (Section 6.2). The local elections appear to proxy well the pool of potential candidates since nearly half of the candidates for the parliamentary elections previously ran in the local elections. I provide descriptive evidence indicating that the left-wing party has unambiguously increased the share of women promoted from local to parliamentary elections while the increase has been rather mild and slower for the main right-wing party.

I also study whether these parties' strategies can be explained by different voters' attitudes and biases towards women in politics (Section 6.3). Parties could nominate women in districts with more favorable attitudes towards women which also happen to be less

winnable districts. I use data on the female/male ratio in terms of labor market participation at the district-level to proxy attitudes towards women. I find that, when attitudes are controlled for, the estimates are essentially similar suggesting that this mechanism is unlikely to explain the findings for both parties. Additionally, I show that right-wing female candidates appear to obtain similar vote shares to their left-wing counterparts, even when accounting for differences in other individual characteristics.

Finally, to further investigate why the left wing stopped strategically nominating women in 2017, I study the nomination patterns of other parties (Section 6.4). First, since the 2017 elections signed a dramatic change in the French political landscape, whereby none of the two main parties won a majority, one could wonder whether the left-wing party adapted its strategy to the newly created center-left party that won the election. As compared to the left-wing party, I provide evidence suggesting that all the other parties strategically nominated women in less winnable districts during the 2017 parliamentary elections.

Additionally, I compare the nomination patterns of the left-wing party to those of the far-left party in the long run from 1978 to 2017. While the stakes of the far-left nominations are arguably lower given that fewer seats are won, this comparison is interesting as, compared to the left-wing party, the far-left party has the closest ideological orientations related to gender issues and has continuously nominated candidates at all the elections. I show that only the left-wing party has stopped strategically nominating women in less winnable districts in 2017. Although the evidence is descriptive, the fact that only the left-wing party does not strategically nominate women in less winnable districts in 2017 could be due to credibility incentives, whereby the left-wing party being the party that introduced the quota has stronger incentives to enhance women's political representation in order to maintain its credibility towards its electorate.

This paper is related to two strands of the literature. The first strand studies the effects of gender quotas in politics. This literature has attempted to understand the consequences on policymaking ([Chattopadhyay & Duflo 2004](#)), voter perception ([Beaman et al. 2009](#)) and the quality ([Baltrunaite et al. 2014](#), [Besley et al. 2017](#)) and future careers of politicians ([O'Brien & Rickne 2016](#), [Lippmann 2018](#), [Lassébie 2019](#) and [O'Connell 2020](#)). It also studied other types of policies to promote female access to political positions ([Joo & Lee 2018](#) or [Baltrunaite et al. 2019](#)). This paper is related to the part of this literature focusing on political selection. Existing research has shown that when quotas are applied to elections based on list systems, women are often nominated to the lowest positions on the list during

the municipal elections (see [Casas-Arce & Saiz 2015](#), [Bagues & Campa 2019](#) and [Bagues & Campa 2021](#) for Spain). This effect has also been found to be similar with or without gender quotas (see [Esteve-Volart & Bagues 2012](#) who study elections for the Spanish Parliament). This paper makes two contributions to this literature. First, the results show that strategic nominations are (i) created, and not sustained, by the introduction of quotas and (ii) can disappear over a longer time horizon without any intervention from policymakers. Second, while most studies focus on the impact of gender quotas in multi-member districts, I study the impact of gender quotas applied to elections in single-member districts.

This paper also contributes to the literature on the determinants of the under-representation of women in politics. Existing studies have suggested that the absence of women from the political sphere could be explained by women being less willing than men to run for political positions. This would result from gender differences towards ambition ([Fox & Lawless 2004](#) and [Fox & Lawless 2014](#)), competition ([Niederle & Vesterlund 2007](#), [Preece & Stoddard 2015](#)), self-confidence ([Croson & Gneezy 2009](#)), election ([Kanthak & Woon 2015](#)), persistence in politics ([Wasserman 2018](#)), a lack of role models ([Gilardi 2015](#) or [Baskaran & Hessami 2018](#)) and historical sex ratios ([Grant et al. 2018](#)). Another strand of the literature has shown that the persistence of incumbents could also reduce women's access to political positions ([Labonne et al. 2021](#)) and that there is a lower demand for female politicians ([Bhalotra et al. 2017](#)), whether from voters ([Fréchette et al. 2008](#)), insiders ([Gagliarducci & Paserman 2012](#)) or more broadly political parties ([Esteve-Volart & Bagues 2012](#)). Focusing on the case of France and its quota policy, [Fréchette et al. \(2008\)](#) and [Le Barbanchon & Sauvagnat \(2018\)](#) provide evidence on the negative effect of voters' bias and attitudes on the representation of women in politics. [Fréchette et al. \(2008\)](#) argue that gender quotas can increase the incumbent's advantage in the presence of a negative voter bias towards women. Additionally, [Le Barbanchon & Sauvagnat \(2018\)](#) exploit the introduction of the quota policy to study the role of voters' attitudes towards women and how parties adjust their nomination patterns to these attitudes. My study complements this set of evidence by (i) showing that women are nominated in less winnable districts, independently of voters' attitudes towards women, (ii) studying the dynamics of this effect over time and (iii) investigating under which conditions these nomination patterns persist. Overall, my paper enriches our understanding of the role of parties in the under-representation of women in politics.

## 2 Institutional Context

### 2.1 Election System for the Lower House

The elections for the Lower House (legislative elections) occur every 5 years in France and aim at electing 577 representatives (*Députés* in French) in 577 districts.<sup>3</sup> Members of parliament are elected by direct universal suffrage. The election follows a two-round plurality voting round system where only the most popular candidate is elected. To be elected in the first round, an individual must obtain more than 50% of votes and 25% of registered citizens. If these conditions are not met, a second round is organized a week later and the two highest-ranked candidates automatically qualify for it. In the second round, the candidate receiving the highest vote share is the winner.

Up until 2017, the French political landscape was characterized by an opposition between the main left-wing party (*Parti Socialiste*) and the main right-wing party. The right-wing party changed its name several times and is today (in 2020) known as *Les Républicains*. Until 2017, the President of France always came from one of these political parties and about 86% of districts in the parliamentary elections were held by them.

### 2.2 Gender Quotas for the Parliamentary Elections

#### 2.2.1 Legislated Quota in 2002

In 1997, the main left-wing political party won the parliamentary elections. Among their electoral promises was the introduction of gender quotas in politics. In 2000, these promises became a reality when the *Parity Law* was voted and imposed a legislated quota starting in 2002. This quota stated that political parties would face financial penalties if they did not nominate 50% of women among their candidates nationwide during the parliamentary elections. Importantly, this quota was not imposed on the share of elected individuals but on the share of candidates. Therefore, it allowed parties to nominate these candidates in any district.

In practical terms, if a political party did not enforce the quota and nominated less than 50% of women, its public funding was reduced in proportion to the nomination gender

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<sup>3</sup>Over the period 1978-2017, two redistrictings occurred in 1986 and 2012. As a consequence, the total number of unique districts is of 622.

gap.<sup>4</sup> Given that up to half of the budget of political parties stems from public funding, this policy provided important incentives to nominate women.<sup>5</sup> Nonetheless, parties still had the possibility to incur these penalties and nominate less than 50% of women.<sup>6</sup>

### 2.2.2 Left-Wing Voluntary Party Quota in 1997

In addition to the legislated quota, the main left-wing party self-imposed a quota during the 1997 elections. This quota stated that 30% of left-wing candidates should be women. As the legislated quota introduced in 2002 was more stringent, this quota was only in force during the 1997 elections.

## 3 Data

*Source* - The data come from the 1978, 1981, 1988, 1993, 1997, 2002, 2007, 2012 and 2017 parliamentary election results.<sup>7</sup> As there was a different election system for the 1986 elections, I do not exploit the data from this election year. The data contain the vote share, first and last name, sex, political party affiliation and electoral outcome of each candidate for these elections.

*Party Affiliation* - To register for an election, candidates have to declare their party affiliation or, if they have none, their political inclination (far-left, left, center, right, far-right or none). There are very few reasons to believe that candidates would under-report party affiliation. First, from a candidate perspective, when endorsed they can benefit from the financial help, publicity and the reputation of the political party. Second, from the party perspective, these elections are financially crucial as the public funding parties receive is calculated by computing the total vote share and seats per party.

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<sup>4</sup>The reduction of public funding was gradually increased from 50% in 2002 to 75% in 2007 and reached 150% in 2017. For instance in 2002, if a political party nominated 100 candidates, composed of 60 men and 40 women, the public financial aid would be reduced by  $\frac{(60-40)*0.5}{100} = 10\%$ .

<sup>5</sup>Data on budgets can be found on <https://www.data.gouv.fr/en/datasets/comptes-des-partis-et-groupements-politiques/>. In 2012, respectively 36% and 52% of the budgets of the main left-wing and right-wing parties came from public funding, the difference being largely due to the different number of elected politicians.

<sup>6</sup>Arguably the size of the financial penalties have only an impact on the number of women who are nominated and not on the quality of the districts where they are nominated. For this reason, the rest of the paper does not focus on how important financial penalties should be.

<sup>7</sup>The data for the period 1988-2017 is freely accessible on the open platform for French public data <https://www.data.gouv.fr/fr/posts/les-donnees-des-elections/>. The data for the period 1978-1981 come from Pons & Tricaud (2018).



This study focuses primarily on candidates who were endorsed by the two main parties in France: the left-wing (*“Parti Socialiste”*) and right-wing (*Les Républicains*) parties. Over the period considered, these two parties account for about 86% of seats and are the only ones to have at least 30 representatives elected at each election. Other parties have only episodically won seats. As for candidate selection, there is no regulation governing the process. It is usually centralized and decided by party executives (Gallagher & Marsh 1988, Lundell 2004), but can include internal primaries restricted to party members. In that case, they are often plebiscites and, after the introduction of quotas, can be restricted to candidates of one sex.

## 4 Compliance with the Quotas

The analysis starts with a general depiction of the compliance of parties with the quotas. Starting in 1997, the left-wing party self-imposed a 30% voluntary quota on the share of female candidates. In 2002, a legislated quota was introduced that forced parties to nominate 50% of women among their candidates.

Figure I describes the evolution of the share of female candidates and winners for the main left-wing (a) and right-wing (b) political parties. Before the introduction of gender quotas, we see that the share of endorsed women was relatively stable at about 7% in 1993 for both the left- and the right-wing parties. Similarly, the share of women among winners was slightly lower, at about 5-6%.

In 1997, the left wing introduced a party quota imposing 30% of female candidates (vertical black-dashed line). The share of female candidates endorsed by the left-wing party (graph a) consequently jumped to about 30% while the share of female winners increased by a lesser proportion to nearly reach 20%. As for the right wing (graph b), the share of female candidates and winners remained stable.

In 2002, the legislated quota imposing 50% of female candidates was introduced and impacted both parties. The share of female candidates subsequently increased to more than 35% for the left-wing party and 25% for the right-wing party. The gap between the share of female candidates and female winners broadened for both parties, with respectively 20% and 10% of women among the winners for the left-wing and right-wing parties.

In subsequent elections, we observe that the left-wing party further increased the number of female candidates to 50% while the right-wing party nominated only 40% of women

in 2017. At the same time, the gap between the share of female candidates and winners progressively narrowed for the left-wing party while it remained stable for the right-wing party.

The quota was enforced by reducing the public funding received by parties in proportion to the difference between the quota target of 50% women candidates and the actual number of women nominated by a party. Therefore, because the two parties did not nominate 50% of women in 2002, they lost a substantial amount of their budget. Figure I shows that the budget of the left-wing party was reduced by 4% in 2002, and that this reduction gradually declined to zero by 2017 as it increased the share of female candidates. For the right-wing party, this share was significantly higher at about 10% in 2002 and remained at 8% in 2017.

## 5 Strategic Nominations of Female Candidates

This section presents the empirical strategy and the results related to the strategic nominations of the two main parties, as well as several robustness checks.

### 5.1 Empirical Strategy

#### 5.1.1 Predicting the Probability of Winning a District

To identify strategic nominations, we first need to have a measure of the probability of a political party winning a district (as in [Esteve-Volart & Bagues 2012](#)). To do so, I construct a measure based on the political performance of a party in a district during the previous election. Formally, I estimate:

$$Win_{pct} = f(Win_{p,c,t-1}, VoteShare_{p,c,t-1}) \quad (1)$$

where  $p$  designates the political party,  $c$  the district and  $t$  the election year.  $Win_{pct}$  is a dummy that equals one if district  $c$  is won by the political party  $p$  in the election year  $t$ .  $VoteShare_{p,c,t-1}$  corresponds to the vote share obtained by political party  $p$  in district  $c$  in the first round of the previous election in  $t-1$ .<sup>8</sup> I combine these two variables as they allow

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<sup>8</sup>Although this political support proxy is certainly the most relevant to predict the probability of

to both take into account threshold and non-linear effects (variable  $Win_{p,c,t-1}$ ) as well as a continuous effect that provides further variations in the probability of winning a district (variable  $VoteShare_{p,c,t-1}$ ).

To estimate Equation 1, I use a random forest classifier (Breiman 2001). This provides a continuous prediction of the probability of winning a district  $\widehat{Win}_{pct}$ . As a robustness check, I also use a probit prediction of the probability of winning a district. The main reasons for choosing the random forest are that it handles non-linearities better and also performs significantly better (see Figure A1 for a comparison of the prediction performance). Overall, the variable  $\widehat{Win}_{pct}$  accurately predicts the victory of a district about 80% to 90% of the time.

Over the period considered, the two main parties have won about 86% of all districts. The remaining districts were won by either independent candidates or candidates from minor parties (such as the communists, ecologists, centrists or the far-right). This implies that a district lost by the right wing is not necessarily won by the left wing. Therefore, it is more appropriate to use two distinct measures of the probability of winning a district, i.e. one for each party, rather than one measure for both parties.<sup>9</sup> Equation 1 is thus estimated for the left- and right-wing parties separately.

### 5.1.2 Difference-in-Differences Strategy

Using the measure of the probability of winning a district, I implement a difference-in-differences strategy comparing the probabilities that a political party nominates a woman in a given district for each election year depending on the probability of winning the district.<sup>10</sup> Formally, I estimate the following equation:

$$Woman_{pct} = \sum_{\substack{t=1981 \\ t \neq 1993}}^{2017} \beta_t \widehat{Win}_{pct} * Year_t + \sum_{\substack{t=1981 \\ t \neq 1993}}^{2017} \alpha_t Year_t + \gamma \widehat{Win}_{pct} + \epsilon_{pct} \quad (2)$$

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winning, it could raise issues of endogeneity. These issues are discussed in Section 5.3.

<sup>9</sup>For instance, one could predict the probability of winning for the right wing and use this measure as a proxy for the probability to lose for the left-wing. Given the presence of other political forces, although minor, this strategy would decrease the accuracy of the predictions as it would fit better the probability of winning for one party than the other.

<sup>10</sup>In Section 5.2, I also present the results using discrete measures based on terciles of the distribution of the probability of winning a district rather than a continuous measure.

where  $p$  designates the political party,  $c$  the district and  $t$  the election year.  $Woman_{pct}$  is the outcome variable and designates a dummy that equals one (zero) if the party candidate is a woman (man).  $\widehat{Win}_{pct}$  represents the probability of winning a district following the procedure explained in the previous section. The coefficients associated to  $Year_t$  are interpreted relatively to the omitted election year 1993 corresponding to the election before the introduction of quotas. If gender quotas led political parties to strategically nominate women in less winnable districts, we expect  $\beta_t$  to be statistically non-significant before (common trend assumption) and negative after the introduction of gender quotas.

The standard errors are clustered at the *Département* level. This administrative layer divides France into 101 geographical units which include, on average, 5.7 parliamentary districts. The reason behind this level of clustering is that, since the policy is imposed at the national level, parties certainly take into account the identity of candidates in other districts when they decide to nominate a woman in a given district. As parties often have a local antenna at the *Département* level, clustering standard errors at this level appears to be a reasonable choice to account for the interdependence level across districts.

## 5.2 Main Results

To study the evolution of strategic nominations by the two main parties, I estimate Equation 2 using as a dependent variable a dummy that equals 1 (0) if the candidate nominated is a woman (man).

