Are Women Pawns in the Political Game? Evidence from Elections to the Spanish Senate[*]

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Abstract

This paper investigates the reasons behind the low representation of women among legislators. Using data from Spain, we find that parties tend to nominate female candidates to poorer positions on the ballot. We examine whether this is due to voter bias or party bias, and find two pieces of evidence supporting the latter: female candidates attract more votes, and political competition improves the quality of positions to which female candidates are assigned. Moreover, gender quotas fail to erode the strategic nomination of female candidates. The evidence in this paper helps explain why quotas in candidate lists might often lead to disappointing increases in the number of elected female politicians.

Keywords: strategic nomination, gender quotas, voting
JEL Classification: J16, J71.

1 Introduction

Given the low participation of women in legislatures worldwide, it is not surprising that political parties and governments in many countries have introduced gender quotas in candidate lists (European Commission 2009). However, this has not resulted in equal numbers of female and male legislators. In 2008, there were only two democracies with at least 40% of female parliamentarians.[1] According to UNICEF (2007), in 2007, a woman headed the government in only seven countries. With recent empirical evidence which shows that the gender of legislators matters for policy choices, economists need to pay attention to the sources of this inequality.[2]

The lack of female legislators might be supply driven: perhaps women shy away from politics. For instance, in Spain in 2004, the percentage of female affiliates in the Socialist Party was 30.9%, and 33.6% in the People's Party (Verge 2006).[3] There also is a potential demand-side explanation. It has been argued that the lack of female legislators may reflect voters' preferences for male politicians (Frechette, Maniquet and Morelli 2008). Other authors suggest instead that the low female representation may not necessarily be due to lower popularity among voters, but rather to a political failure (Persico 2009). According to this view, political parties constitute filters between voters' preferences and the politicians who actually get elected. To the extent that candidates are not selected through an open process, but rather are chosen by political party leaders, such filters may be biased. Party leaders may be biased towards incumbents, who tend to be male, or, in an example of 'old boys' networks', they may have a general preference for same-gender (male) candidates. As a result, parties may be nominating few female candidates relative to voters' preferences, or they may be nominating female candidates to constituencies or ballot positions with no chances of success. Party leaders might also prefer weak female colleagues in order to avoid potential internal competition, or they may be nominating female candidates regardless of their quality, just to highlight their 'good' gender statistics. Additionally, female candidates might not be chosen based on their quality as politicians. Any of these factors would lead to fewer women legislators.

Spain is currently one of the most advanced countries in terms of gender equality policy. In 1988, the Socialist Party introduced internal gender quotas at 25% of nomination. The quota was increased to 40% in 1997.[4] In the same vein, parties have adopted guidelines to nominate more female candidates as heads of candidate lists.[5] In addition to voluntary party gender quotas, legislative quotas were

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[1]These countries were Sweden and Finland. Source: "Women in Parliaments: World Classification", Inter-Parliamentary Union (http://www.ipu.org/wmn-e/classif.htm, retrieved January 26, 2009), compiling information provided by National Parliaments by November 30, 2008.

[2]Chattopadhyay and Duflo (2004), using data from India's political reservation, and Rehavi (2007), using data from U.S. state legislators, both find that women legislators make different choices regarding public spending.

[3]Likewise, if parties do not nominate female candidates to relevant roles, women who may be willing to run for election may not be the best available.

[4]Norway led the way to voluntary party quotas: in 1975, both the Socialist Left and the Liberal Party adopted gender quotas; in 1983 the Labor Party, Norway's biggest party, adopted quotas for half of their candidates to be women. This was seen as a legitimate way to ensure that women would receive adequate representation (Matland 2005).

[5]For instance, in the 2004 election the secretary of the Socialist Party in Castilla y León acknowledged that "the majority of the lists for the House and the Senate prepared by local party committees did not satisfy the recommendation of the party's central committee according to which they should place female candidates at the top of the ballot" ("Villalba reconoce que hay pocas mujeres encabezando las listas", *Diario de León*, January 10, 2004.

Parties receive positive or negative media treatment according to how many women are placed at the top of the list. See, for instance, "Las paradojas de la paridad electoral en Canarias", *El Día*, February 21, 2008.

introduced in Spain via the Equality Law in 2007, mandating at least a third of each gender in every Senate list, as well as at least 40% of women in every House list. In aggregate, the Equality Law has led to an increase in the share of female Senate candidates from 30% in 2004, up to 38% in 2008. In the case of the House, the share of female candidates has increased since the Law was passed (from 41% in 2004 to 46% in 2008). Nevertheless, the percentage of women in the Senate and the House of Representatives remains relatively low, at 28.2% and 36.3% respectively (Figures 1a and 1b).

