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Thomas Le Barbanchon, Julien Sauvagnat

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# Electoral Competition, Voter Bias, and Women in Politics

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Thomas Le Barbanchon  
Julien Sauvagnat

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Only a quarter of the members of the world's national parliaments are women. Despite significant progress in recent years, women remain largely under-represented among elected politicians. This study provides some explanations for the under-representation of women in politics using data from the past seven French legislative elections. On the one hand, the analyses suggest that there is a preference bias among voters towards male candidates. In addition, political parties contribute to reproducing the under-representation of women in elected office by running fewer female candidates in constituencies where voter bias is high. To promote women's access to political office, the 2000 [law to promote equal access of women and men to electoral mandates and elective offices](#), also known as the parity law, requires French political parties to nominate women as 50% of their candidates or face financial penalties. As expected, the application of this law has led to an increase in the proportion of women candidates. However, this proportion is relatively lower in electoral districts where the vote is close compared to those where a majority is more easily obtained. In these competitive districts, paying a fine for not complying with the parity rule is more advantageous than the risk of losing the election by running a woman rather than a man. This suggests that parties still prefer to put forward male rather than female candidates to increase their chances of winning.

- An increase of €200 in the gross monthly gender pay gap, in favor of men, increases the vote gap between male and female candidates in legislative elections by 1 percentage point in favor of men.
- A 10 percentage-point increase in the proportion of people reporting that men are better political leaders than women is associated with a 10% decrease in the number of women running for office.
- A 10% increase in the number of districts where the electoral race is close significantly reduces the effectiveness of the parity law: the share of women parliamentarians drops from 28% to 23%.



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## Introduction

Despite significant progress in recent years, there is still some way to go to achieve gender parity in elected office. Only a quarter of the world's national parliamentarians are women.

There is no consensus on the mechanisms contributing to this under-representation. Some work explores the role of political parties in promoting male candidates (Norris and Lovenduski, 1995), but the findings of recent studies are mixed (Casas-Arce and Saiz, 2015; Bagues and Campa, 2021).

The possibility that women's access to political office is limited by voter preferences is also widely debated. One reason is the difficulty in empirically identifying *voter preference bias* for male candidates. This bias corresponds to a situation in which a voter is more likely to vote for a male politician than for a female politician, even though both candidates have the same ideology and expertise.<sup>1</sup>

This study measures *voter bias* against women in politics and the *strategic bias of political parties*, which reinforce the under-representation of women in politics by incorporating voter bias into their choice of candidates. The analyses use electoral results from the past seven French legislative elections, from 1988 to 2017 (see Box 1).

## Voter preference bias in favor of male candidates

According to Bertrand (2011), the gender pay gap that is not explained by the skill level of employees or the nature of their jobs reflects negative ideas about women's place in society. The *bias of voters* in favor of men is thus approximated by the gap in gross monthly earnings between women and men at the municipal level (see Box 1).

Voters' preference bias in favor of male candidates is approximated in each municipality by the gender pay gap.

These are compared with the vote gaps between male and female candidates in legislative elections. The same electoral district includes several municipalities, which makes it possible to compare the electoral results and the gender pay gap in municipalities with the same candidates (because they are from the same district).

<sup>1</sup>The origins of this bias can be multiple: voters' opinion on the role of women in society, discriminatory behaviors against women, etc.

A large pay gap between women and men, to the disadvantage of women, is associated with a significantly higher preference of voters for male candidates.

Figure 1 presents the coefficients of several econometric analyses. In all analyses, there is a negative and statistically significant relationship between the pay gap and the vote gap: residents of municipalities with high pay disparities in favor of men give more votes to male candidates than to female candidates.

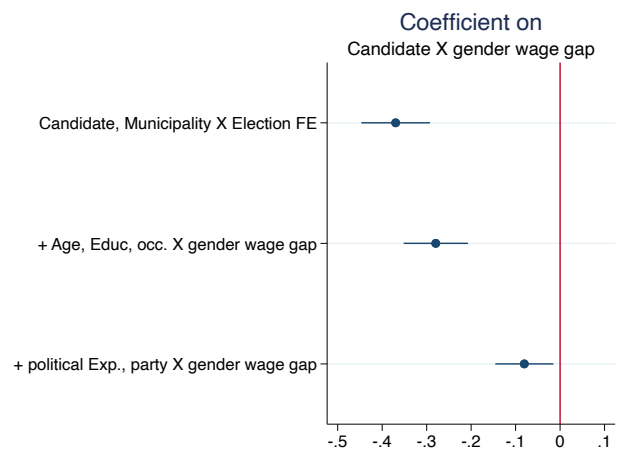


Figure 1: Effect of the gender pay gap on the vote gap between female and male candidates in legislative elections