Figure II displays the results.<sup>11</sup> Focusing on the left-wing party, we observe that the strategic nomination patterns are U-shaped. Before 1997, the nomination patterns of the left-wing party were similar across elections. After the introduction of the voluntary quota in 1997, the coefficient turns negative and equals -0.1, which suggests that, when the probability of winning a district increases by 10 p.p., the probability to nominate a woman decreases by 1 percentage point. The coefficient remains significant at the 5% level and negative at about -0.25 for the election years 2002 and 2007. In 2012, the coefficient shrinks and is not significant at the 5% level, suggesting a lower extent of strategic nominations. Finally, in 2017, the coefficient is positive and not statistically different from zero, which indicates that the left-wing party does not strategically nominate women in less winnable districts in 2017.

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<sup>11</sup>The results are displayed in a Table format in Table B1.

The right-wing nomination patterns are different as the strategic nominations persist over time. Until 1997, the nomination patterns were again similar across elections, which is again probing evidence in favor of the common trend assumption. Following the introduction of the legislated quota in 2002, we observe that female candidates became much more likely to be nominated in less winnable districts. The 2002 coefficient indicates that when the probability of winning a district increases by 10 p.p., female candidates are 3 p.p. less likely to be nominated. These strategic nominations are not transitory as the coefficient remains negative, significant at the 5% level and stable up until 2017.<sup>12</sup>

To provide further evidence on the strategic nominations, I exploit the continuous nature of the variable standing for the probability of winning a district. The objective is twofold: (i) understand whether parties have different propensities to strategically nominate women and (ii) study whether the nomination patterns are driven by the probability of winning or the competition level of a district. In particular, it could be that parties nominate women in non-competitive districts rather than less winnable districts. If they did, they would nominate fewer women in competitive districts where the probability of winning is uncertain and more women in non-competitive districts where the probability of winning is either very high or very low. On the other hand, if nomination patterns were explained by the winnability of a district, we would expect parties to nominate incrementally less women as the probability of winning increases.

To investigate these two points, I discretize the variable  $\widehat{Win}_{pct}$  into three classes, based on the terciles of its distribution.<sup>13</sup> This provides three variables indicating whether the probability of winning is low, average or high, non-competitive districts being more likely to correspond to places where the probability is low or high.

The results are presented in Figure III. They show that parties nominate incrementally less women as the probability of winning increases. In graph (a) and (b), we observe that, relatively to districts with a low probability of winning, women were less likely to be nominated in those with an average (graph a) and high (graph b) probability of winning. Additionally, within respectively three and five election terms, left-wing female candidates became as likely to be nominated in districts with the lowest probability of winning than those in an average or high probability of winning. This is not true for right-wing female

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<sup>12</sup>The coefficients found for the left- and right-wing parties are statistically different in 2017, as shown in Figures B1 and B2.

<sup>13</sup>Although this division is arbitrary, Table B2 shows that it displays a clear relationship with the average probability of winning and the actual number of districts won.

candidates who always remained more likely to be nominated in districts with the lowest probability of winning, reinforcing the idea that the left wing has gradually stopped strategically nominating women in less winnable districts.

### 5.3 Robustness Checks

To demonstrate the robustness of the previous findings, this section replicates the results using alternative specifications, methods to predict the probability of winning a district, proxies for political party support and samples. Most of these robustness checks are described in Figure IV for the left-wing party. The remaining results are displayed in the appendix Section C.

*Alternative Specification* - First, I introduced fixed-effects at the district level. This allows to identify the effect of variations in the probability of winning within a district. Yet, because partial redistricting of constituencies occurred in 1986 and 2012, the drawback of this specification is to restrict the sample to a narrower set of districts. In Figure IV, we see that the estimates obtained with fixed-effects are essentially similar to those obtained without (the right-wing estimates are described in Figure C1).

*Alternative Prediction of the Probability of Winning* - Second, I challenged the prediction of the probability of winning a district. Instead of using a random forest classifier, I used a probit specification. The results are presented in Figure IV for the left wing (Figure C1 for the right wing) and are similar with the two predictions methods, although the U-shaped pattern seems more pronounced with the probit specification.

*Alternative Proxy for Political Party Support* - To predict the probability of winning a district, one needs to proxy the political party's support in the district. In the previous findings, this was done using the political party's vote share in the district during the previous parliamentary elections. This variable is arguably the most relevant to predict support. Yet, it contains information on both the support for the political party and also the quality of the former candidate. This "quality" component could lead to issues of endogeneity.<sup>14</sup>

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<sup>14</sup>The vote share that a political party will obtain in a district depends on both the intrinsic support for the party in a district and the quality of the candidate endorsed by the party. Assuming that candidates of lower quality obtain lower vote share, then using the vote share of a party to predict the support for a party may lead to conclude that districts with low vote share are weakly supporting the party whereas this could be due to the low quality of the candidate. If the party is capable to identify this quality component, it could decide to replace candidates of low quality and/or keep candidates of high quality. This could

Therefore, I used an alternative variable which is the vote share for the political party in the district during the previous presidential elections. During these elections, there is only one candidate nationwide, reducing concerns of endogeneity.<sup>15</sup> The estimates are described in Figure IV and are essentially similar to those presented in the previous sections.

Another limit of the proxy for the political party support is that it captures incumbency. Districts that were won in T-1 are likely to be districts where the probability of winning is relatively high in T but also where an incumbent will run again. This limits the possibility to nominate a new candidate as parties may favour their incumbents. This limit is discussed in Section 6.1.

*Accounting for Political Dissidents* - It could be that the disappearance of the strategic nominations by the left-wing party is due to the fact that it nominates women in districts with dissidents in which the probability of winning is lower than predicted. Since the measure of endorsement by a political party is based on the self-declared affiliation by a candidate to a political party, there are a few cases where more than one candidate is declared as party-affiliated (about 4% of the sample). To probe the robustness of the results to this possibility, I restricted the sample to districts where only one candidate is affiliated to the party. The estimates are again described in Figure IV and are essentially similar.

*The 2017 Elections* - The previous results show that the left-wing party stopped strategically nominating women in 2017. This election also coincides with the victory of a new centrist party (*En Marche*) led by a former minister of the incumbent left-wing government. As several left-wing incumbents have left the left-wing party to be endorsed by the new centrist party, the left-wing party had to find new candidates in these districts. If women were nominated in districts held by these incumbents, this could potentially explain why the strategic nominations have stopped. To study this possibility, I removed from the sample all the districts where the incumbent was elected on the left-wing platform in 2012 and switched to the new centrist party in 2017. The results are displayed in Figure IV and are essentially similar to those observed before. This was to be expected as party

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cause issues of endogeneity, whereby the identity of the candidate in T partly determines the vote share for a political party in T-1.

<sup>15</sup>A limit of this variable is that presidential candidates often have specific regional supports, because of their career or campaign choices. For instance, it could be that the presidential candidate has actively campaigned in a district, leading the vote share to being a mixture of personal support for a candidate and political party's support. While both variables proxying political party's support have limits, their joint use is likely to provide complementary information on party's support.

endorsements are usually decided months before the election, at a time where the victory of the new centrist party was deemed unlikely.<sup>16</sup>

*Replacing Predicted Probability of Winning by Previous Vote Share* - Finally, I also estimate Equation 2 by replacing the predicted probability of winning a district by the previous vote share ( $\widehat{Win}_{p,c,t}$  by  $VoteShare_{p,c,t-1}$ ). The use of the vote share variable allows not to make any assumption on the functional form of the probability of winning a district. At the same time, it provides an indicator arguably less accurate than the predicted probability of winning which takes into account non-linearities and the fact that the party won the district. The results are described in Figure C2. We observe similar nomination patterns.

## 6 Mechanisms

What explains these nomination patterns? In this section, I study several mechanisms to understand whether the nomination patterns reflect the influence of the presence of incumbents, parties' compliance levels or alternative mechanisms.

### 6.1 Does the Presence of Incumbents Explain the Strategic Nominations?

Quotas, whether they apply to gender or any other characteristic, bring inexperienced candidates into a setting with incumbents. In the short term, the safest seats are likely to be occupied by incumbents who enjoy an advantage for reelection. Therefore, in order to maximize electoral results, parties may nominate new candidates in the remaining districts which happen to be less likely to be won. In that case, the strategic nominations would gradually disappear with time as incumbents retire and safe seats become available.

To address this channel, I replicate the empirical strategy used in the previous sections and control for the presence of an incumbent. The control is a dummy that equals 1 if the party won the district during the previous election (0 otherwise), interacted with a dummy that equals 1 (0) for years in the post-quota (pre-quota) period. If this channel was to explain the nomination patterns, we would observe that, after introducing the control,

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<sup>16</sup>Up until late January, three months before the election, the polls suggested that the right-wing candidate (François Fillon) would obtain more votes than the centrist candidate (Emmanuel Macron).



women are more likely to be nominated in the same type of district as men.

Figure V displays the results for the left-wing (graph a) and right-wing parties (graph b). Looking at graph (a), we observe that when incumbency is controlled for, the extent of detectable strategic nominations decreases as the coefficients become closer to zero for 2002, 2007 and 2012. The coefficient is also not significant anymore for the year 2007.

Looking at graph (b) restricted to the right-wing party, we observe similarly that when we control for incumbency, the extent of detectable strategic nominations decreases substantially. The coefficients remain negative but are not significant anymore for the 2012 and 2017 election years (p-values of respectively 0.279 and 0.325). Could this mean that incumbency entirely explains the persisting nominations of women in less winnable districts over time? It is difficult to draw such a definitive conclusion and it seems more reasonable to state that incumbency partly explains the strategic nominations. First, looking at the point estimates, the coefficient is reduced by 64% as it changes in 2017 from -0.25 to -0.089 when controlling for incumbency. Second, the point estimates after controlling for incumbency remain in the initial confidence intervals and therefore, the coefficients are not statistically different from each other (Amrhein et al. 2019, p.267).<sup>17</sup>

## 6.2 The Role of Supply-Side Arguments

Another potential reason explaining the nomination of female candidates in less winnable districts could be that parties lack qualified female candidates. Additionally, the supply of such candidates could differ across parties and explain the different nomination patterns. As for the previous set of mechanisms, it should be stressed that this argument is more plausible in the short than in the longer run as, within a 15-year span, parties arguably have time to expand the pool of qualified female candidates. As noted by Dahlerup & Freidenvall (2011): “*If the party does not look for potential women candidates, then it will not find any*” (p. 41).

To empirically investigate this argument, I first replicate the empirical strategy used in the previous section and control for the political experience of candidates. The control is a dummy that equals 1 if the candidate runs for the first time during the parliamentary elections (0 otherwise), interacted with a dummy that equals 1 (0) for years in the post-quota (pre-quota) period. The results are displayed in Figure VI. As compared to the results of

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<sup>17</sup>For 2017, the 95% confidence intervals are respectively [-0.42;-0.08] without controls and [-0.27;0.09] when controlling for incumbency.

the previous section, we also observe a decrease in the extent of strategic nominations when political experience is controlled for, although it appears to be less substantial than the one obtained when controlling for incumbency. Coefficients remain negative and significant at the 5% level for 2002 and 2007 for the left wing and 2002, 2007 and 2017 for the right wing. Additionally, in terms of magnitude, the coefficient shrinks by about 25% in 2017 for the right wing (against 64% when incumbency is controlled for).

Although controlling for political experience provides interesting insights, this strategy has two important shortcomings: (i) it is an imperfect proxy for the quality of candidates and (ii) the set of endorsed candidates is a subset of all the potential candidates. If a party was discriminating against women, it could choose to promote less qualified women in the hope that they will not replace male party leaders in the future.

Therefore, another way to tackle these arguments is to proxy the pool of all potential candidates and understand how parties promote them to parliamentary elections. To study this question, I exploit the fact that, before reaching top positions, politicians usually climb the political ladder from very local to more national positions such as parliamentary ones.<sup>18</sup> In France, about 45% of candidates at the parliamentary elections originate from the local elections (“*Cantonales*” elections). I use the pool of candidates at these local elections as a proxy for the pool of potential candidates at the parliamentary elections.<sup>19</sup>

Local elections are very similar to the parliamentary ones except that they are staggered and half of the districts are renewed at each election (thereafter Series 1 and 2). The elections occur in single-member districts every 6 years in 4,055 districts.<sup>20</sup> Importantly for the analysis, the districts for the local elections are sub-divisions of the districts for the parliamentary elections, making it relatively easy to link the two elections.<sup>21</sup> In the sample used for the analysis, there are about 11 local districts for one parliamentary district. Additionally, there were no gender quotas applied to the local elections.<sup>22</sup>

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<sup>18</sup>See [Mariani \(2008\)](#) and [Brown et al. \(2020\)](#) who study this mechanism for the US Congress and show that it often comes with a female penalty.

<sup>19</sup>One could wonder whether parties have the same propensities to pick their candidates for the parliamentary elections from the local elections. Before 1997, about respectively 56.1% and 59.5% of the left-wing and right-wing candidates for the parliamentary elections had previously run during the local elections. Over the period 2002-2017 where the legislated quota applies, these figures were respectively of 40.8% and 36.5% for the left and right-wing parties.

<sup>20</sup>Over the period 1976-2011, several small redistricting occurred. These redistrictings have all been done within a given geographical unit which corresponds to the parliamentary district. As a consequence of these redistrictings, the total number of unique districts is of 4,080.

<sup>21</sup>The methodological details are discussed in Section [D.1](#).

<sup>22</sup>From 2007 onwards, the law also prescribed that the potential substitute of a candidate should be of

Figure VII describes the evolution of the share of women among candidates promoted from the local to the parliamentary elections. Following the introduction of quotas, the left wing immediately promoted more women to the parliamentary elections while it took about 10 years for the right-wing party to start increasing the number of women. Looking at the evolution of Series 1 for the left-wing party, women accounted for less than 10% of promotions to the parliamentary elections in 1992 while this figure went up to 20% in 1998 and more than 30% in 2004 and 2011. For the right wing, we do not observe a similar increase. In 1992, women also accounted for less than 10% of promotions but this figure only slightly increased to 10% in 1998 then remained stable in 2004 and increased to 20% in 2011, corresponding to the level of the 1998 level of the left-wing party. The evolution of Series 2 provides a similar conclusion: the increase is sizeable and obvious for the left wing while it is only mild for the right wing.<sup>23</sup>

Table I tests whether the increased flows of women from the local to the parliamentary elections was accompanied by a reduction in the gender gap at the individual level regarding promotion from the local to the parliamentary elections. I compute a dummy that equals 1 if a candidate for the local elections is also candidate for the parliamentary elections in the related district, and 0 otherwise. I regress this dependent variable on the sex of candidates before or after the introduction of gender quotas.<sup>24</sup> I also control for fixed-effects at the parliamentary district level in order to measure the evolution of the promotion gap at the parliamentary elections for the same sets of parliamentary districts, before and after the introduction of gender quotas. Two dates are used for the treatment date as two effects are possible: political parties improved the promotion rates of candidates either after these quotas or for candidates right before.

We observe that the gender gap in the probability of being promoted at the parliamentary elections substantially narrowed for the left-wing candidates after the introduction of gender quotas. Looking at column 1 of Panel A, we see that the probability of a left-wing woman being promoted increased by 20 p.p. in the election after the introduction of quotas, the coefficient being significant at the 1% level. As for the right-wing women (column 2), this probability increased by 4 p.p. and is not statistically significant. Col-

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the opposite sex.

<sup>23</sup>One may wonder whether this increased share is due to a lower number of female candidates overall. Figure D1 shows that this is not the case. The number and share of female candidates at the local elections have increased substantially.

<sup>24</sup>As in the previous sections, to allow comparisons across parties, I take for the date of the introduction of gender quotas 1997 for the left wing and 2002 for the right wing.

umn 3 confirms the two separate estimates by pooling the two samples and interacting the coefficient of interest with the candidates' party. In Panel B, we see that the coefficients are slightly lower when candidates in the election before the introduction of gender quotas are included but the interpretation remains similar: the gender gap in promotion rates declined significantly more for the left-wing candidates than for the right-wing ones.<sup>25</sup>

Therefore, the study of how political parties cope with the supply of female candidates suggests that (i) quotas increased the promotion from the local to the parliamentary elections and (ii) that this increase was stronger and faster for the left-wing party, suggesting that it increasingly searched for suitable candidates to run during the parliamentary elections. This suggests that the left wing had a higher propensity to comply with the quotas and get women elected.<sup>26</sup>

### 6.3 Do Parties Respond to Voters' Bias and Attitudes?

The nomination patterns could also be explained by a rational response of political parties to their voters. Parties could decide to nominate women in districts where voters have more favorable attitudes towards women. Additionally, female candidates might suffer from a vote share penalty that differs across parties and explain the different nomination patterns.