In this paper, we analyze why the increase of women in candidate lists has had only a limited effect on the number of female legislators. We study voting behavior and party nomination strategies using data on legislative elections held in Spain in 1996, 2000, 2004 and 2008. Political parties can affect the number of female candidates who get elected in two ways. First, in the absence of gender quotas, parties decide how many women they nominate in each province. Second, parties can affect candidates' chances of being elected through their order in the ballot. In House elections, voters can only choose which party to vote for, and the ballot order determines who gets elected. In Senate elections, voters may vote directly for their preferred candidate. However, candidates are listed alphabetically on the ballot and it is well known that voters tend to choose candidates placed at the top of the list. Thus, parties can affect the distribution of votes among candidates in their party list by nominating candidates based on their surname. We find that, in both chambers, parties nominate female candidates to positions where, based on previous electoral results, the likelihood of being elected is relatively lower. In House elections, female candidates are assigned to positions where the probability of getting elected is 14 percentage points lower. The corresponding figure for the Senate is 19 percentage points. About one half of these differences cannot be accounted for by male candidates' greater political experience. Furthermore, this gender gap has not decreased with the introduction of gender quotas. This is in stark contrast with parties' explicit guidelines regarding nominating more women at the top of lists.

The party behavior that we observe could either be due to party or voter bias against female candidates. Specifically, political parties might be strategically nominating female candidates because of party preferences, or they could be reacting to a potential voter preference for male candidates. In order to disentangle these two theories, we take advantage of the particular features of Senate elections, where there is individual voting and the degree of competition in a race can easily be measured.

First, we compare the votes received by gender. The gender bias in nominations that we observe cannot be justified by a potentially lower ability of female candidates to attract votes: we find that, conditional on position in the ballot and political experience, female candidates tend to attract more votes than male candidates. Second, we study the effect of political competition. Not selecting the best candidates might be more costly in races that are expected to be close, in which case the quality of candidates may be more salient. We find that the absence of political competition worsens the quality of the positions to which female candidates are assigned, thereby reducing their chances of getting elected. In sum, the evidence is not consistent with the existence of voter bias against female candidates.

To further understand the nomination strategies of political parties, we exploit the fact that in Senate elections, candidates are listed alphabetically on the ballot. First we show that in Spain, surname

order is unrelated to quality. Therefore, if male and female candidates were not selected based on their surname, we would expect to find, alphabetically, that male and female candidates are evenly distributed across ballot positions. We find that in races where there is no uncertainty about the outcome of the election, parties strategically nominate female candidates (but not male candidates) according to their surname. The strategic nomination of female candidates is done in two ways. In races where the party does not expect all of their candidates to be elected, we find that women tend to be drawn from later in the alphabet; thus female candidates are less likely to be elected. In races where the party expects all of their candidates to be elected, and therefore ballot order is irrelevant, women tend to be drawn from earlier in the alphabet. Despite surname order not playing any role in House elections, we find the opposite pattern as the one in the Senate, suggesting that parties nominate female candidates to the Senate or to the House based on how their surname fits parties' strategies.

In the absence of political competition, parties seem to be using women as pawns—in that they are nominated according to how their presence in the list affects male candidates and party gender statistics. These nomination patterns explain why the commitment of parties to increase the number of women among candidates has had a limited effect on female representation. Political parties seem to value gender equality, but they do so only inasmuch as it does not cost a male candidate his seat. These gender patterns are robust over time, and do not substantially differ according to candidates' political experience or parties' ideology.

The evidence reveals that without adequate incentives, gender quotas may not necessarily lead to more female legislators. As this paper shows, quotas fail to erode the strategic nomination of female candidates. The lack of success of gender quotas in Spain is consistent with Frechette et al. (2008), which argues that gender quotas are more likely to be passed whenever incumbents perceive that the quotas will not affect their chances of re-election.

For gender quotas to be effective, the design of the ballot should be such that parties cannot use the order effect to favor particular candidates. We propose to replace the current alphabetical ballot order with ballot order rotation: multiple versions (three in this case) of a ballot are printed, such that each candidate tops the ballot as often as the others, and thus positional misvoting is neutralized.[6] Given our results, and because incentives for strategic nomination would be eroded in such a framework, rotating the order of candidates on the party list would deliver more and better female legislators.

The paper is organized as follows. Section 2 describes the related literature. Section 3 offers background information on Senate and House elections in Spain, and Section 4 describes the data. Section 5 outlines our research design and methodology, and Section 6 turns to the empirical analysis. Finally, Section 7 concludes.