Note: This figure presents the coefficients of Equation 1 under the three linear regression models presented in Part 1 of Box 1. The horizontal lines represent the 95% confidence intervals. FE: fixed effect.  
Sources: Administrative data on candidates from the French Ministry of the Interior, supplemented by other sources (see Box 1) and DADS, Insee.  
Coverage: Candidates in legislative elections between 1993 and 2017 whose votes are recorded by municipality and by election.  
Interpretation: According to the third specification, a 10 percentage-point increase in the gender pay gap, in favor of men, results in a 0.7 percentage-point loss of vote share for female candidates.

In the most comprehensive analysis, an increase of €200 in the gross monthly gender pay gap, in favor of men, decreases the vote share received by female candidates (relative to male candidates) by 1 percentage point. For comparison, in the analysis sample, about 12% of runoff results in the legislative elections have vote gaps between the two candidates of less than 1%. These situations could have resulted in a different outcome in the absence of voter preference bias. This confirms that voter bias in favor of male candidates has a significant impact on electoral outcomes in terms of gender parity.

Even when controlling for other characteristics of the municipality – such as its proportion of female voters, size, or employment rate – voter bias in favor of male candidates remains significant.

The presence of voter bias in favor of male candidates re-

lated to the gender pay gap raises questions about the integration of this bias into the strategies of political parties.

## Integration of voter preference bias by political parties

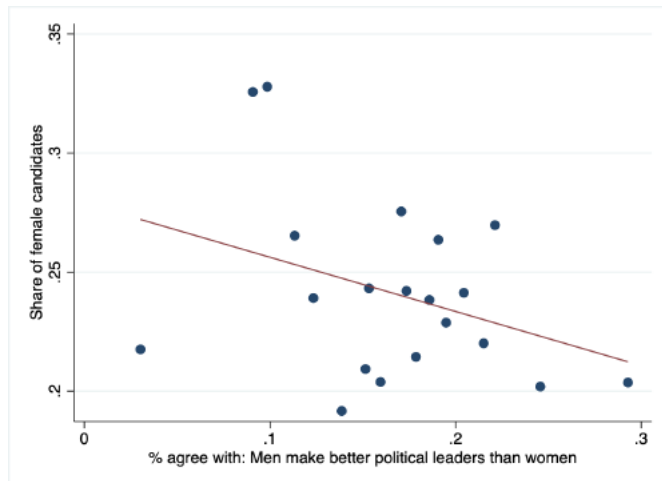


Figure 2: Relationship between the share of female candidates in the French legislative elections and voters' stated preference for men in politics

**Note:** This figure presents the relationship between the share of female candidates and the voter preference bias estimated in the linear regression presented in Part 2 of Box 1.  
**Sources:** French Ministry of the Interior administrative data on candidates, supplemented by other sources (see Box 1) and Generations and Gender Survey (GGS).  
**Coverage:** Candidates in legislative elections between 1993 and 2017.  
**Interpretation:** The slope of the line corresponds to the  $\beta$  coefficient of Equation 2. A 10 percentage-point increase in stated preference for men leads to a 2.3 percentage-point decrease in the share of female candidates.

To measure the strategies of political parties, and in particular to identify whether they are incorporating potential voter preference bias in favor of male candidates by running fewer female candidates in more biased districts, we analyze the relationship between voter preference bias and the share of female candidates running for office in each electoral district.

Voter preference bias in favor of male candidates is approximated by the gender pay gap (as before) and also by the share of people who agree with the statement "Men are better political leaders than women", calculated at the county level using the Generations and Gender Survey (GGS) (see Box 1).

Districts with a strong voter preference bias in favor of male candidates are more likely to have male candidates than female candidates.

Figure 2 presents the statistical relationship between

the likelihood that a woman will be a candidate and the share of people who agree with the statement "Men are better political leaders than women", controlling for candidate characteristics (age, education, occupation), political party, election year, past political experience, and party's score in the previous presidential election. A 10 percentage-point increase in the share of those who say that "Men are better political leaders than women" is associated with a 2.3 percentage-point decrease in the likelihood that a woman will be a candidate in the election.