*Accounting for Voters' Attitudes* - Parties could decide to nominate women in districts with more favorable attitudes towards women where female candidates are expected to obtain a higher vote share. Additionally, one could speculate that for the left-wing party a more winnable district is also one with more favorable attitudes towards women, whereas for the right-wing party a winnable district means the opposite. Therefore, there are reasons to believe that voters' attitudes could be correlated with the probability of winning a district and explain the nomination patterns described in the previous sections.

To account for this possibility, I construct a proxy for voters' attitudes towards women by using the female/male ratio in terms of labor market participation at the district-level.

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<sup>25</sup>Additionally, in Table D1, I show that these effects correspond to promotions where women are first nominated to the local elections then to the parliamentary elections.

<sup>26</sup>In Tables D2 and D3, I also provide descriptive evidence on the evolution of the characteristics of left-wing and right-wing female candidates. I show that, for both parties, women nominated after the introduction of quotas became increasingly experienced in politics with time but their past occupations remained similar across the different election years, which suggests that they had similar levels of education and were not more highly qualified.

The data come from the 1990, 1999, 2006, 2011 and 2016 municipality censuses which are linked to the closest election year. As shown in Figure D2, this ratio is strongly correlated to sexist attitudes at the regional level in France, which suggests that it can be used to proxy voters' attitudes towards women.

I estimate Equation 2 adding the proxy for voters' attitudes towards women as a control variable. If attitudes were an important mechanism explaining the strategic nominations of female candidates, we would expect the coefficients to lose in magnitude and become closer to zero. The results are presented in Figure VIII. We observe that, when sexist attitudes are controlled for, the results are essentially similar which suggests that voters' attitudes towards women are not driving the nomination patterns of both parties.<sup>27</sup>

*Direct Evidence on Female Penalty in Vote Share* - To provide further evidence on the existence of a voter bias, I also regress the vote share of candidates on a set of candidate characteristics which include gender, age, past occupation and political experience. This exercise is interesting as the vote share is an obvious indicator of interest for political parties. However, its main limit is that we can only observe vote shares conditional on candidates' and districts' characteristics, which are chosen by political parties. To control for political experience, I use a dummy that equals 1 if it is the first time that the candidate runs for a parliamentary position and a dummy that equals 1 if the candidate has run for a position at the local level. To control for district characteristics, I include the measure of winnability used in the previous sections as well as district fixed-effects. Since the characteristics of candidates are only available from 1997 onwards, the analysis focuses on the 1997, 2002, 2007, 2012 and 2017 elections. To allow comparisons between the left and right-wing parties, I restrict the samples to the 4 elections following the introduction of gender quotas.<sup>28</sup>

The results are displayed in Table II. The first column shows that, relatively to men, the vote share of female candidates is 4.95 p.p. lower. Right-wing female candidates

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<sup>27</sup>In the appendix Figure D3, I also show that results are similar when using a discrete measure of the probability of winning instead of a continuous one. It should be highlighted that these results do not rule out the fact that parties take into account voters' attitudes when nominating women. They simply suggest that this channel is not driving the strategic nominations of women in less winnable districts after the introduction of quotas. Moreover, in Figure D4, I also study whether attitudes are changing differently in left-wing and right-wing districts. For instance, if left-wing districts became increasingly more gender egalitarian over time, this could explain why the left-wing party decided to nominate more women. However, the results do not support this explanation.

<sup>28</sup>They correspond to the years 1997 (2002), 2002 (2007), 2007 (2012) and 2012 (2017) for the left wing (right wing). Table D4 shows that the results are essentially similar when using all the available years.

additionally attract 2.55 p.p. less votes. When candidate-level controls are added (column 2), the magnitude of the coefficients diminishes but they remain significant at the 1% level. When district-level controls are added (column 3), female candidates still attract fewer votes but the difference between the left and right-wing candidates becomes non-significant, suggesting that this difference was entirely driven by strategic nominations. Finally, in column 4, both candidate and district level controls are included in the specification. We observe that female candidates attract 1.87 p.p. less votes and that there is almost no difference between left and right-wing candidates (the coefficient of -0.1 is both very low in magnitude and non-statistically significant). Therefore, the data do not serve to reject that a voter bias against female candidates exists, but they do suggest that this bias is similar across parties. The additional right-wing penalty for female candidates vanishes when districts' characteristics are accounted for, suggesting that right-wing female candidates were nominated in less winnable districts than their left-wing counterparts.

## 6.4 Comparison With Other Parties

### 6.4.1 The 2017 Elections and the Emergence of *En Marche*

The nomination patterns of the main left- and right-wing parties diverged significantly in 2017. This year also coincides with the victory of a new centrist party (*En Marche*) led by a former left-wing minister. Therefore, one could wonder whether the changing nomination patterns of the left-wing party in 2017 is due to the emergence of this new party and the changing political landscape that has affected the left-wing party more than the right wing.

To study this issue, in section 5.3, I showed that the results are robust to removing districts where a 2012 left-wing candidate switched party and ran with the new centrist party.

In this section, I provide additional evidence on the influence of the new centrist party by examining whether this party engaged in strategic nominations of female candidates. This is interesting as if it did not strategically nominate women in less winnable districts, the left-wing party might have felt compelled to do the same and adapt its nomination patterns.

To study this question, given that the new centrist party only ran in 2017, it is not possible to obtain a measure of the support for this party during the previous parliamentary

elections and use the empirical strategy described in the previous sections. To circumvent this issue, I proxy the support for the party in a district with the vote share received by the presidential candidate during the 2017 presidential elections.<sup>29</sup> Then, I estimate the probability that a party nominates a woman in a given district depending on the vote share received by the presidential candidate in this district.<sup>30</sup>

Figure IX displays the results. The coefficients are to be interpreted with respect to the left-wing nomination patterns. We observe that the coefficient is negative for all the parties, which indicates that, as compared to the left wing, in districts where the support for a given party was higher, the probability to nominate a woman was lower. The coefficients are significant at the 10% level for the far-left and centrist parties, and at the 5% level for the right-wing and far-right parties. In terms of magnitude, the coefficient for the centrist party is -0.023 which indicates that, relatively to the left-wing party, when the vote share for the presidential candidate of the centrist party increases by 10 percentage points, the probability that the centrist party nominated a woman declined by about 2.3 percentage points. Overall, the results suggest that the left-wing party had a different nomination pattern as compared to the other parties.

#### 6.4.2 Left vs Far-left Nomination Patterns in the Long Run

The previous results suggest that all the parties nominated women in less winnable districts as compared to the left-wing party during the 2017 parliamentary elections. However, given that the new centrist party only emerged in 2017, a different empirical strategy was used to study this question for the 2017 elections and one could wonder whether the results are robust to using the main empirical strategy. Additionally, the previous sections provided evidence that the left-wing party has been more prone than the right-wing to adapt its party strategy to the quota by promoting more women from the local to the parliamentary elections. It could be questioned whether this is due to ideological considerations towards gender issues, whereby left-wing politicians would be intrinsically more favorable to gender quotas and consequently attempt to enhance women's political representation.

To provide evidence on these two questions, I replicate the main empirical strategy by

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<sup>29</sup>The first rounds of presidential and parliamentary elections respectively occurred on April 23rd, 2017 and June 11th, 2017.

<sup>30</sup>The correlation between the vote share received by the presidential candidate in a district and the vote share received by the candidate of the same party during the parliamentary elections in the same district is 0.59.



comparing the left and far-left (*Parti Communiste*) parties' nomination patterns over the long run. Note that the previous section suggested that the far-left party nominated women in less winnable districts than the left-wing party during the 2017 elections (the coefficient was significant at the 10% level and similar in terms of magnitude to the one obtained for the centrist party). This comparison is interesting as the far-left party has continuously nominated candidates over the period 1978-2017 and also because, as compared to the left-wing party, the far-left party has close ideological considerations towards gender issues (Murray et al. 2012).<sup>31</sup> First, the far-left party supported the introduction of the legislated quotas and also self-imposed a 30% voluntary quota on the share of female candidates in 1997. Second, both parties nominated about as many women during each election and, if anything, the share of female candidates seemed higher for the far-left party before the introduction of quotas (Figure D5). However, this comparison also has limits as the composition of the electorate between the two parties is significantly different, with the electorate of the left-wing party being more educated while the far-left party has more support among the working class.<sup>32</sup>

The results of this comparison are displayed in Figure X. We observe that the far-left party has kept nominating women in less winnable districts up until 2017. If anything, the extent of these nomination patterns has worsened through time.<sup>33</sup> Therefore, even parties that are ideologically close to the left-wing party in terms of priorities towards gender issues continue strategically nominating women in less winnable districts in 2017.

What could explain this behavior? It is difficult to provide a definitive answer to this question using the current empirical setting as we are constrained by the time frame and the limited number of political parties. Yet, a potential explanation could rely on credibility incentives. As the gender quotas originated from the left-wing party, they may be perceived as a left-wing policy and the extent to which the left-wing party will comply with them may

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<sup>31</sup>Over the period considered, the far-left party has repeatedly nominated candidates at each election and won about 6% of districts, significantly less than the two main parties. This could raise concerns that the methodology used to predict the probability of winning is less suitable to study the far-left nomination patterns. To tackle this concern, I provide additional robustness checks in Section D.3 by replacing the predicted probability of winning a district by the previous vote share. The results are essentially similar.

<sup>32</sup>In 1997-1998, about 34% and 20% of the left-wing party members respectively occupied positions of executives and workers/employees (against 12% and 59% for the far-left party). Additionally, while there are more women in the far-left party than in the left-wing one (40% against 26%), the leadership of the far-left party has been less feminized than the one of the left-wing party (Platone & Ranger 2000; Dargent & Rey 2014).

<sup>33</sup>In Figure D6, I show that the estimates are statistically different in 2017.



act as a signal for the extent to which the left wing commits to its electoral promises. The signal sent by the party may have a direct impact on its credibility affecting its reputation and future electoral prospects (Aragonès et al. 2007). It may also indicate to voters that the party truly cares about the policy it implements, something that is rewarded during elections (Kartik & McAfee 2007, Callander 2008). Moreover, as time goes by, voters may evaluate the compliance levels of parties with the quota on the number of women elected instead of the share of female candidates. This would be due to the diminishing influence of short-term arguments for nominating women in less winnable districts such as the presence of incumbents that could be used by parties to explain why they nominate women in less winnable districts. As a consequence, the strategic nominations of women in less winnable districts would become increasingly costly in terms of reputation for the party with time and this could explain the nomination patterns of the left-wing party in 2017.

The evidence could be consistent with this explanation, although it should be stressed that, to precisely test this hypothesis, we would ideally need a setting unlikely to exist due to the nature of political competition. It would include two identical parties, one having introduced the quotas and the other having to comply with the quotas.

## 7 Conclusion

This paper has studied the effectiveness of gender quotas on candidates in single-member districts. Using a difference-in-differences strategy, I showed that in the short term, both the left- and right-wing political parties reacted by strategically nominating women in less winnable districts after the introduction of quotas on candidates. In the longer run, measured at 15 to 20 years later, the political parties' behaviors differed. For the main left-wing party, these strategic nominations were not observable anymore while they persisted for the main right-wing party.

I first showed that these nomination patterns are partly explained by the persistence of incumbents and the inexperience of new candidates brought by the quota. Second, I provided evidence consistent with the fact that these nomination patterns are also likely to reflect different compliance levels and efforts to enhance women's political representation. The left wing has promoted more women from the local to the parliamentary elections. Additionally, voters' attitudes and bias do not seem to explain the different nomination patterns of the main parties. Finally, among all the parties that operate in the French

political landscape, the left-wing one seems to be the only one that does not strategically nominate women in 2017.

Are gender quotas on candidates bound to be ineffective at increasing the number of female politicians? The findings of this paper suggest that they are in the short term but not necessarily in the longer run. The lower bound for the full effectiveness of gender quotas seems to be about 20 years or 5 elections and future elections will tell whether strategic nominations have permanently or only temporarily disappeared. However, in the short term, strategic nominations seem unavoidable because of the presence of incumbents and the lack of experienced female candidates. As such, it could be more effective to adapt the design of quotas to these short-term constraints by incorporating a moving target, whereby the number of female candidates that a party should nominate would evolve with time. Regarding non-compliant parties, the question remains open as to how long it will take for the quota to be fully effective and how to make parties more accountable on these issues.

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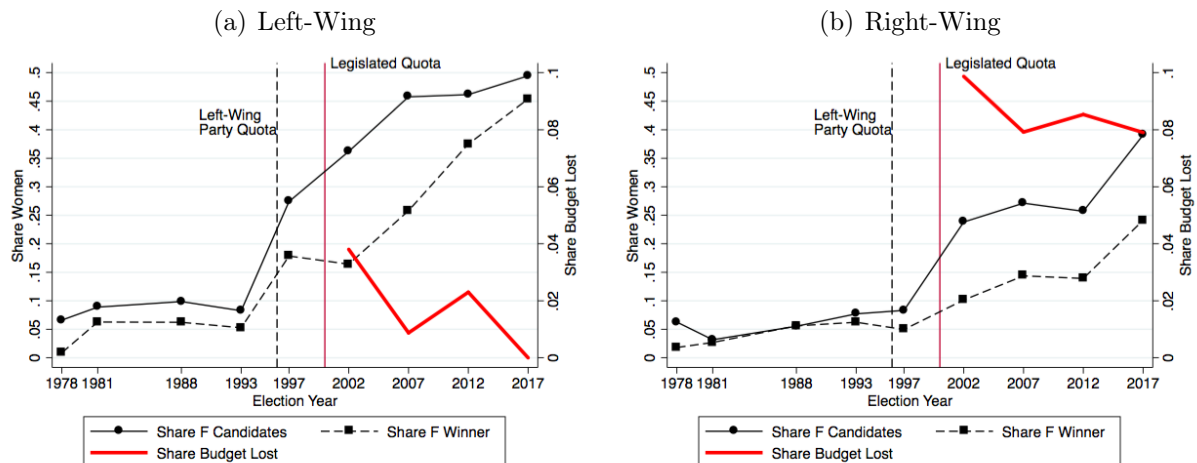
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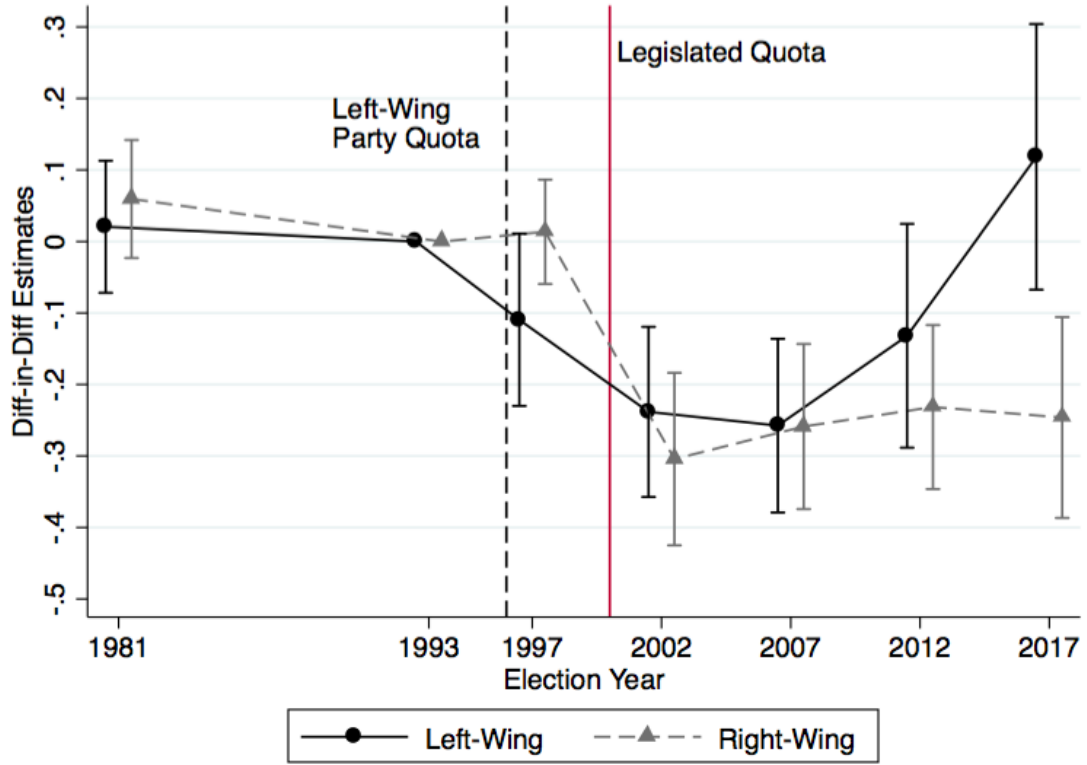
# Figures