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[6]State Supreme Courts in the U.S. have ruled listing candidates alphabetically in a ballot unconstitutional on the grounds that candidates higher on the ballot are known to enjoy a vote advantage. American states now use either randomization only or randomization and rotation of candidates' names on ballots (Alvarez et al. 2006).

2 Related literature

There is a large literature analyzing the low incidence of women among legislators. Some authors have argued that female legislators attract fewer votes.[7] Frechette et al.(2008) finds that, in France, male candidates have a higher probability of being elected when running against a female candidate than when running against a male of similar characteristics. De Paola, Scoppa and Lombardo (2010) finds evidence for Italy that female candidates attract fewer votes. Kelley and McAllister (1984) finds that voters in Australia and Britain are less likely to vote for female candidates. In contrast, Darcy and Schramm (1977) looks at several U.S. House of Representatives elections from the 1970s and find that gender has little or no effect on election outcomes.

Political parties might also influence how many women get elected through their nomination decisions. A number of papers investigate strategic nomination by constituency. Frechette et al. (2008) finds that in the 2002 French National Assembly election, female candidates were slightly more likely (albeit not statistically significantly so) to be sent to 'worse' districts. In Frechette et al. (2006), they also consider other potential strategic behaviors by political parties, looking at which parties take male bias in the voter population into account. Such strategic behavior would imply that women would be nominated for sure losers and sure winners, while men would be reserved for tight races. Their results go in that direction, but are not statistically significant at standard levels. Parties can also influence the outcome of elections in systems where parties decide the ordering of candidates within the ballot, and voters only choose which party receives their vote. As highlighted by a recent report by the European Commission (2009), in these cases female candidates are usually positioned in poorer list positions than their male colleagues.[8]

A common policy option to increase female representation has been to introduce mandatory gender quotas. Beaman et al. (2009) evaluates the impact of India's mandated political representation of women in village councils on citizens' attitude toward women leaders. They find that voters are biased against female candidates, but this bias diminishes once voters get to know the candidates. The same study also finds that, relative to councils that never had a reserved chief village councillor, almost twice as many women stood for, and won, these positions in councils where the chief village councillor position had been reserved for a woman in the previous two elections. De Paola et al. (2010) shows that in Italian districts that were exposed to female politicians due to quotas, voters are more likely to vote for a female politician in the future.

Our study can also be connected to other strands of papers. There is a wide literature that studies how different ballot designs lead to systematic deviations in candidate vote shares. One source of bias is position misvoting—where candidates receive more votes because they are listed in a particular place on the ballot.[9] Positional (mis)voting may be particularly relevant in a framework of personal

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[7]It is usually difficult to measure candidate quality. Recent studies analyzing the selection of candidates are Ferraz and Finan (2009), Gagliarducci and Nannicini (2011) and Galasso and Nannicini (2011). A measure of politician quality common to these papers is education.

[8]There is a related literature in political science on the low representation by women in Parliaments, which highlights the responsibilities of parties; in particular of their organizational and ideological barriers. For instance, Caul (1999) examines data from 68 parties in twelve developed countries between 1975 and 1989, and finds that parties with a higher degree of institutionalization and localized nomination, are more likely to nominate women candidates.

[9]Shue and Luttmer (2009) additionally considers another type of misvoting—adjacency misvoting—which occurs

voting where candidates are listed on the ballot alphabetically. This electoral system has been used in Australia, Britain, Ireland, Spain, and the U.S. among others. Kelley and McAllister (1984) finds evidence of alphabetical voting in Australian elections, while similar results are found for the Irish lower chamber (Robson and Walsh 1974), and for the Spanish Senate (Lijphart and Lopez 1988, Montabes and Ortega 2002).[10]

A number of political scientists have analyzed strategic nomination for Senate elections in Spain. Montabes and Ortega (2002) argues that political parties in Spain select candidates with surnames that place them on the list below the incumbent senator. Moreover et al. (2004) shows that in the 2000 general election female candidates were placed lower on the ballot, which made it more difficult for them to be elected. In contrast to the previous literature, we consider how strategic nomination differs according to candidates' chances in the constituency.

3 Background

Spain is a parliamentary representative democratic constitutional monarchy, as established by the Constitution passed in 1978. The Monarch is the Head of State and the President of the Government is the head of government in a multi-party system. Central legislative power is vested in the Congress (*Cortes Generales*), which consists of two chambers, the House of Representatives (*Congreso de los Diputados*) and the Senate (*Senado*). The House and Senate serve concurrent terms that run for a maximum of four years. House and Senate elections are held simultaneously.