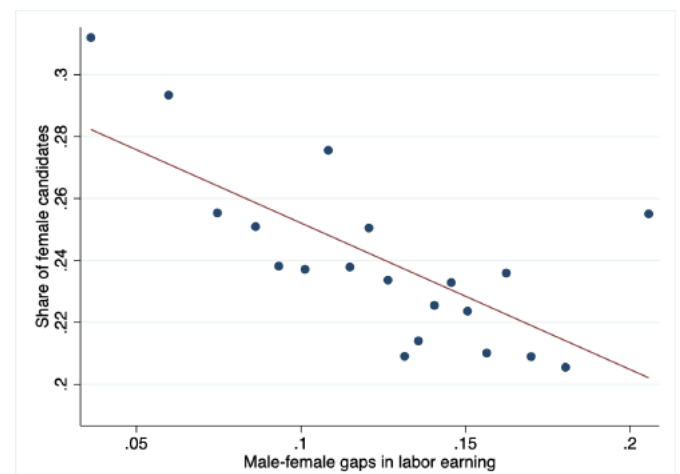


Figure 3: Relationship between the proportion of female candidates at legislative elections and the gender pay gap

**Note:** This figure presents the relationship between share of female candidates and the gender wage gap estimated in the linear regression presented in Part 2 of Box 1.  
**Sources:** Administrative data on candidates from the French Ministry of the Interior, supplemented by other sources (see Box 1) and DADS, Insee.  
**Coverage:** Candidates in legislative elections between 1993 and 2017.  
**Interpretation:** The slope of the line corresponds to the  $\beta$  coefficient of Equation 2. A 10 percentage-point increase in the pay gap leads to a nearly 5 percentage-point decrease in the share of female candidates.

Figure 3 replicates the analysis using the gender pay gap at the district level instead. A 10 percentage-point increase in the gender pay gap is associated with a 5 percentage-point decrease in the likelihood that a female candidate will run for office in that district.

These results suggest that political parties or candidates themselves internalize the voter preference bias in favor of men. The creation of the parity law (see Box 2) requires parties to field 50% women candidates. This reform may have led to changes in party strategies for running candidates in elections.

### Box 1: Data sources and statistical method

We analyze the elections of deputies to the National Assembly in 1988, 1993, 1997, 2002, 2007, 2012 and 2017. The National Assembly is composed of 577 deputies. The voting system is a two-round majority system. Three data sources are mobilized: (i) administrative and online data on candidates and their electoral results; (ii) survey data on attitudes towards men and women; (iii) administrative and census data on earnings and socio-demographic characteristics aggregated by municipality or electoral district.

The Ministry of the Interior publishes the votes obtained by each candidate in the legislative elections since 1988 in the different municipalities of each electoral district (550 districts for 36,000 municipalities), as well as their gender and political party. Their date of birth and socioeconomic category are only available from 2012. We complement the Ministry of the Interior's data on candidates with online and academic sources (Le Barbanchon and Sauvagnat, 2022). The study sample is restricted to candidates with a reasonable chance of being elected, i.e., candidates from the two major coalitions on the right and left that account for 80% of elected deputies.<sup>a</sup>

To directly measure gender bias, we use two indicators. The first is the proportion of people who agree with the statement "Men are better political leaders than women", calculated at the departmental level using the 2006 Generations and Gender Survey (GG5) of the Generations and Gender Program, which surveyed nearly 10,000 households and was coordinated in France by INED (*Institut national d'études démographiques*). The second is the gender pay gap. This is calculated for each French municipality and each electoral district in the year preceding legislative elections using DADS (*Déclarations annuelles de données sociales*) data from INSEE (*Institut national de la statistique et des études économiques*). Each private-sector employer declares the annual salaries paid to each of its employees. These pay gaps are estimated for identical worker characteristics (age, occupation, and sector of activity) and for the employee's municipality of residence. We also use INSEE census data to characterize the localities.

**1. Voter preference bias in favor of male candidates.** To study the relationship between the gender pay gap and the vote gap between female and male candidates, we estimate the following linear regression model:

$$\text{VoteShare}_{i,m,t} = \alpha_{i,t} + \nu_{m,t} + \beta \cdot \text{PayGapMF}_{m,t} \times \text{Female}_i + \gamma \cdot \text{PayGapMF}_{m,t} \times X_{i,t} + \epsilon_{i,m,t} \quad (1)$$