Figure I: Evolution of the Share of Women among Candidates and Winners



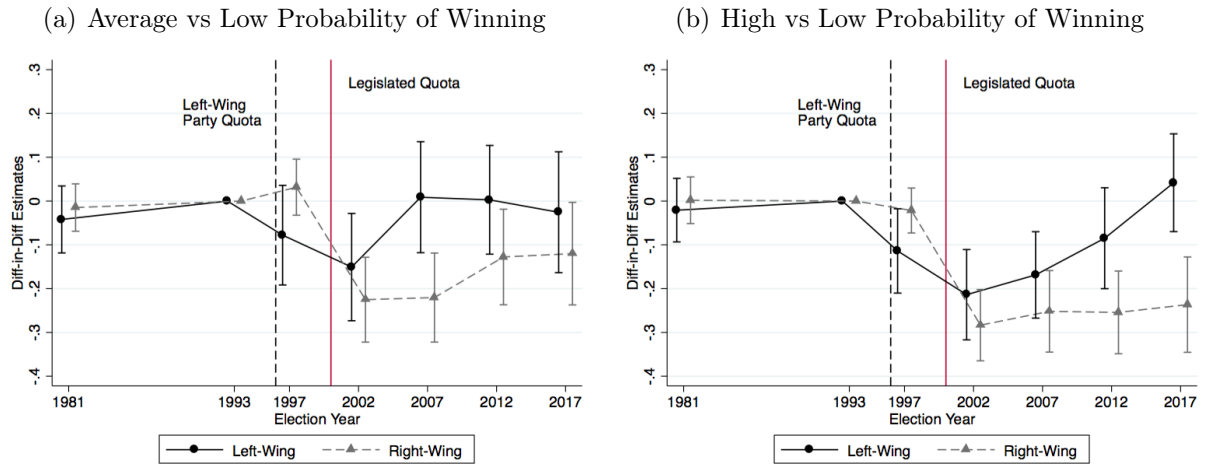
Notes: the data come from the elections for the French Lower House during the period 1978-2017. The sample is restricted to candidates endorsed by the main left-wing (a) and right-wing (b) political parties. Share F Candidates and Share F Winner respectively designate the share of women among all candidates and only the winners endorsed by each political party (y-axis on the left side). Share Budget Lost designates the share of budget that the party lost because it did not nominate 50% of women (y-axis on the right side). The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.

Figure II: Evolution of Strategic Nominations of Female Candidates



Notes: the data come from the elections for the French Lower House during the period 1978-2017. The dependent variable is a dummy that equals 1 (0) if a female (male) candidate is endorsed. The estimates represent coefficients related to  $\widehat{Win}_{pct} * Year_t$ . The omitted election year is 1993. Confidence intervals at the 95% level are displayed. Standard errors are clustered at the *Département* level. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.

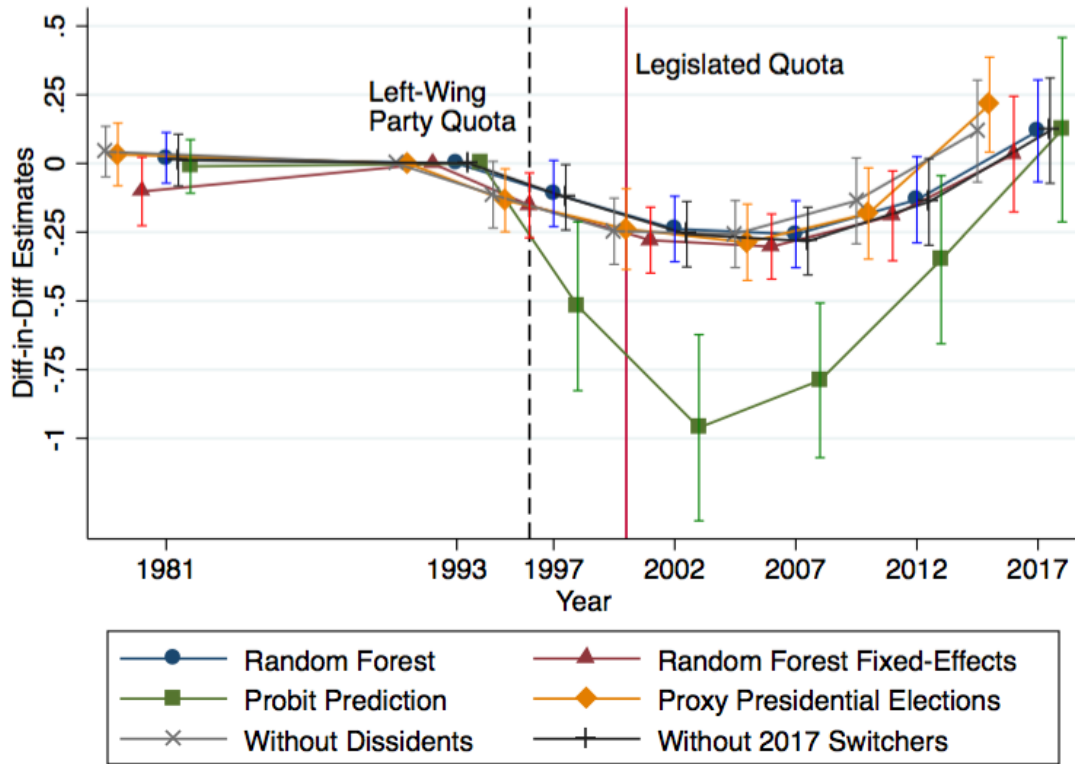
Figure III: The Different Propensities to Strategically Nominate Women



Notes: the data come from the elections for the French Lower House during the period 1978-2017. The dependent variable is a dummy that equals 1 (0) if a female (male) candidate is endorsed. Graph (a) and (b) respectively display estimates of the coefficients for each election related to the categories “average probability of winning” and “high probability of winning”. The omitted category is “low probability of winning”. These categories are based on the terciles of the distribution of the predicted probability of winning a district for each party. The omitted election year is 1993. Confidence intervals at the 95% level are displayed. Standard errors are clustered at the *Département* level. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.

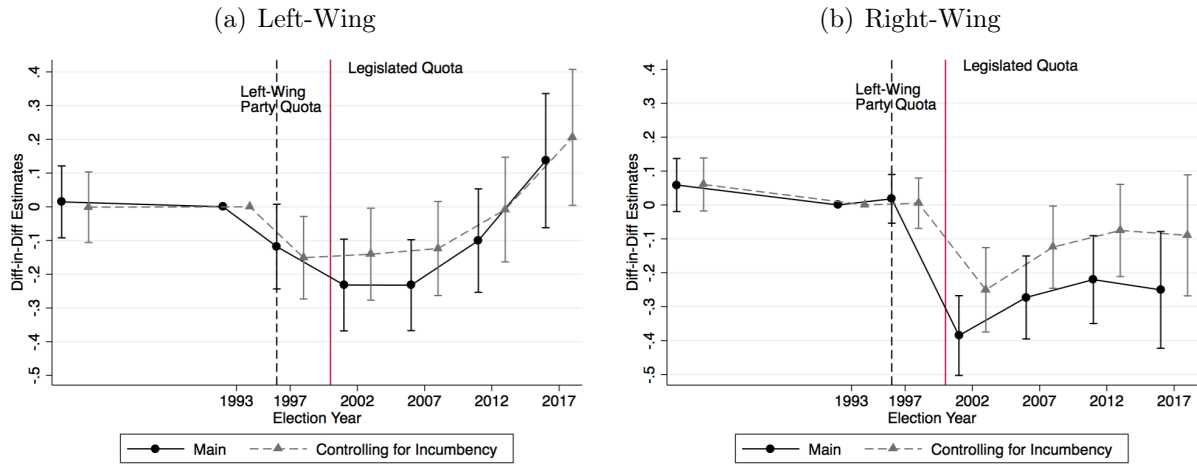


Figure IV: Robustness of the Findings for the Left-Wing Party



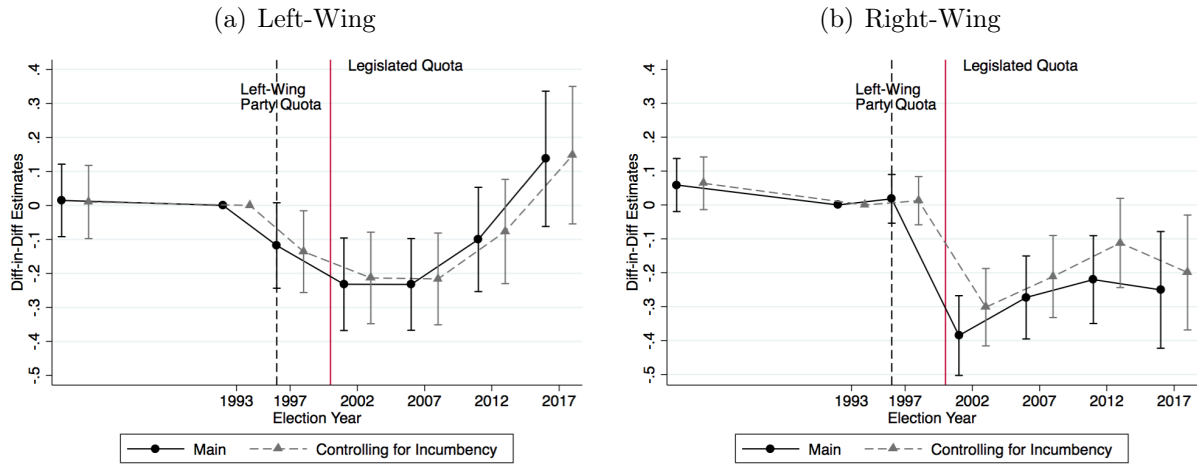
*Notes:* the data come from the elections for the French Lower House during the period 1978-2017. The dependent variable is a dummy that equals 1 (0) if a female (male) candidate is endorsed. The estimates represent coefficients related to  $\widehat{Win}_{pct} * Year_t$ . The sample is restricted to nominations made by the main left-wing party. The omitted election year is 1993. Random Forest designate the main specification. Random Forest Fixed-effects augments the main specification with district fixed-effects. Probit Prediction designate the methodology using a probit model to estimate the probability of winning a district (instead of a random forest classifier). Proxy Presidential Elections designates the methodology using results from the presidential elections to proxy for political party support. Without Dissidents designates the sample of districts without dissidents. Without 2017 Switchers designates the sample of districts without left-wing incumbents who joined the new centrist party. Confidence intervals at the 95% level are displayed. Standard errors are clustered at the *Département* level. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.

Figure V: Strategic Nominations Controlling for the Presence of an Incumbent



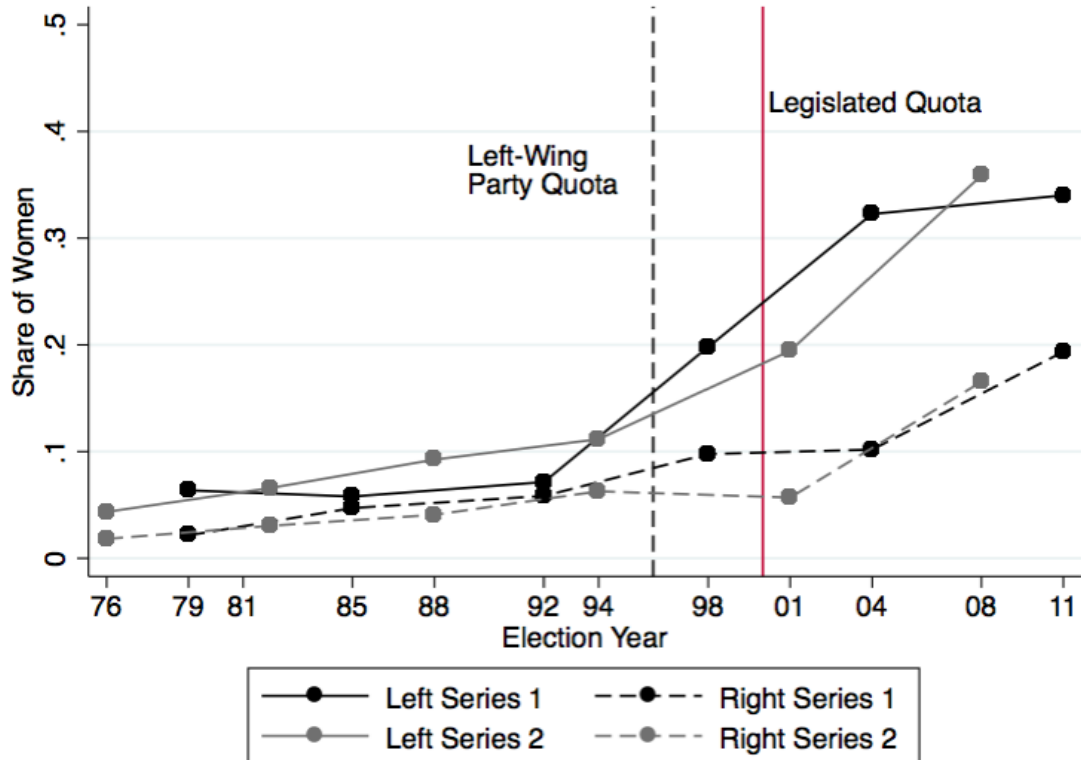
*Notes:* the data come from the elections for the French Lower House during the period 1978-2017. The dependent variable is a dummy that equals 1 (0) if a female (male) candidate is endorsed. The estimates represent coefficients related to  $\widehat{Win}_{pct} * Year_t$ . The omitted election year is 1993. Confidence intervals at the 95% level are displayed. Standard errors are clustered at the *Département* level. Controls for the presence of an incumbent include a dummy that equals 1 (0) if the party won (lost) the district during the previous election, interacted with a dummy that equals 1 (0) for years in the post-quota (pre-quota) period. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing quota and the legislated quota.

Figure VI: Strategic Nominations Controlling for Candidates' Political Experience



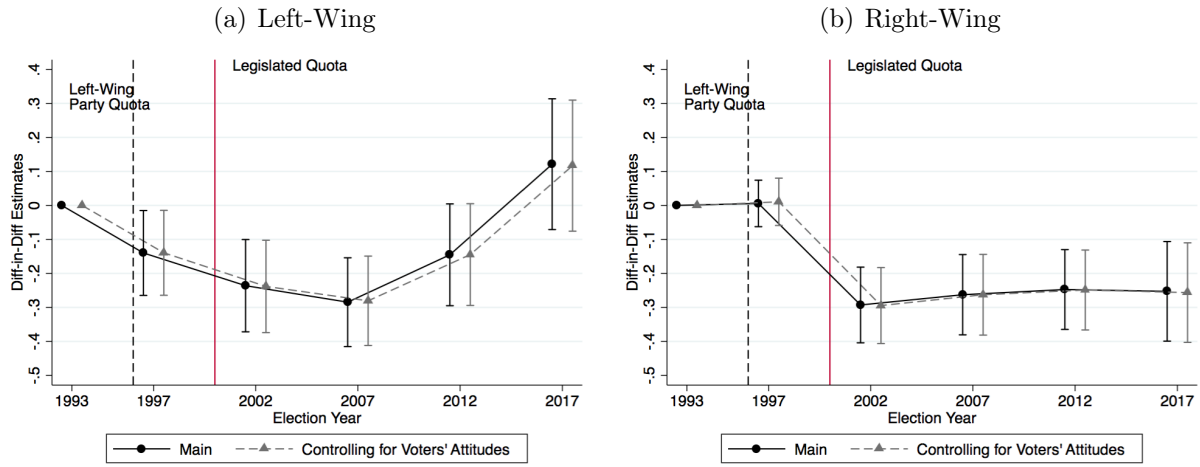
Notes: the data come from the elections for the French Lower House during the period 1978-2017. The dependent variable is a dummy that equals 1 (0) if a female (male) candidate is endorsed. The estimates represent coefficients related to  $\widehat{Win}_{pct} * Year_t$ . The omitted election year is 1993. Confidence intervals at the 95% level are displayed. Standard errors are clustered at the *Département* level. Controls for political experience include a dummy that equals 1 (0) if the candidate runs for the first time (ran in the past) during the parliamentary elections, interacted with a dummy that equals 1 (0) for years in the post-quota (pre-quota) period. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.