In Spain, a provincial party committee proposes a slate of candidates for nomination to Senate and House lists. Formally, this list must then be approved by the regional and national central committees.

3.1 Senate

The Spanish Senate currently comprises 264 senators, 208 are directly elected in general elections, and 56 are appointed by the 17 Spanish regions.

In general, provinces elect four senators each. Each voter has three votes, and votes for candidates by name (the only instance of personal voting in Spanish elections). Political parties may nominate as many candidates as there are positions available, but in practice (with a few exceptions)[11] each party nominates three candidates. Usually, the three candidates receiving the most votes each come from one party, with the fourth the most-voted for candidate coming from the opposing party.[12] On

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whenever candidates receive more votes due to being adjacent to a popular candidate.

[10]Order effects have also been documented in other areas: Einat and Yariv (2006) shows that economists whose surname order is relatively early in the alphabet enjoy greater academic success.

[11]In the 1977 election, *Unión de Centro Democrático* nominated more than three candidates in the provinces of Castellón, Granada and Salamanca. In the 2000 election, in 24 out of 47 provinces the Socialist Party and United Left agreed that the former would nominate two candidates and the latter would nominate one candidate.

[12]It is very unusual that two parties get two candidates elected each. During the last four elections, this has only happened in three cases.

the ballot for Senate elections, candidates are grouped by political party, and political parties are randomly ordered. Within each party list, in turn, candidates are listed in alphabetical order.

It is well-known in policy circles (and has been documented by political scientists) that the first candidate in the ballot tends to be the most voted.[13] Consider the example of Ramón Rubial, a historic president of the Socialist Party, running for the province of Vizcaya, traditionally a right-wing stronghold. Ramón Rubial was an incumbent senator when in 1984 the voting system was modified: party lists on the ballot were randomized, but candidates for each party were listed alphabetically. In the first election with the new system in 1986, parties did not seem to have paid attention to strategic nomination based on surname. Rubial, listed second for the Socialist Party, lost his seat to newcomer Manuel Fernández, listed alphabetically above him on the ballot. To have maximized Rubial's chances of becoming senator, the party should have chosen two other candidates with surnames after his. This is consistent with the evidence: in subsequent elections, any candidate in the Socialist list running with Rubial had an initial no earlier in the alphabet than "S". The list for the 1989 election reads: 1) Ramón Rubial, 2) Dimas Sañudo, 3) Ángel Templano; the list for the 1993 election is: 1) Ramón Rubial, 2) Tomás Tueros, 3) Víctor Manuel Urrutia; for 1996: 1) Ramón Rubial, 2) Edurne Uriarte, 3) Ricardo Villanueva. Other well-known examples are those of Alberto Ruiz-Gallardón, a People's Party leader, who ran for the 1993 Senate election next to Roberto Soravilla and Rosa Vindel in Madrid, and perhaps more ostensibly, Galician left-wing leader Francisco Vázquez, who ran for A Coruña in 2004, together with Maria Vila and Jorge Yáñez.

3.2 House of Representatives

The House is formed by 350 members, elected from each province for a maximum four-year term following proportional representation. Seats are allocated as follows: the provinces of Ceuta and Melilla are given one seat each, and two seats are given to each of the other 50 provinces; the remaining 248 seats are then allocated proportionally according to population.

As opposed to the Senate, where voters can vote directly for the candidates of their choice, in House elections voters can only choose which party to vote for. In each constituency, each party proposes a list with as many candidates as seats are available. The party decides the order of their candidates in the ballot. Then the number of votes received by every party decides how many seats the party gets; seats are allocated to candidates by order on the ballot.

3.3 Gender quotas in the Spanish Congress

In 1988, the Socialist Party introduced internal gender quotas at 25% of nomination, and then raised them to 40% in 1997 for House lists. After taking power in 2004, the Socialist Party initiated legislation to make quotas in candidate lists mandatory for every political party. In 2007 the Equality Law was finally passed, imposing quotas.

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[13]Personal conversation with former senator Nely Fernández. For political science literature on this issue, see Lijphart and Lopez (1988) or Montabes and Ortega (2002).

In the case of the Senate, the quota establishes that at least one of the three candidates in each list must be of each gender. In the case of the House of Representatives, the quota requires that at least 40% of the candidates in each list must be of each gender. The quota also imposes restrictions on the order of candidates in House lists; for each interval of five candidates in the list, at least two out of the five must be of each gender. Presumably this requirement was introduced to prevent parties from listing all female candidates at the bottom of the list.