where  $\text{VoteShare}_{i,m,t}$  is the score of candidate  $i$  obtained in the first round of the legislative election  $t$  in municipality  $m$  and  $\text{PayGapMF}_{m,t}$  is the pay gap (in logarithm) between men and women residing in municipality  $m$  measured in the year before the election (adjusted for employee characteristics). We interact the pay gap with a variable indicating female candidates  $\text{Female}_i$ . The coefficient of this interaction  $\beta$  is the one reported in Figure 1. The first coefficient is from an analysis that includes only fixed effects for each candidate per election  $\alpha_{i,t}$  and fixed effects for each municipality per election  $\nu_{m,t}$ . The second coefficient also introduces interaction terms of the wage gap with the socio-demographic characteristics of the candidate  $X_{i,t}$ . The last coefficient also includes the candidate's political experience. For this analysis, only parliamentary districts with candidates of different sexes are selected. The sample is composed of more than 280,000 observations (one observation corresponds to the candidate, municipality, and year triplet).

**2. Incorporation of voter preference bias by political parties.** To investigate the relationship between the preference bias against women and the share of women among candidates, we estimate the following linear regression model:

$$\text{Female}_{i,d,t} = \alpha_{p,t} + \beta \cdot \text{VoterBias}_{d,t} + \gamma \cdot X_{i,t} + \mu \cdot \text{PresidScore}_{p,d,t} + \nu_d + \epsilon_{i,d,t} \quad (2)$$

where  $p$  denotes the political party of candidate  $i$  in election  $t$ .  $\text{Female}_{i,d,t}$  indicates whether candidate  $i$  running in district  $d$  for election  $t$  is a woman.  $\text{VoterBias}_{d,t}$  is either the share of respondents agreeing with "Men are better political leaders than women" in the department of district  $d$ , or the pay gap between women and men in district  $d$  in year  $t - 1$ . We introduce a fixed effect specific to each political party and election,  $\alpha_{p,t}$ . In some specifications, we also introduce the characteristics of the candidate  $X_{i,t}$ , and the score obtained by the candidate's party in the previous presidential election in the same district  $\text{PresidScore}_{p,d,t}$ . In the specification with pay gaps, we also introduce a fixed effect of the district  $\nu_d$ . The coefficient  $\beta$  is represented by the slope of the curve in Figures 2 and 3.

**3. Strategic reactions of political parties to the parity law.** We estimate the following linear regression model:

$$\text{Female}_{i,d,t} = \alpha_{p,t} + \beta_t \cdot \text{CompetitiveDistrict}_{d,t} + \delta_t \cdot \text{PresidScore}_{p,d,t} + \gamma_t \cdot X_{i,t} + \mu_t \cdot \text{PayGapMF}_{d,t} + \epsilon_{i,d,t} \quad (3)$$

where  $p$  denotes the political party of candidate  $i$  in election  $t$ . All other variables are already defined above, except  $\text{CompetitiveDistrict}_{d,t}$  indicating whether district  $d$  is competitive in election  $t$ .

<sup>a</sup>The left-wing coalition includes the *Parti Socialiste* (PS, 84%) and the *Parti Radical de Gauche* (PRG, 12%). The right-wing coalition includes *Rassemblement pour la République* (RPR, 79%) and *Union pour la Démocratie Française* (UDF, 20%) until 1997, then *Union pour la Majorité Présidentielle* (UMP) in 2002, 2007 and 2012, and *Les Républicains* (LR) in 2017. We exclude *République en Marche* and *Mouvement Démocrate* (MoDem) from our analysis. Nevertheless, the results remain unchanged if we add their candidates to the analysis.

### Box 2: The parity law

The law to promote equal access of women and men to electoral offices and positions, known as the parity law, was enacted on June 6, 2000. It encourages political parties to put forward as many women as men in legislative elections. When a party deviates from parity, it is subject to a financial deduction from the first fraction of its public funding for each male candidate above the number of female candidates. The amount of the deduction was increased in 2007 and 2014. For other French elections with a multi-member voting system, the parity law requires parties to present as many women as men, and they cannot deviate.

## Political parties' strategic responses to the parity law

The financial penalties for non-compliance with the parity

law are charged to party budgets, not to individual candidates. This suggests that the incentive not to comply with the law affects the parties directly.

This latitude allowed to parties has led to a slow increase in the share of female candidates, but it is far from achieving parity. In our analysis sample, the share of female candidates was less than 30% in the 2002 elections, and reached only 40% in 2017. In a context marked by electoral bias against women, parties face a trade-off between the cost of losing an election by selecting a female rather than a male candidate, the electoral cost, and the cost of not complying with the parity law. In the case of a close election (competitive districts), the strategy of paying a fine may appear to be more expedient because the electoral cost of running a female candidate is potentially high. In a close election, every vote counts, and voter bias against women can significantly affect a party's chances of winning a seat. Thus, if parties internalize the bias of voters against women, they will refrain from running female candidates in competitive districts.