Figure VII: Evolution of the Share of Women Among Candidates Promoted from the Local to the Parliamentarian Elections



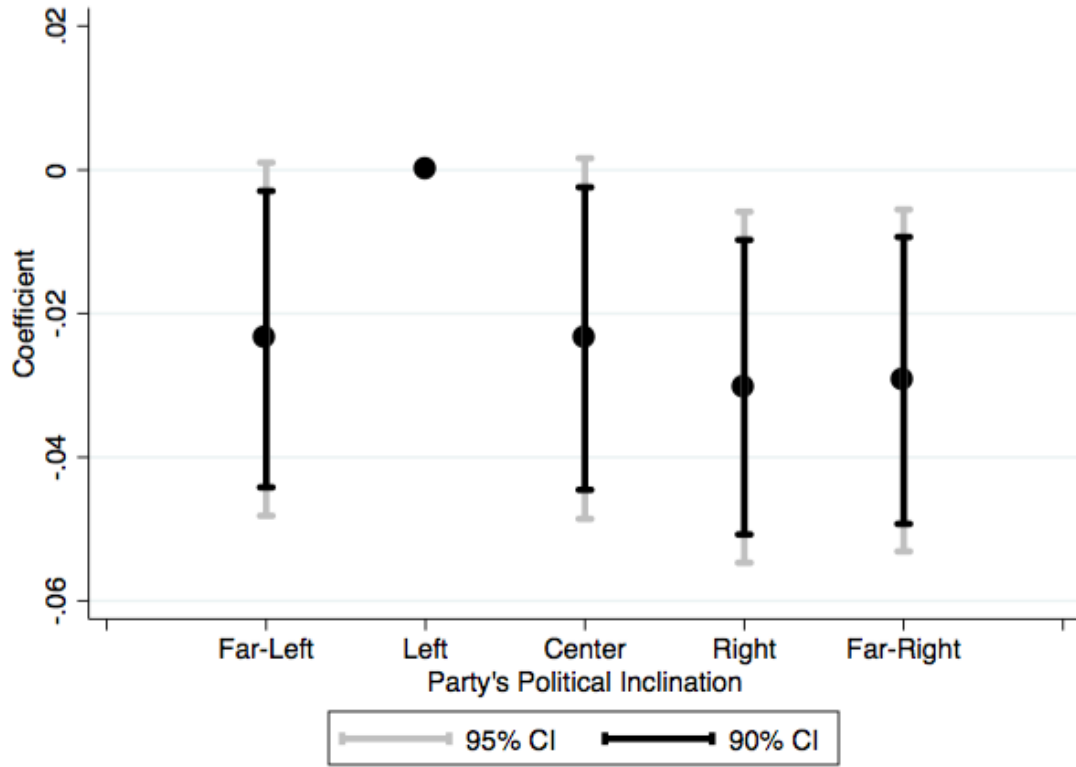
*Notes:* The data come from the local elections during the period 1976-2011. The y-axis represents the share of women among candidates promoted to the parliamentary elections. The solid and dashed lines depict the relationship for respectively the left and right-wing parties. The elections are staggered. Series 1 and Series 2 respectively designate the series that start in 1976 and 1979. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.

Figure VIII: Are the Strategic Nominations Explained by Voters' Attitudes?



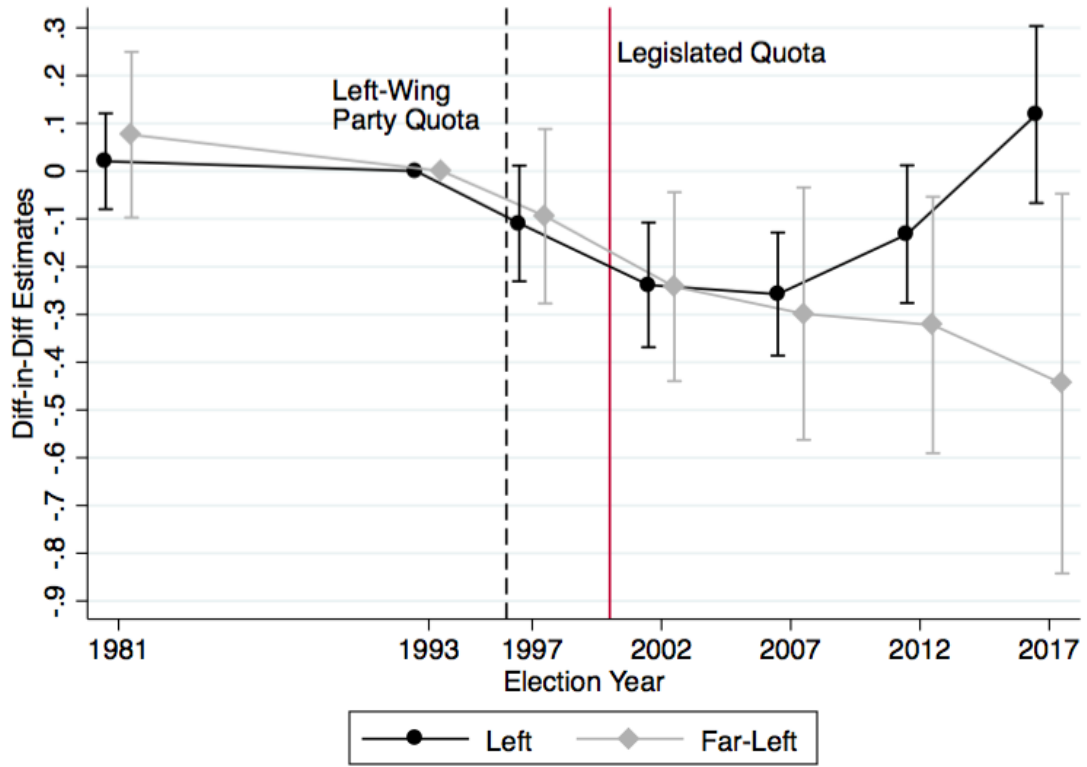
Notes: the data come from the elections for the French Lower House during the period 1988-2017. The dependent variable is a dummy that equals 1 (0) if a female (male) candidate is endorsed. The estimates represent coefficients related to  $\widehat{Win}_{pct} * Year_t$ . The omitted election year is 1993. Confidence intervals at the 95% level are displayed. Standard errors are clustered at the *Département* level. Controlling for Voters' Attitudes designates the specification adding controls for voters' attitudes, interacted with a dummy that equals 1 (0) for years in the post-quota (pre-quota) period. Voters' Attitudes are proxied with the female/male ratio in terms of labor market participation at the district level. In graph (a), the sample contains left-wing candidates, and in graph (b), the right-wing candidates. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.

Figure IX: Strategic Nominations of Women in 2017 - Multiparty Comparison



*Notes:* The data come from the 2017 parliamentary and presidential elections. The y-axis represents the coefficients related to the variable corresponding to the vote share of the presidential candidate of a given party, relatively to the left-wing party, in a specification where the outcome is a dummy that equals 1 (0) if the candidate endorsed by a party during the parliamentary elections is a woman (man). The x-axis represents the political parties. Confidence intervals at the 95% and 90% levels are respectively displayed in grey and black.

Figure X: Long Run Comparison: Left vs Far-Left



Notes: the data come from the elections for the French Lower House during the period 1978-2017. The dependent variable is a dummy that equals 1 (0) if a female (male) candidate is endorsed. The estimates represent coefficients related to  $\widehat{Win}_{pct} * Year_t$ . The omitted election year is 1993. Confidence intervals at the 95% level are displayed. Standard errors are clustered at the *Département* level. Left and Far-Left designate the nomination patterns for the left-wing and far-left parties. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.

## Tables

Table I: Are Women Increasingly Promoted from the Local to the Parliamentary Elections?

<i>Dep. Variable: Candidate at the Parliamentary Elections (1=Yes)</i>			
	(1)	(2)	(3)
<i>Panel 1: Treatment Starts After Quota</i>			
Woman*PostElecYearQuota	0.20*** (0.05)	0.09 (0.06)	0.22*** (0.04)
Woman*PostElecYearQuota*Right-Wing			-0.14** (0.06)
Party Restriction	Left	Right	All
Observations	4728	5083	9811
N Local Districts	4080	4080	4080
N Parliamentary Districts	502	503	516
<i>Panel B: Treatment Starts Election Before Quota</i>			
Woman*PostPrevElecYearQuota	0.16*** (0.06)	0.08 (0.05)	0.18*** (0.04)
Woman*PostPrevElecYearQuota*Right-Wing			-0.12** (0.05)
Party Restriction	Left	Right	All
Observations	4728	5083	9811
N Local Districts	4080	4080	4080
N Parliamentary Districts	502	503	516

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French local elections during the period 1979-2011. The dependent variable is a dummy that equals 1 if the candidate is promoted from the local to the parliamentary elections, and 0 otherwise. In Panel A, the treatment date corresponds to the elections respectively after the introduction of quotas for the left (1997) and right-wing (2002) parties. In Panel B, it corresponds to the elections right before these dates. Controls include district fixed-effects interacted with the party for the related district at the parliamentary elections. They also include ElectionYear\*Party dummies. Standard errors clustered at the related parliamentary district level are given in parentheses.



Table II: Do Female Candidates Attract Less Votes?

<i>Dep. Variable: Vote Share (0-100)</i>				
	(1)	(2)	(3)	(4)
Woman	-4.95*** (0.54)	-3.33*** (0.54)	-2.40*** (0.58)	-1.87*** (0.62)
Woman * Right-Wing	-2.55*** (0.78)	-1.79** (0.76)	-0.33 (0.94)	-0.10 (0.97)
Constituency Level Controls	No	No	Yes	Yes
Candidate Level Controls	No	Yes	No	Yes
Observations	3329	3329	3329	3329
Constituencies	607	607	607	607

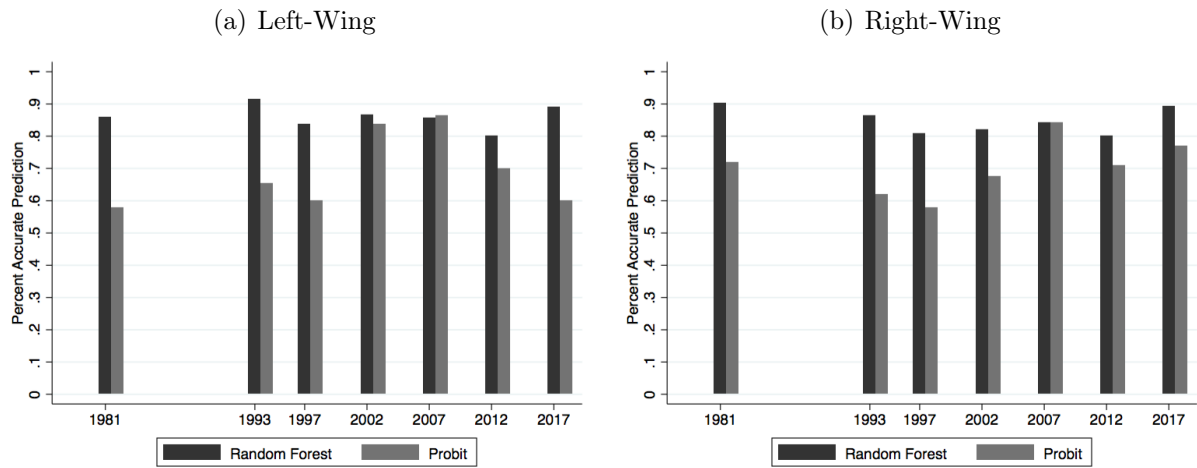
*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the elections for the French Lower House during the period 1997-2017. The sample is restricted to the 4 elections following the introduction of gender quotas for each party (1997-2012 for the left-wing and 2002-2017 for the right wing). The dependent variable is the candidate's vote share (0-100 scale). All regressions include Party\*Year dummies. Constituency Level Controls include a measure for the probability of winning the district and district fixed-effects interacted with the party. Candidate Level Controls include age and political experience (two dummies indicating whether the candidates is new at the parliamentary elections and has previously run at the local elections). Standard errors clustered at the district level are given in parentheses.

# Appendix

## A Empirical Strategy

Figure A1 compares the accuracy of the predictions of the probability of winning a district using a random forest classifier and a probit. In graph (a), we see that for the 1981 elections, the random forest accurately predicts the outcome of almost 90% of districts while the probit accurately predicts the outcome of a little more than 60% of districts.

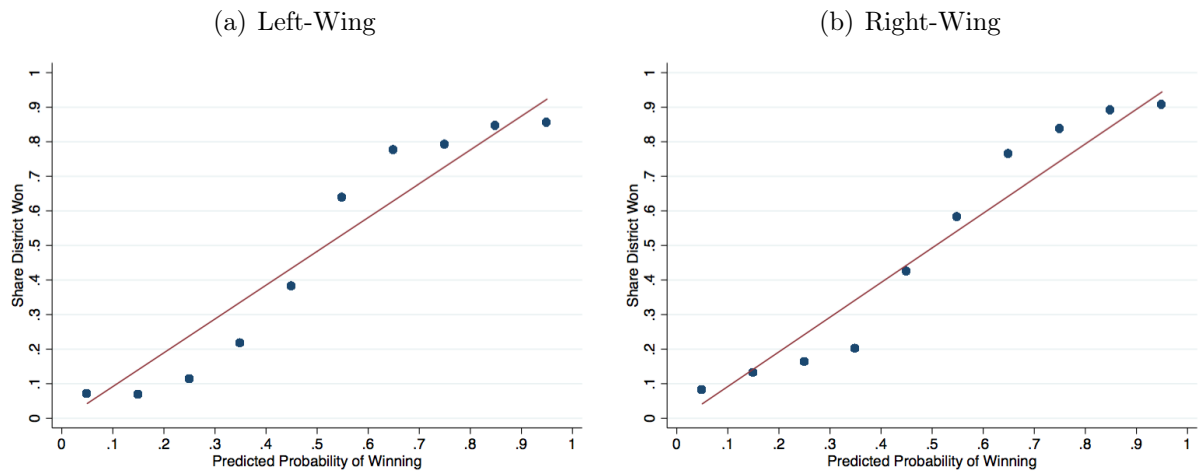
Figure A1: Prediction Performance Random Forest vs Probit



*Notes:* the data come from the elections for the French Lower House during the period 1978-2017. Random forest and Probit respectively designate the prediction accuracy to win a district for the relevant party using a random forest classifier and a probit. Graph (a) and (b) respectively display the accuracy of the prediction methods for the main left-wing and right-wing parties.

Figure A2 displays the correlation between the predicted probability of winning and the actual share of districts won. We observe a clear correlation between the two variables which was to be expected given that, on average, 80-90% of the election outcomes are accurately predicted.

Figure A2: Correlation Between the Share of Districts Won and the Predicted Probability of Winning



*Notes:* the data come from the elections for the French Lower House during the period 1978-2017. The y-axis depicts the share of districts won and the x-axis the predicted probability of winning a district using a random forest classifier. Graph (a) and (b) respectively display the correlation for the main left-wing and right-wing parties.

## B Main Results

Table B1 displays the main results related to Figure II in a Table format. We observe that, following the introduction of quotas (1997 for the left-wing and 2002 for the right-wing), the probability of nominating a woman decreases as the probability of winning a district increases. This effects fades away for the left-wing in 2017. Note that the number of constituencies is higher than 577 because of the partial redistricting that occurred during the period considered.