4   Research design and methodology

Our research question deals with the lack of women legislators. Because political candidates are typically selected by political parties, internal and legal quotas for candidate lists are the most common policies to increase female representation, by increasing the share of female candidates in party lists. Some parties have also had a policy of nominating more women to lead slates of candidates. Nevertheless, these policies have not translated into proportionally greater numbers of female legislators.

It has been argued that this reflects the fact that women are nominated to positions where the probability of getting elected is lower (European Commission 2009). In order to analyze parties' nomination strategies, we first construct a measure of how good a position is based on previous electoral results:

$$Win_{ispt} = f(Position_{ispt}, Support_{spt-1}) \tag{1}$$

where Win_{ispt} is a dummy variable that indicates whether candidate i running in province s for party p in election t was elected, $Position_{ispt}$ denotes the position in the ballot or list that candidate i is running for in province s for party p in election t, and $Support_{spt-1}$ is a proxy of the party support in the same province at the moment of the nomination.

Then we use this information to analyze the relationship between candidates' characteristics and the quality of the position to which they have been assigned:

$$\hat{Win}_{ispt} = \alpha_{st} + \beta_{pt} + \gamma Female_i + X_i'\lambda + u_{ispt} \tag{2}$$

where α_{st} is a province and (election) year fixed-effect, β_{pt} is a party and year fixed-effect, $Female_i$ equals one if candidate i is a woman and zero otherwise, and X_i denotes individual observable characteristics of candidate i, including political experience. The left-hand-side variable is the predicted value from equation (1), and it measures the likelihood that a candidate that is placed in a given position in the party list is elected ($\hat{Win}_{ispt}=E[Win_{ispt}|Position_{ispt}, Support_{spt-1}]$). Coefficient γ denotes the quality of positions to which female candidates are allocated (relative to male candidates).

As candidate quality is hard to observe, the typical study in the literature cannot ascertain whether women are nominated to poorer positions because (i) parties are biased against female candidates, or

(ii) voters prefer male candidates; leading parties to place female candidates in poorer list positions. In order to disentangle these two possibilities, we exploit the particular framework of the Spanish Senate elections using two strategies.

First, we exploit the fact that voting in Senate elections is individual, by examining whether female candidates are less popular among voters, holding everything else constant. We run the following regression:

$$Votes_{ispt} = \alpha_{spt} + \beta Female_i + X_i'\theta + \gamma \hat{Win}_{ispt} + v_{il} \tag{3}$$

where $Votes_{ispt}$ is the share of votes of candidate i running for party p in province s in year t, α_{spt} is a list fixed-effect, X_i measure candidates' experience, and $\hat{Win}_{ispt}$ measures how "good" is the position where the candidate is placed on the list.

Second, if the strategic nomination of female candidates is driven by party bias, we would expect this to be more salient in constituencies where political competition is low: the cost of not selecting the best available candidates would be greater if the race is expected to be close. Next we explore whether parties' nominations strategies vary depending on the degree of competition. We focus on the case of the Senate, where the degree of political competition can be easily measured, because of the plurality rule (in contrast to House elections, where the system is proportional). For this reason, we check how the quality of the position depends on the degree of political competition:

$$\hat{Win}_{ispt} = \alpha_{st} + \beta_{pt} + \gamma Female_i + \lambda Lack\ of\ competitiveness_{st} + \phi Female_i * Lack\ of\ competitiveness_{st} + u_i \tag{4}$$

where $Lack\ of\ competitiveness$ of the race is calculated as the absolute difference between candidates' expected probability of winning (based on previous electoral results) and 0.50, averaged across all candidates in the same race.

Finally, we explore the consequences of manipulating ballot order in the context of an electoral system with alphabetical order of candidates (such as the Spanish Senate). Because voters tend to choose candidates placed at the top of the list (we will elaborate on this in the empirical analysis), having a surname late in the alphabet might be a drawback. Similarly, a candidate whose surname initial is early in the alphabet is relatively more likely to head the party list, which might give them an advantage over the other candidates in the same party list. Thus, by choosing a certain group of candidates based on their surname, parties can affect those candidates' chances of being elected.

Below we examine whether any potential gender patterns in the quality of positions to which candidates are assigned is due to parties strategically nominating female and/or male candidates based on surname.

$$Surname\ order_i = \alpha_{st} + \beta_{pt} + \gamma Female_i + \lambda \hat{W}in_{spt} + \phi Female_i * \hat{W}in_{spt} + X_i'\theta + u_i \qquad (5)$$

where $Surname\ order_i$ is a measure of the alphabetical order of candidate i's surname. Coefficients λ and ϕ show whether male and female candidates' surname order varies depending on the quality of the ballot position. Note that our identification strategy relies on the fact that potential candidates' surname order is not directly related to quality (an issue that we will get back to in the empirical analysis), yet it affects candidates' electoral chances. This allows us to identify whether a certain group of candidates (here, men or women) has been selected on the basis of surname, not quality.