This trade-off did not exist before the introduction of the parity law, since political parties could choose among local candidates the one most likely to win the election. In the presence of a voter preference bias in favor of men, this led to a low share of female candidates (see previous section), but it was not related to the degree of local electoral competition.

To measure the strategies of political parties, this section examines the evolution of the share of female candidates in districts with strong electoral competition versus those with weaker competition.

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After the parity law, political parties are more likely to run male candidates in legislative elections in districts where the race is close.

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Figure 4 shows the difference in the proportion of female candidates between competitive and non-competitive districts in different legislative elections. Districts are said to be competitive when, in the current election, the winner has a vote advantage of less than 3 percentage points.<sup>2</sup> Prior to 2000, we find no significant difference between districts. In 2002 and 2007, the difference is significantly negative.

These results provide strong evidence for the existence of a strategic bias by political parties, manifested in the selection of male candidates over female candidates in competitive districts after the introduction of the parity law. The fact that the proportion of female candidates is not significantly lower in competitive districts before the introduction of the parity law rules out a possible aver-

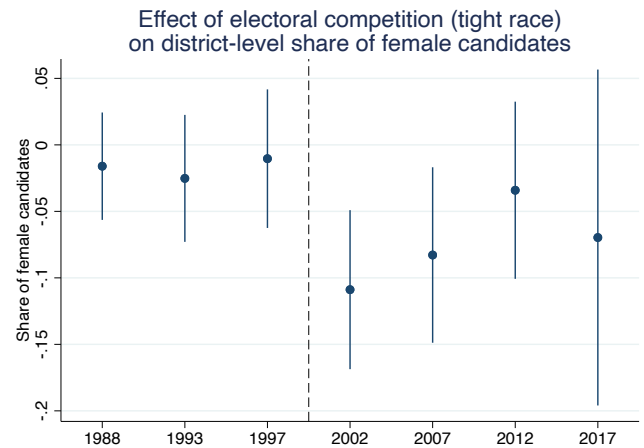


Figure 4: Difference in candidate share between competitive districts by election

Note: This figure presents, for each legislative election, the effect of the degree of competition in the district on the gender of candidates, as estimated in the linear regressions presented in Part 3 of Box 1.

Sources: Administrative data on candidates from the French Ministry of the Interior, supplemented by other sources (see Box 1) and DADS, Insee.

Coverage: Candidates in legislative elections between 1993 and 2017.

Interpretation: The dotted vertical line indicates the introduction of the parity law. In the 2002 elections, competitive districts have a proportion of female candidates that is 10 percentage points lower than in non-competitive districts.

sion on the part of female candidates to campaigning in a highly competitive environment.

The lower proportion of women chosen to run for office in competitive districts could be explained by differences in female candidates' abilities to wield political office. However, the educational gap between current male and female municipal politicians, the vast majority of whom will be future candidates for legislative elections, is weakly correlated with the degree of competition in the district.

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This emphasis on male candidates for legislative elections in competitive districts is not explained by local differences in skills between women and men.

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Using a theoretical model calibrated on the results observed before and after the parity law, the simulation of the degree of electoral competition between the two main political parties makes it possible to estimate that a 10% increase in the share of competitive districts would reduce the increase in the proportion of women elected due to the parity law by 25%. This exercise illustrates how the effectiveness of flexible quotas in increasing women's representation in parliament is undermined by electoral competition.

<sup>2</sup>Another measure is used to define the degree of competition in the legislative election. This is the predicted results from the vote shares for parties on the right and left in the presidential election. The results are identical to those in Figure 4 with this measure.

## Conclusion

The analyses in this policy brief confirm the existence of a voter preference bias in favor of men and a strategic bias of political parties in response to this voter bias. Other mechanisms may explain the under-representation of women in politics, such as differences in women's and men's willingness to engage in political careers or the presence of intrinsic negative bias against women within political parties.

That said, the evidence provided in this policy brief has important implications for the design of public policies to increase women's representation in parliament. First, they highlight the relative ineffectiveness of flexible gender quotas in politics compared to strict quotas. Second, they call for the design of quota policies that take into account the competitive intensity of our electoral system.

## Authors

**Thomas Le Barbanchon** is an Associate Professor of Economics at Bocconi University.

**Julien Sauvagnat** is an Associate Professor of Finance at Bocconi University.

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