Table B1: Strategic Nominations of Female Candidates

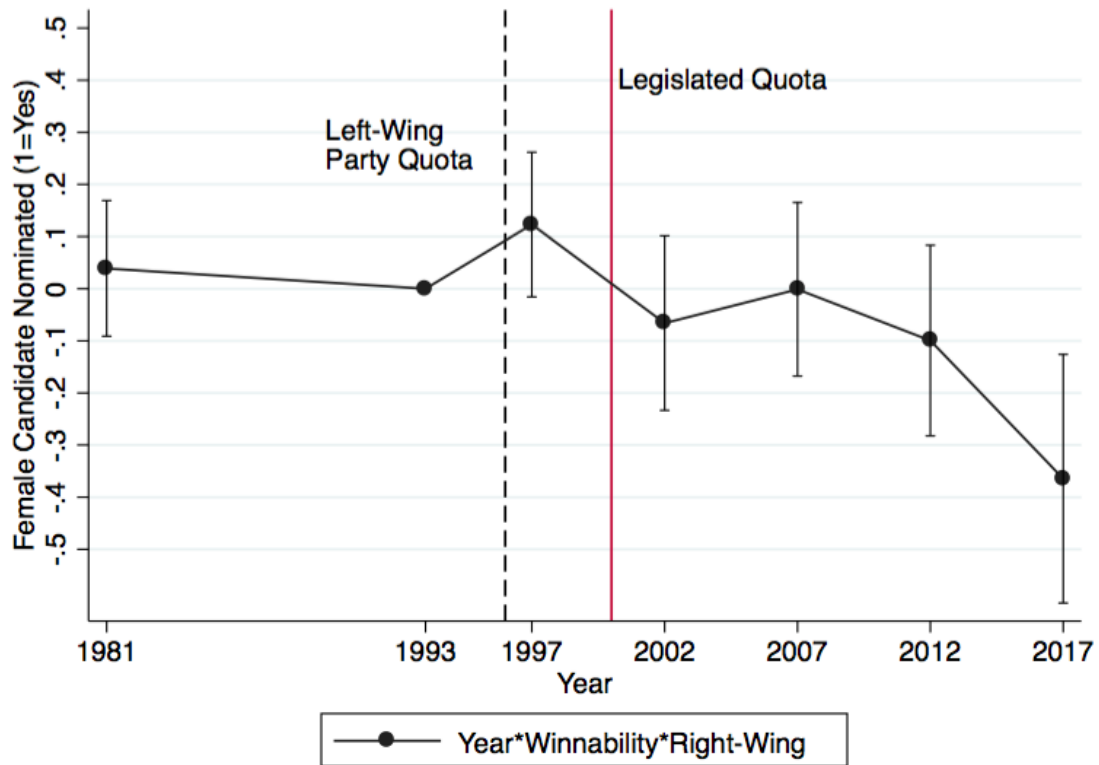
Dep. Var: Woman Nominated (1=Yes)	(1) (2)	
	Left Wing	Right Wing
1981 * Probability Of Winning	0.02 (0.05)	0.06 (0.04)
1997 * Probability Of Winning	-0.11* (0.06)	0.01 (0.04)
2002 * Probability Of Winning	-0.24*** (0.07)	-0.30*** (0.06)
2007 * Probability Of Winning	-0.26*** (0.07)	-0.26*** (0.06)
2012 * Probability Of Winning	-0.13* (0.07)	-0.23*** (0.06)
2017 * Probability Of Winning	0.12 (0.09)	-0.25*** (0.07)
Observations	3328	3632
Constituencies	611	621

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the elections for the French Lower House during the period 1978-2017. The dependent variable is a dummy that equals 1 (0) if a female (male) candidate is endorsed. The omitted election year is 1993. Standard errors clustered at the constituency level are given in parentheses.

Figure B1 describes the results for the triple interaction specification comparing the nomination patterns of the two main parties. We see that the estimates are statistically significant in 2017 at the 1% level, suggesting that, in 2017, the left-wing had stopped

strategically nominating women while the effect persisted for the right wing.

Figure B1: Strategic Nominations of Female Candidates - Triple Interaction Specification



Notes: the data come from the elections for the French Lower House during the period 1978-2017. The dependent variable is a dummy that equals 1 (0) if a female (male) candidate is endorsed. The estimates represent coefficients related to  $\overline{Win}_{ct} * Year_t * Right - Wing_p$ . The omitted election year is 1993. Confidence intervals at the 95% level are displayed. Standard errors are clustered at the *Département* level. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.

Table B2 shows the relationship between terciles of the distribution of the probability of winning and average probability of winning (columns 1 and 3) and the share of districts won (columns 2 and 4). Additionally, columns 1 and 2 are restricted to the left-wing party while columns 3 and 4 are restricted to the right-wing party. We observe that in the first tercile of the distribution, the average probability of winning is 71% for the left-wing and 64% of districts that fall in this category are won.

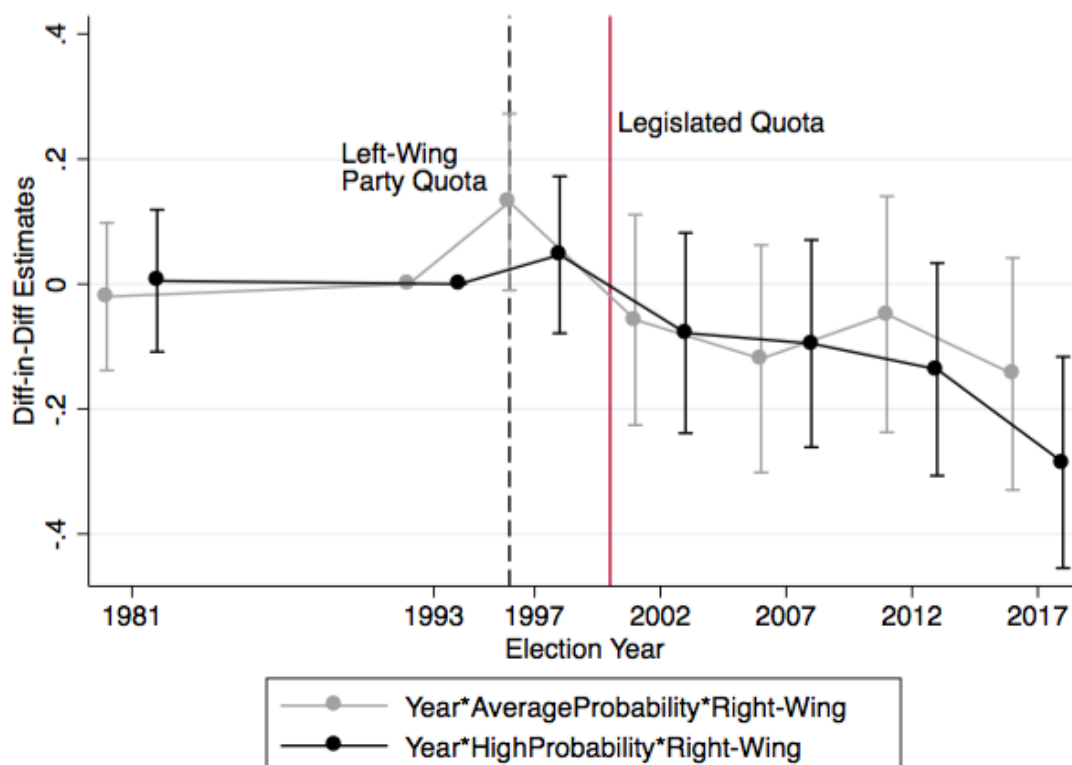
Table B2: Relationship between the Terciles and the Average Probability of Winning and the Share of Districts Won

	(1)	(2)	(3)	(4)
	LW	LW	RW	RW
	Proba	PercentWin	Proba	Percent Win
First Tercile	71%	64%	89.4%	84.86%
Second Tercile	24.6 %	25.7%	43.8%	42.48%
Third Tercile	2.6%	6.8%	6.7%	12.26%

*Notes:* the data come from the elections for the French Lower House during the period 1978-2017. The Table depicts the average probability of winning a district (columns 1 and 3) and the actual share of districts won (columns 2 and 4) for each tercile for the main left- (columns 1-2) and right-wing (columns 3-4) parties.

Figure B2 describes the results for the triple interaction specification comparing the nomination patterns of the two main parties using a discrete measure of the probability of winning. The omitted category is Low Probability of Winning (first tercile of the distribution of the probability of winning). For the category corresponding to the high probability of winning, we see that the estimates are statistically significant in 2017 at the 1% level. In 2007 and 2012, the p-values are respectively 0.261 and 0.116. For the category corresponding to the average probability of winning, we see that the estimates are not statistically significant in 2017, although the p-value is close to standard significant levels at 0.129.

Figure B2: Strategic Nominations of Female Candidates - Triple Interaction Specification Discrete



Notes: the data come from the elections for the French Lower House during the period 1978-2017. The dependent variable is a dummy that equals 1 (0) if a female (male) candidate is endorsed. The estimates represent coefficients related to  $CategoryProbaWinning_{ct} * Year_t * Right - Wing_p$ . The omitted election year is 1993. The omitted probability of winning is Low Probability of Winning (1st Tercile). Confidence intervals at the 95% level are displayed. Standard errors are clustered at the *Département* level. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.

To test whether parties differ in their propensities to strategically nominate women and ensure comparability across the two parties, I restrict the sample to a time window encompassing respectively the 2 and 4 elections before and after the introduction of gender quotas (in 1997 for the left wing and 2002 for the right wing). In this window (2 elections before and 4 after the quotas), I have information about the two main parties. For each party, I define a dummy *Post* equal to 1 if the election is between the introduction of gender quotas and the 4 subsequent elections and 0 otherwise.

The findings are displayed in Table B3. In column 1, we observe that, following the

introduction of gender quotas, the probability of a woman being endorsed declines as the probability of winning increases. The probability of a woman being endorsed is 17 p.p. lower in districts with a high probability relatively to those with a low probability of winning. Does the right-wing party have a higher propensity to strategically nominate women? The next two rows suggest that it does. In column 1, we observe that the right wing does resort more to strategic nominations as, after the introduction of quotas, the probability of nominating women in districts with an average or high probability of winning is resp. 10 p.p. and 8 p.p. lower than for the left wing. This effect holds when time fixed-effects are included (column 2) and remain stable but imprecisely estimated when district fixed-effects are included (column 3) on top of time-fixed effects, although the proximity of the p-values to standard significance levels (resp. of 0.115 and 0.199 for the rows related to *HighProba* and *AverageProba*) and the stability of the coefficients' magnitude suggest that this imprecision is caused by a lack of statistical power.



Table B3: Do Parties Differ in Their Propensity to Strategically Nominate Women?

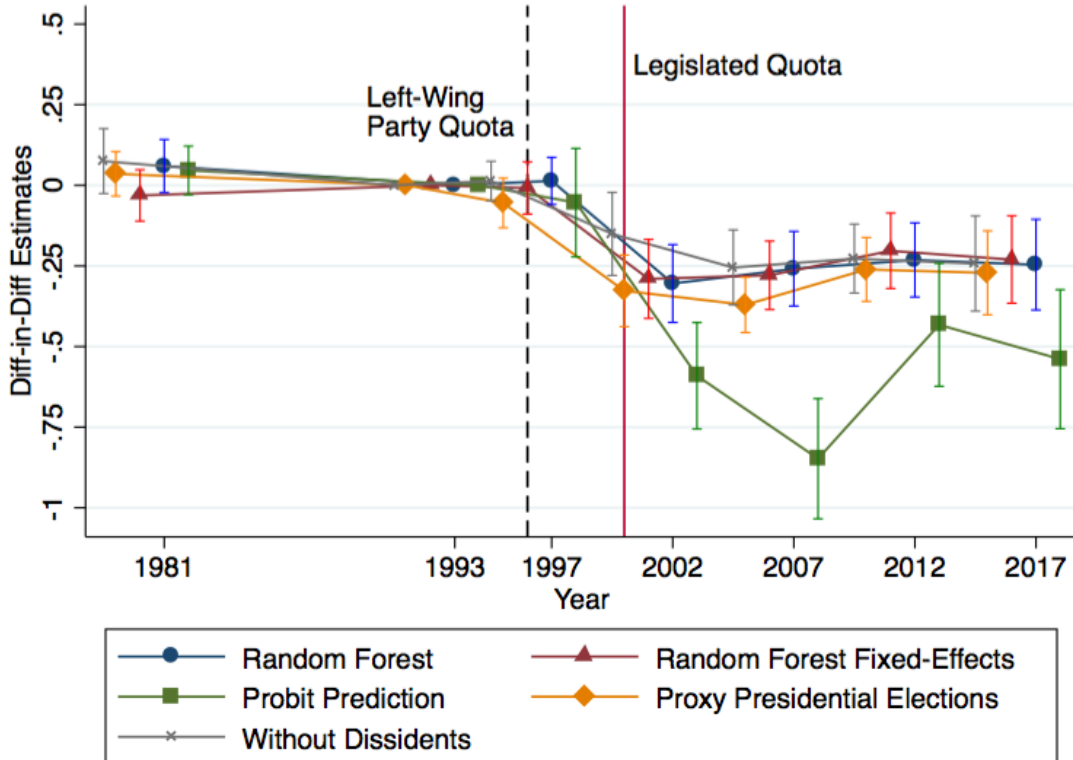
<i>Dep. Variable: Candidat is a Woman (1=Yes)</i>			
	(1)	(2)	(3)
AverageProbaToWin*Post	-0.08** (0.04)	-0.07* (0.04)	-0.10** (0.05)
HighProbaToWin*Post	-0.17*** (0.03)	-0.17*** (0.03)	-0.15*** (0.04)
AverageProbaToWin*Post*Right-Wing	-0.10** (0.05)	-0.11** (0.05)	-0.08 (0.06)
HighProbaToWin*Post*Right-Wing	-0.08* (0.05)	-0.08* (0.05)	-0.09 (0.06)
Time Fixed-Effects	No	Yes	Yes
Constituency Fixed-Effects	No	No	Yes
Observations	6072	6072	6072
Constituencies	622	622	622

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the elections for the French Lower House during the period 1978-2017. The dependent variable is a dummy that equals 1 (0) if the candidate endorsed is a woman (man). To account for the staggered implementation of the quotas for both parties, *Post* is a dummy equal to 1 (0) if the election was between 1997 and 2012 (1981 and 1993) for the left wing and between 2002 and 2017 (1993 and 1997) for the right wing. *AverageProbaToWin* and *HighProbaToWin* are respectively dummy that equals 1 if the probability of winning is in the second and third tercile of the distribution. Controls include year fixed-effects in column 2 and year fixed-effects plus district fixed-effects in column 3. Standard errors are clustered at the *Département* level.

## C Robustness Checks

Figure C1 describes the robustness checks presented in Section 5.3 for the right-wing party. The results appear robust to all the tests. Note that the test related to the 2017 switchers is not replicated for the right-wing as it only concerns the left-wing party.

Figure C1: Robustness Findings Right-Wing

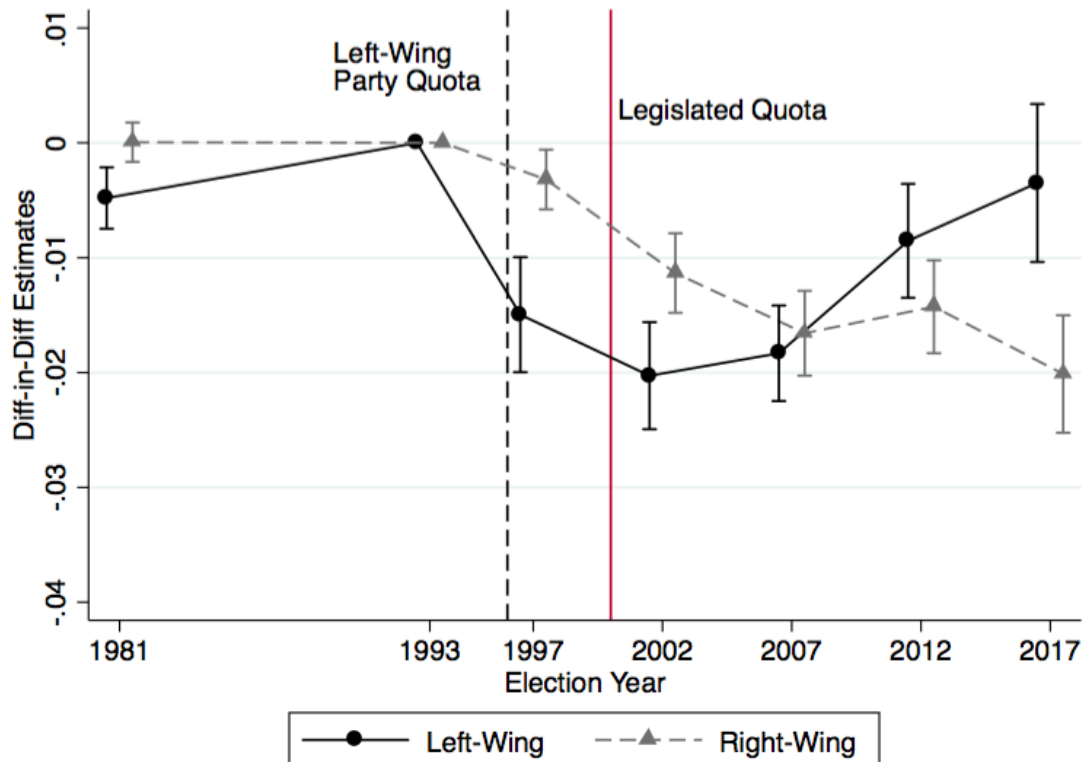


*Notes:* the data come from the elections for the French Lower House during the period 1978-2017. The estimates represent coefficients related to  $\widehat{Win}_{pct} * Year_t$ . The omitted election year is 1993. The sample is restricted to nominations made by the main right-wing party. Random Forest designate the standard specification. Random Forest Fixed-effects augments the standard specification with district fixed-effects. Probit Prediction designate the methodology using a probit model to estimate the probability of winning a district (instead of a random forest classifier). Proxy Presidential Elections designates the methodology using results from the presidential elections to proxy for political party support. Without Dissidents designates the sample of districts without dissidents. Confidence intervals at the 95% level are displayed. Standard errors are clustered at the *Département* level. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.