5 Data

We use information on candidates in Spanish legislative elections held since 1996. Our database includes data from all of the peninsular provinces where political competition is between the two main parties (45 of 47 provinces, see the Data appendix for details).[14] Therefore our database includes a total of 360 party lists to Senate and House elections. We have gathered information on candidates' gender, political experience, and electoral performance. For robustness checks, we have collected information on the senators appointed by the regions, as well as on all of the candidates to Spanish local elections in 2008.

In Table 1 we display information on several individual characteristics of candidates to the Senate (upper panel) and candidates to the House (lower panel). In both cases, male candidates tend to have relatively more relevant political experience: they are more likely to be former senators or former House representatives. Male candidates are also more likely to be placed at the top of the ballot and, in Senate elections, they tend to obtain a slightly larger number of votes.

We have also gathered information on candidates' surnames. The Spanish use two surnames: the first is inherited from the father's paternal lineage, and the second from the mother's paternal lineage. We use the distribution of surnames in the Spanish population by province to create a measure that orders individuals alphabetically, and we call it *surname order* (for details on the calculations, see the Data appendix).

In Table 2 we report statistics for the surname order of the individuals analyzed in this paper. As can be seen in the table, female Senate candidates' paternal surnames tend to be closer to the end of the alphabet than male candidates' surnames. We do not observe any significant gender difference in Senate candidates' maternal surname order. The same is true for any of the other groups of politicians we consider: elected senators, appointed senators, House candidates, elected House members, candidates to local elections, or mayors.

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[14] The results in this paper are robust to using all 47 provinces.

6 Empirical analysis

In this section, we implement the research design that we presented in Section 4. That is, first, we analyze how parties nominate candidates by gender; taking into account, for every position, their probability of getting elected. Second, we explore the source of gender differences in nominations using two pieces of information. First, we use voting information from Senate elections. Second, we explore how parties' nomination behavior is affected by political competition. Finally, we exploit surname information to understand how these gender patterns arise.

6.1 Nomination

The increase of women in candidate lists has had only a limited effect on the number of female senators (Figure 1). Next we consider whether parties' nomination strategies for both legislative chambers might explain this puzzle.

6.1.1 Senate

As explained in detail in Section 3, each political party nominates three candidates to the Senate in each province, and four senators are elected per province. Typically, three of the four elected senators are from one of the two parties. Voters can choose which candidate they vote for, but it is well known that there is an order effect: candidates at the top of the party list tend to obtain more votes. For instance, in the last four Senate elections, heading the list translated into receiving the most votes in a staggering 97% of cases.

Following equation (1), we estimate the probability that a seat will be obtained according to candidates' order in the ballot and the support for the party in the province. We proxy for party support by using previous electoral results. In order to minimize endogeneity issues, we use electoral results in House elections instead of Senate elections.[15] In the period we consider, only 10% of Senate candidates had run for election in the previous House election. Thus, using previous House results helps to minimize the probability that party support is correlated with Senate candidates' unobserved quality. We report results in Table 3. As expected, a larger vote advantage in the previous election is associated with higher chances of getting elected (Table 3, column (1)). Ballot order also matters for election: candidates placed second (third) on the ballot have 59 (60) percentage points lower probability of getting elected than the candidate placed at the top. In our specification we also allow for a cubic polynomial in vote advantage in the previous election, fully interacted with a complete set of position dummies (Table 3, column (2)).

Then, using this information on the estimated "quality" of each position, we analyze whether there are any gender differences in parties' nominations. As shown in Figure 2a, the quality of the positions where women are running is worse than the quality of the positions where men are running.

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[15]Results are practically identical if we use previous Senate electoral results instead.

As shown in column (1) in Table 4, corresponding to equation (2), the difference in the average quality of the positions of women and men is of approximately 19 percentage points. However, the fact that women tend to be nominated to worse positions might be related to differences in political experience by gender. For this reason, in column (2) we control for candidates' political experience. We find that, controlling for political experience, women are nominated to positions on the ballot where the probability of getting elected is 11 percentage points lower (significant at the one percent level). We also find that more experienced candidates tend to be nominated to better ballot positions.

Next we investigate whether the introduction of quotas has affected nomination patterns by gender. In column (3) we interact our female dummy with a variable that controls for elections in which a gender quota has been in place at the party list level. By gender quota we mean either the mandatory quota imposed by law in 2007 (therefore in place during the 2008 election) or internal party quotas. Because internal quotas were already used by the Socialist Party before 2008 (since 1988), the estimated cofficient of the variable quota is identified through the variation in nomination strategies by the People's Party (relative to the Socialist Party). We find that since gender quotas have been introduced, the quality of the positions where female candidates are placed has deteriorated, but the effect is not statistically significant.

6.1.2 House of Representatives

Party lists in elections to the Spanish House of Representatives are closed: voters can only choose which party to vote for. In addition, every party chooses freely how to position their candidates on the ballot, and seats are assigned using the d'Hondt method. The electoral chances of candidates depend on the votes received by the party in the constituency to which they are nominated, and their position on the list. Therefore, the order on the list is, by design, key to getting elected. As we did for Senate lists, we estimate the probability that a seat will be obtained given the performance of the party in that constituency in the past (equation (1)). In particular, for each position in the ballot we calculate what percentage of votes would be needed to change the outcome of the previous election.[16] In order to mitigate endogeneity concerns, we proxy for parties' support using previous electoral results in the Senate. Given that only 3% of House candidates participated in the previous Senate election, electoral results in this race are not likely to directly reflect the quality of House candidates. As expected, a larger share of votes increases the chances of getting elected (Table 3, column (3)). Results do not change if we include a cubic polynomial in vote share in the specification (column (4)).

In Figure 2b we examine the average quality of positions in the House of Representatives by gender. Again, we observe that female candidates are assigned to positions where it is less likely to get elected. As shown in column (1) in Table 5, in this case the difference is of about 14 percentage points.

Once we control for the political experience of candidates, we find that female candidates are 4 percentage points significantly less likely to be nominated to good positions on the ballot (column

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[16] For instance, let us consider the case of the People's Party list in Madrid in the 2008 House election. The candidate at the top of the list will be elected unless her party were to obtain 42 percentage points fewer votes than it obtained in the previous (Senate) election. However, the candidate in position 17 on that list would lose her seat if the party were to obtain one percentage point fewer votes.

(2)).

The introduction of gender quotas has had a small negative impact on the quality of the positions where female House candidates are allocated, even though the effect is not significantly different from zero (column (3)).

6.2 Why are female candidates nominated to worse positions on the list?

Our results suggest that women in both House and Senate lists have lower electoral chances because they are nominated to poorer positions. We have also seen that this gender gap does not disappear if we compare candidates with similar political experience. Moreover, the introduction of gender quotas has not changed the situation. Why are political parties nominating female candidates in this fashion?

This could be due to either **party bias**, or **voter bias** against female candidates. Political parties might be strategically nominating female candidates because of party preferences, or they could be reacting to a potential voter preference for male candidates. We test between these two hypotheses with two testable implications. First, we compare the votes received by gender. Second, we compare races with higher and lower levels of political competition.

6.2.1 Votes

In this section we turn to voting data in order to test whether female candidates are less popular among voters. We estimate regression (3) using the share of votes for candidates as the dependent variable, controlling for the quality of the position of candidates and list fixed-effects. A list is defined over a given year, for a given province, and for a given political party (e.g., Madrid Socialist Party 1996). List fixed-effects capture any omitted variables that might be affecting the votes received by all individuals running in a given list.

We present the results in Table 6. Male and female candidates in the same party list obtain a similar number of votes (column (1)). Once we control for the quality of each candidate's position, however, the empirical evidence suggests that women attract 0.20 percentage points more votes (column (2)). Going from the worst possible position (quality equal to zero) to the best possible position (quality equal to one) increases votes by 2.2 percentage points. This is in line with previous literature. For example, Miller and Krosnick (1998), using data from the 1992 U.S. general election in Ohio find that candidates listed first obtain on average 2.5 percentage points more votes; Koppell and Steen (2004) find an effect of 1.6-2.3 percentage points using data from the 1998 Democratic primary election in New York City. In those elections, the order effect was generally not large enough to decide the outcome. In contrast, the design of the Spanish Senate elections makes the order effect decisive in almost every case. Even though the vote premium associated with female candidates is statistically significant, its magnitude is relatively small compared to the effect of the order advantage, and it rarely manages to overcome it.[17]

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[17]In the 2008 election, only in one case did the candidate at the top of the ballot receive fewer votes than the second

Due to the late involvement of Spanish women in politics, there is a wide disparity in the political experience of male and female candidates. In column (3) we present results from adding prior political experience. Candidates with relevant political experience tend to obtain a greater share of votes. Controlling for the quality of the position and political experience, female candidates obtain 0.27 percentage points more votes (significant at the five percent level).