Finally, I also estimate Equation 2 by replacing the predicted probability of winning a district by the previous vote share ( $\widehat{Win}_{p,c,t}$  by  $VoteShare_{p,c,t-1}$ ). As explained in the

main text, the use of the vote share variable allows not to make any assumption on the functional form of the probability of winning a district. Figure C2 displays the results. We observe similar nomination patterns.

Figure C2: Evolution of Strategic Nominations of Female Candidates - Replacing Probability of Winning by Previous Vote Share



Notes: the data come from the elections for the French Lower House during the period 1978-2017. The dependent variable is a dummy that equals 1 (0) if a female (male) candidate is endorsed. The estimates represent coefficients related to  $VoteShare_{p,c,t-1} * Year_t$ . The omitted election year is 1993. Confidence intervals at the 95% level are displayed. Standard errors are clustered at the *Département* level. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.

## D Mechanisms

This section describes additional results and robustness checks related to Section 6.

### D.1 Supply Effects

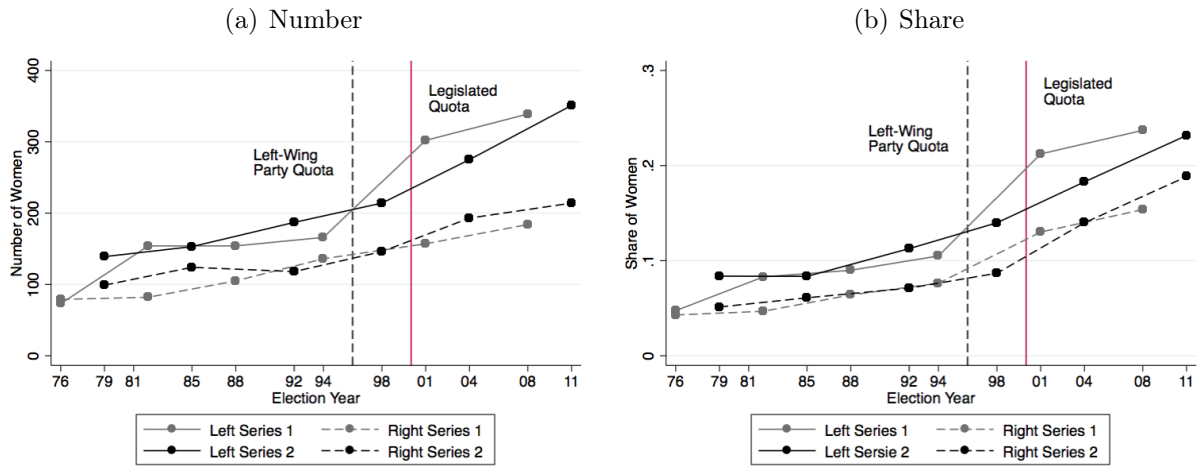
This section describes the methodological details and additional results and robustness checks related to the supply effects (Section 6.2).

*Methodological Details on the links between the two elections* - As explained in the body of the paper, the local elections happen every 6 years in 4,080 districts. The parliamentary elections occur every 5 years in 577 districts. Local districts are included in parliamentary districts, i.e. they constitute a geographical sub-division (the French words to designate the local and parliamentary districts are respectively *cantons* and *arrondissements*). Therefore, it is easy to relate the the parliamentary districts to the local ones. The main challenge is to identify the same individuals across the two elections. For this purpose, I use the information on the first and last name of each candidate. Within each parliamentary district, I combined the two datasets on the parliamentary and local elections and formed all the pairwise combinations. Then, I created a dummy indicating whether a candidate runs at both elections. This dummy equals 1 if a candidate has the same party affiliation, first name and last name (I allowed for a Levensthein distance below or equal to one) across the two elections. Could this variable capture false matches, i.e. candidates who are different but have the same first name and last name? Based on raw descriptive statistics, it seems highly unlikely as nearly 99.5% of local candidates within the same parliamentary district have different party affiliation, first and last names.

Figure D1 describes the evolution of the number and share of women among candidates at the local elections.

Table D1 describes the results for the sample of candidates who had never been candidates before during the parliamentary elections. This is useful to study whether these nominations correspond to promotions or rewards. On one hand, women could first be nominated to the local election then run for the parliamentary elections, or, alternatively, women could first run for the upper-level and then be rewarded with a local district. As the results are essentially similar to those described in Table I, this suggests that the effects mainly correspond to a promotion rather than a reward.

Figure D1: Evolution of the Number and Share of Women Among Candidates at the Local Elections



Notes: The data come from the local elections during the period 1976-2011. The y-axis represents the number (graph a) and the share of women among candidates at the local elections. The solid and dashed lines depict the evolution per election year for respectively the left- and right-wing. The elections are staggered. Series 1 and Series 2 respectively designate the series that start in 1976 and 1979. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.

Table D1: Are Women Increasingly Promoted from the Local to the Parliamentary Elections? - Sample Without Former Candidates

<i>Dep. Variable: Candidate at the Parliamentary Elections (1=Yes)</i>			
	(1)	(2)	(3)
<i>Panel 1: Treatment Starts After Quota</i>			
Woman*PostElecYearQuota	0.17*** (0.05)	0.07 (0.05)	0.19*** (0.04)
Woman*PostElecYearQuota*Right-Wing			-0.13** (0.05)
Party Restriction	Left	Right	All
Observations	3986	4337	8323
N Local Districts	4080	4080	4080
N Parliamentary Districts	502	501	516
<i>Panel B: Treatment Starts Election Before Quota</i>			
Woman*PostPrevElecYearQuota	0.17*** (0.06)	0.09 (0.06)	0.18*** (0.04)
Woman*PostPrevElecYearQuota*Right-Wing			-0.10** (0.05)
Party Restriction	Left	Right	All
Observations	3986	4337	8323
N Local Districts	4080	4080	4080
N Parliamentary Districts	502	501	516

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French local elections during the period 1979-2011. The sample is restricted to candidates who have not previously run during the parliamentary elections. The dependent variable is a dummy that equals 1 if the candidate is promoted from the local to the parliamentary elections, and 0 otherwise. Controls include district fixed-effects for the related district at the parliamentary elections. Standard errors clustered at the parliamentary district level are given in parentheses.

In Tables D2 and D3, I provide descriptive evidence on the evolution of characteristics of left-wing and right-wing female candidates. The data are provided by the French Ministry of Interior starting in 1997. The information on the past profession of candidates is coded following the official French Classification of Professions and Socioprofessional Categories.<sup>34</sup> The categories include: Executives and Intellectual Profession (such as man-

<sup>34</sup><https://www.insee.fr/en/metadonnees/definition/c1493>

agers, high-ranking officials, lawyers, medical doctors, engineers or university professors), Agriculture (such as farmers or agriculture workers), Sales / Trade (such as entrepreneur, business owners, traders), Intermediate Profession (positions that are hierarchically in between executives/intellectual professions and employees), Employees, Workers, Retired, No Profession / Student (also include professional politicians who have not occupied a different position in the past).

Overall, we observe that the characteristics of the left-wing women remained similar over time, their age increased slightly from 48.34 years old in 1997 to 49.54 in 2017 and they also became more experienced as nearly 80% of female candidates had not previously run in 1997 against 52% in 2017. Their past occupation also remained similar over time. For the right-wing female candidates, their age decreased slightly from about 51 years old in 1997 to 49 in 2017 and they also became less experienced in 2017, which could be expected as the right-wing party had to comply with the quota from 2002 onwards. As for the past occupations of candidates, an increasing number came from positions in Sales / Trade at the cost of less female candidates having no previous profession. In terms of differences between the two parties, it is interesting to note that more left-wing female candidates came from previous occupations that required higher levels of educations (Executives and Intellectual Profession) than their right-wing counterparts (79% vs 64% in 2017). Finally, note that the number of candidates did not increase linearly as the total share of women depends on the total number of candidates endorsed by the party which may differ from one election year to the next, depending on potential alliances.

Table D2: Evolution of the Characteristics of Female Candidates - Left-Wing

	1997	2002	2007	2012	2017
Age	48.34	49.15	49.04	50.08	49.54
New Candidate Parliamentary Elections (1=Yes)	0.79	0.53	0.62	0.63	0.52
Ran At the Local Elections (1=Yes)	0.32	0.30	0.37	0.28	0.13
Executives and Intellectual Profession (1=Yes)	0.78	0.78	0.73	0.70	0.79
Agriculture (1=Yes)	0.00	0.00	0.00	0.01	0.01
Sales / Trade (1=Yes)	0.02	0.03	0.02	0.02	0.02
Intermediate Profession (1=Yes)	0.01	0.01	0.02	0.01	0.01
Employee (1=Yes)	0.02	0.02	0.03	0.03	0.05
Workers (1=Yes)	0.00	0.00	0.00	0.00	0.00
Retired (1=Yes)	0.08	0.09	0.13	0.15	0.08
No Profession / Student (1=Yes)	0.07	0.07	0.07	0.08	0.05
Observations	134	168	238	217	182

*Notes:* The data come from the elections for the French Lower House during the period 1997-2017. The sample is restricted to female candidates endorsed by the main left-wing party.



Table D3: Evolution of the Characteristics of Female Candidates - Right-Wing

	1997	2002	2007	2012	2017
Age	50.98	49.76	51.69	50.14	49.41
New Candidate Parliamentary Elections (1=Yes)	0.35	0.77	0.52	0.68	0.68
Ran At the Local Elections (1=Yes)	0.50	0.19	0.21	0.18	0.04
Executives and Intellectual Profession (1=Yes)	0.65	0.64	0.65	0.63	0.64
Agriculture (1=Yes)	0.02	0.03	0.01	0.00	0.02
Sales / Trade (1=Yes)	0.02	0.06	0.07	0.10	0.11
Intermediate Profession (1=Yes)	0.04	0.01	0.01	0.01	0.01
Employee (1=Yes)	0.02	0.02	0.07	0.05	0.04
Workers (1=Yes)	0.00	0.00	0.00	0.00	0.01
Retired (1=Yes)	0.02	0.04	0.05	0.09	0.07
No Profession / Student (1=Yes)	0.22	0.20	0.14	0.12	0.11
Observations	46	108	147	129	188

*Notes:* The data come from the elections for the French Lower House during the period 1997-2017. The sample is restricted to female candidates endorsed by the main right-wing party.

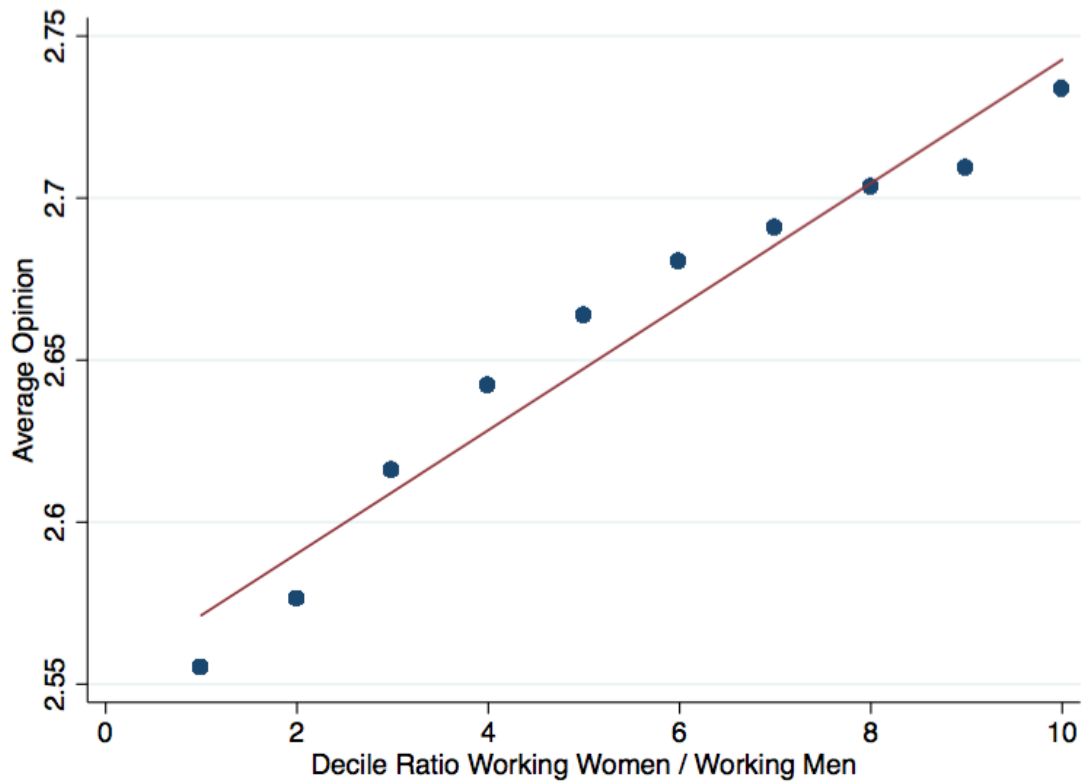
## D.2 Do Parties Respond to Voters' Bias and Attitudes?

To validate the proxy for voters' attitudes, I use data from the French barometer survey. It is a yearly survey ran by the Ministry of Health on a sample of about 4,000 individuals. These data are relevant as they cover the entire 2001-2017 period and a relatively large sample. I use data from the years 2002, 2007 and 2012. For each year, I exploit answers to a question related to opinions towards the role of women in society. The question is labeled as followed: "*To what extent do you agree with the following statement: ideally, women should stay at home to raise their children?*" The answer is given on a 1-4 scale, 1 being I completely agree and 4 being I completely disagree. The data divide France in 9 regions. I therefore summarize the information contained in the survey at the regional-year level. In total, I have 27 observations (9 regions x 3 years).

To construct the female/male ratio at the regional level, I use data from the municipality censuses of the years 1999, 2006 and 2011. I compute the ratio at the regional level and correlate it with the survey responses described above.

The results are presented in Figure [D2](#). We observe a clear correlation between attitudes and the ratio, suggesting that the ratio can be a valid proxy for voters' attitudes.

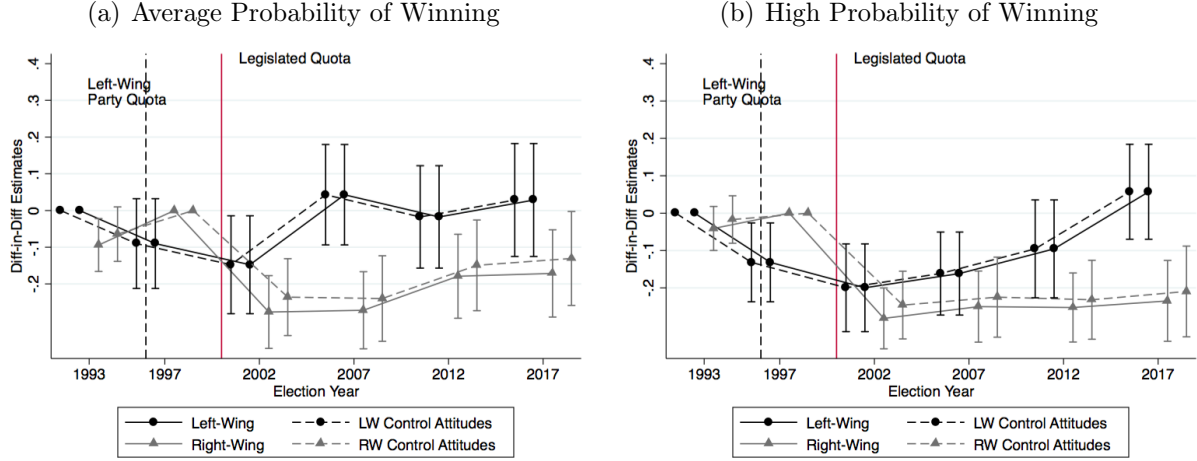
Figure D2: Correlation Between Sexist Attitudes and Female Labor Market Participation



*Notes:* the data come from the French barometer survey in 2002, 2007 and 2012 and the 1999, 2006 and 2011 municipality censuses. The x-axis designates the decile of the distribution of the ratio of female/male in terms of labor market participation. The y-axis designates the average answer (1-4 scale) to the question “To what extent do you agree with the following statement: ideally, women should stay at home to raise their children?”

In Figure D3, I replicate Figure III, which displays the main results using a discrete measure of the probability of winning a district, and control by the proxy for attitudes at the district level. The results are essentially similar.

Figure D3: The Different Propensities to Strategically Nominate Women - Controlling for Attitudes

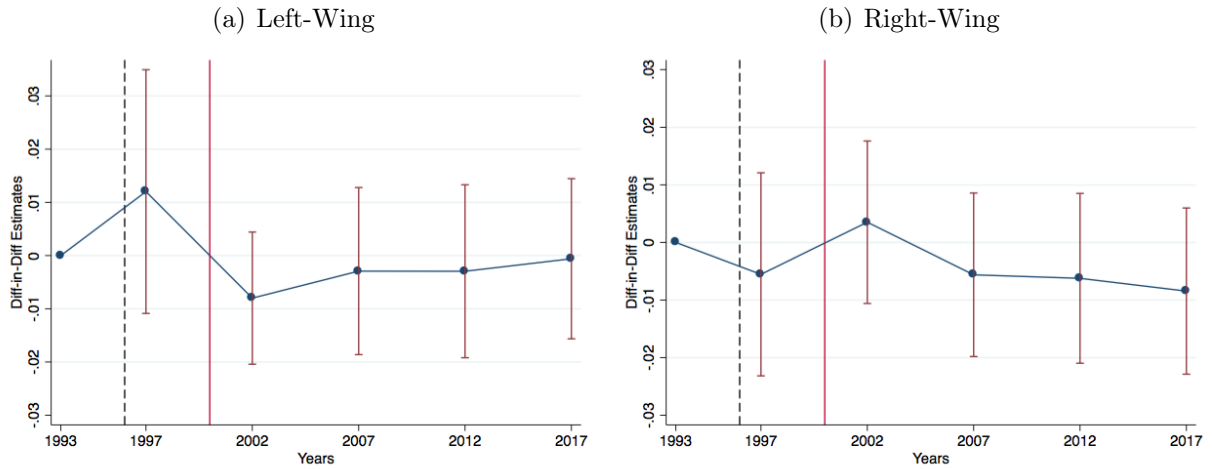


Notes: the data come from the elections for the French Lower House during the period 1978-2017. Graph (a) and (b) respectively display the coefficients for each election related to the variables “average probability of winning” and “high probability of winning”. The omitted category is “low probability of winning”. These categories are based on the terciles of the distribution of the probability of winning a district by each party using a random forest classifier. The omitted election year is 1993. Confidence intervals at the 95% level are displayed. Standard errors are clustered at the *Département* level. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.

Another channel explaining the results could be that attitudes are changing differently in left- and right-wing districts. For instance, if left-wing districts became increasingly gender egalitarian over time, the left-wing party could have decided to nominate increasingly more women in this type of district. To study this question, I estimate the following equation for the left-wing party:  $Attitudes_{ct} = \sum_{t=1997}^{2017} \beta_t LeftWingDistrict_{ct} * Year_t + \sum_{t=1997}^{2017} \alpha_t Year_t + LeftWingDistrict_{ct} + \epsilon_{ct}$ , where  $LeftWingDistrict_{ct}$  is a dummy that equals one (zero) if the district was won (lost) by the left-wing party in the previous election. I estimate this equation separately for the left- and right-wing parties (replacing the relevant dummy indicating which party won the district during the previous elections).

Figure D4 displays the results. The omitted election year is 1993, which corresponds to the first year for which the proxy for attitudes is available. We observe that for both the left- and right-wing parties, the coefficients are statistically non-significant for every election year. Note that this does not imply that attitudes are not becoming increasingly more gender egalitarian overall, this simply suggests that attitudes are not changing more in left-wing (or right-wing) districts as compared to other districts.

Figure D4: Are Attitudes Changing in Left- and Right-Wing Districts



*Notes:* the data come from the elections for the French Lower House during the period 1993-2017. The dependent variable is the share of working women in a given district, used as a proxy for gender egalitarian attitudes. Graph (a) and (b) respectively display the coefficients for the left- and right-wing parties. The omitted election year is 1993. Confidence intervals at the 95% level are displayed. Standard errors are clustered at the district level. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.

Table D4 displays the results related to the voter bias against female candidates using all years pooled (for which the data on candidates' characteristics is available). In the body of the paper, to allow comparisons between the left and right-wing parties, Table II presented the results only for the 4 years following the introduction of gender quotas. As we can see in Table D4, the results are very similar using all years pooled.

Table D4: Do Female Candidates Attract Less Votes? - All years pooled

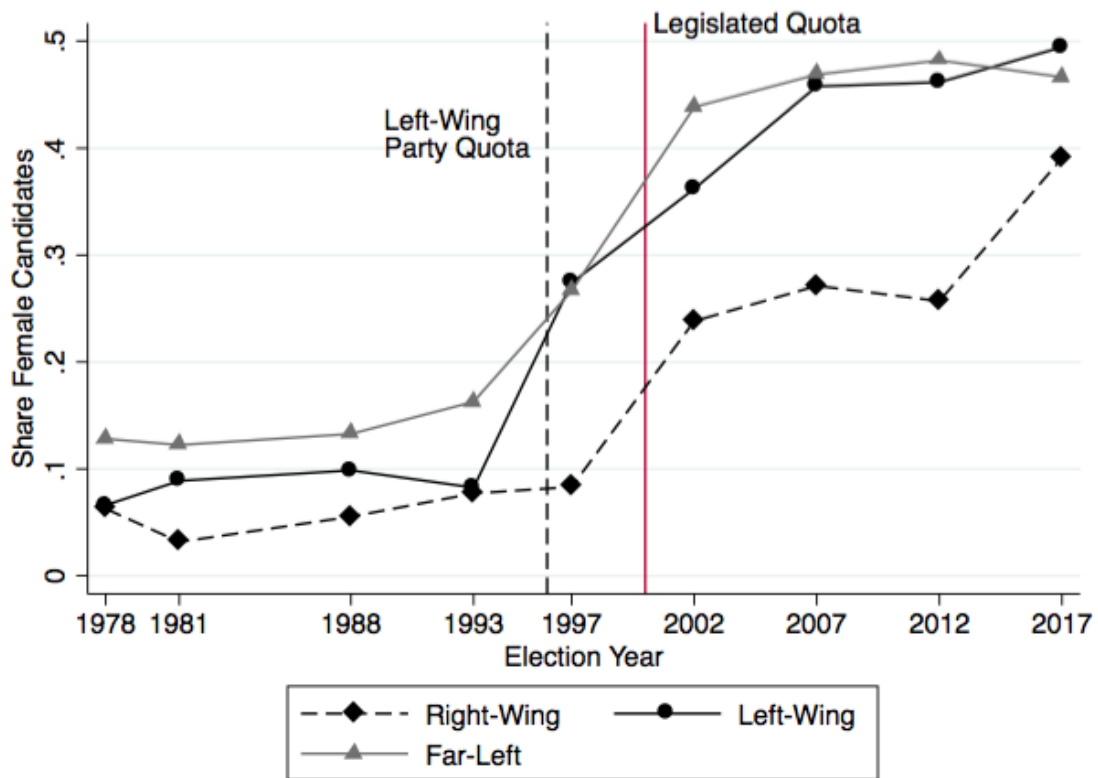
<i>Dep. Variable: Vote Share (0-100)</i>				
	(1)	(2)	(3)	(4)
Woman	-4.07*** (0.47)	-2.86*** (0.45)	-2.01*** (0.44)	-1.53*** (0.44)
Woman * Right-Wing	-2.93*** (0.73)	-2.00*** (0.68)	-0.79 (0.76)	-0.26 (0.74)
Constituency Level Controls	No	No	Yes	Yes
Candidate Level Controls	No	Yes	No	Yes
Observations	4310	4310	4310	4310
Constituencies	609	609	609	609

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the elections for the French Lower House during the period 1997-2017.. The dependent variable is the candidate's vote share (0-100 scale). All regressions include Party\*Year dummies. District Level Controls include a measure for the probability of winning the district and district fixed-effects interacted with the party. Candidate Level Controls include age and political experience (two dummies indicating whether the candidates is new at the parliamentary elections and has previously run at the local elections). Standard errors clustered at the district level are given in parentheses.

### D.3 Comparison with Other Parties

Figure D5 displays the share of female candidates for each election year by party. We observe that the far-left party has nominated slightly more women than the left-wing party before the introduction of quotas and about as many after their introduction. Additionally, in 1997, the far-left party also self-imposed a 30% gender quota.

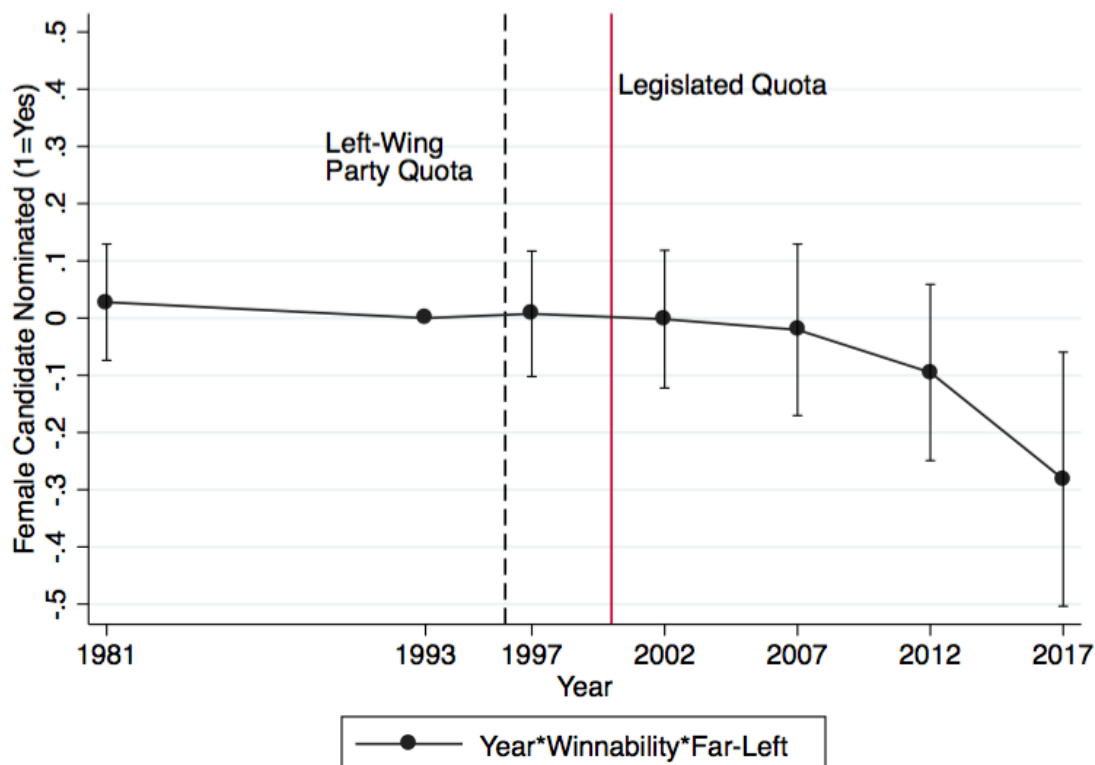
Figure D5: Share of Female Candidates Per Election Year



*Notes:* the data come from the elections for the French Lower House during the period 1978-2017. the y-axis represents the share of female candidates for each election year. The x-axis represents the election years.

Figure D6 displays the estimates for the triple interaction results. We observe that the nomination patterns of the left and far-left parties are statistically different in 2017.

Figure D6: Strategic Nominations of Female Candidates: Left vs Far-Left - Triple Interaction Specification



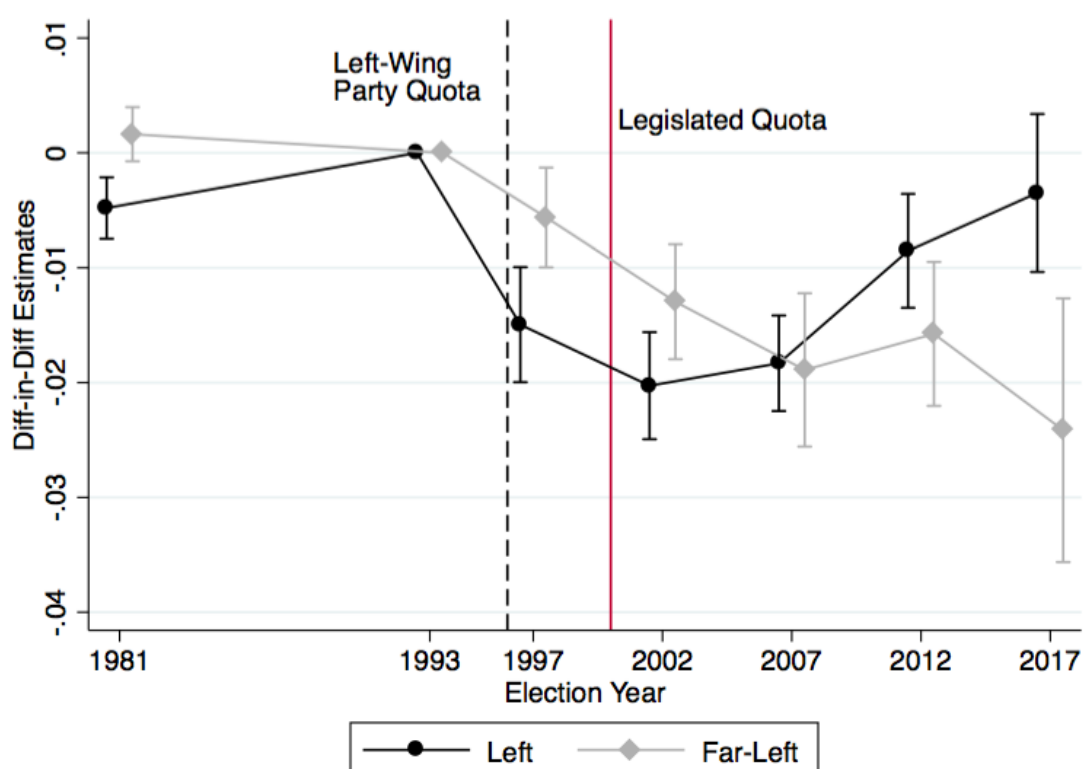
Notes: the data come from the elections for the French Lower House during the period 1978-2017. The dependent variable is a dummy that equals 1 (0) if a female (male) candidate is endorsed. The estimates represent coefficients related to  $\widehat{Win}_{pct} * Year_t * Far-Left_p$ . The omitted election year is 1993. Confidence intervals at the 95% level are displayed. Standard errors are clustered at the *Département* level. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.

One concern about comparing the left-wing and far-left parties is that the empirical strategy may not have the same relevance for both parties. In particular, over the period considered, the left-wing party has won nearly 37% of seats while the far-left party has won about 6% of seats. Therefore, predicting the probability of winning seems more suitable for the left-wing party than the far-left party, given that it rarely wins elections. To demonstrate the robustness of this methodology, I replicate the empirical strategy and replace the variable  $\widehat{Win}_{p,c,t}$  by the variable  $VoteShare_{p,c,t-1}$ . The idea is that the variable  $VoteShare_{p,c,t-1}$  may be a better indicator of interest of the winnability of a district for the far-left party.



The results are displayed in Figure D7. The pattern is essentially similar to the one observed in Figure X. The left-wing party nominated women in districts where the vote share was lower after the introduction of quotas. By 2017, it had stopped doing so. On the opposite, the far-left party seems to have continued nominating women in less winnable districts up until 2017, and, if anything, this nomination pattern seems to have worsened with time.

Figure D7: Evolution of Strategic Nominations of Female Candidates - Replacing Probability of Winning by Vote Share



Notes: the data come from the elections for the French Lower House during the period 1978-2017. The dependent variable is a dummy that equals 1 (0) if a female (male) candidate is endorsed. The estimates represent coefficients related to  $VoteShare_{p,c,t-1} * Year_t$ . The omitted election year is 1993. Confidence intervals at the 95% level are displayed. Standard errors are clustered at the *Département* level. The vertical dashed-line and solid line respectively correspond to the introduction of the left-wing party quota and the legislated quota.