If there are no systematic gender differences in the (unobservable) characteristics of candidates, then this coefficient reflects the causal effect of candidates' gender on voting (in other words, this means that voters prefer female candidates *per se*). Alternatively, this result could reflect the existence of gender differences in quality: it is possible that female candidates are better than male candidates in some unobserved dimension. All in all, the fact that female candidates are nominated to worse positions in Spanish legislative elections cannot be explained by male candidates' greater popularity among voters.

6.2.2   Political competition

Not selecting the best available candidates will be more costly for parties whenever the race is expected to be close. In columns (4) and (5) in Table 4 we report results from running regression (4), testing whether female candidates are assigned to better positions depending on the degree of competitiveness of a race.

The variable *Lack of competitiveness* of the race is calculated as the absolute difference between candidates' expected probability of winning (based on previous electoral results) and 0.50, averaged across all candidates in the same race. This variable ranges between 0.17 and 0.50, reflecting the fact that at least one candidate in each list will be elected with certainty, and that in some races it is possible to predict with almost certainty which three candidates will be elected.

We find that in the most competitive races (0.17), female and male candidates tend to be assigned to positions of similar quality. However, in the least competitive races (0.50), female candidates are nominated to significantly worse positions on the ballot. For candidates with similar political experience, increasing the degree of competition from 0.17 to 0.50 improves the quality of the positions to which women are nominated by 17 percentage points (column (4)). This result is robust to the inclusion of province and year fixed-effects, suggesting that this correlation is not driven by some unobserved factor that makes certain races more prone to political competition and more female friendly at the same time. This pattern has not been affected by gender quotas (column (5)).

6.3   Surname order

We have shown that there are gender patterns in the way that candidates are placed on ballots, and that these depend on the party's chance to win the election. In this section, we exploit the particular

candidate. In Salamanca, the (female) candidate listed second, Josefa Mena, obtained more votes than the head of the list, Emilio Melero, the (male) local Socialist Party leader.

setup of Senate elections, where ballot order is alphabetical, to investigate how these patterns arise. Given that order in the Senate ballot is alphabetical, if parties want to strategically place candidates on the ballot, they must be doing so by selecting them according to their surname. As a result, the distribution of candidates' surname order will not be a random sample of the distribution of the population of potential candidates. While we do not have direct information on the surnames of potential candidates, if surname order is not correlated with true quality, it should be similar to the distribution of surname order for the overall Spanish population.

Next we compare the surname order distribution of male and female candidates with the populational distribution of surnames. Figure 3a shows how the average surname order of female and male Senate candidates varies according to the quality of positions in the list. Since, by construction, our measure of surname order in the population has a mean equal to 0.50, any systematic deviation from 0.50 in the distribution of male and female candidates' surnames is consistent with surname based nomination. In general, the evidence rejects the hypothesis that the distribution of female candidates' surnames is the same as that of the Spanish population. In fact, their surnames differ according to the average quality of the positions in the list they are running for: when the party faces low chances of election based on previous electoral results, the women in the list are significantly drawn from the end of the alphabet. However, when the average quality of the positions on the list is close to one, women's surnames tend to be significantly drawn from the beginning of the alphabet. Note that when all of the candidates in the list are expected to get elected, order on the list is irrelevant. In contrast, the distribution of male candidates' surnames does not differ significantly from the distribution of surnames in the Spanish population, regardless of the average quality of the positions on the list.[18] The bottom line from Figure 3a is that female candidates are selected on grounds of surname, but male candidates are not.

We run regression (5) to investigate whether this pattern reflects gender-based selection, or if it is due to female candidates being different in some respect—for instance, female politicians being less experienced. We regress the surname order of candidates on a female dummy and its interaction with the average quality of the positions on the list they are running for (that is, the same information conveyed in Figure 3). We find a strong significant relationship between candidates' surname order and the average quality of the positions on the list (Table 7, column (1)). In column (2), we control for the political experience of candidates; results remain the same.

The evidence above suggests that parties strategically select women by exploiting the existence of an order effect in Senate elections. An unintended consequence of parties' nomination strategies is that the set of female Senate candidates ends up being selected based on their surname. Therefore, provided that surname order is unrelated to quality, the female candidates nominated by parties are probably not the best available.

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[18]We have also performed the calculations using the national distribution of surnames instead of the distribution by province. The correlation between both measures is above 99.9% and all results are identical.

6.3.1 Robustness checks

One concern with the above findings is that surname order might be correlated with unobserved quality. We perform several robustness checks to make sure that our findings are not reflecting some sort of relationship between surname order and quality. In Figure 3b, we use the surname order of Senate candidates' maternal surnames. Here, the idea is that, if there is strategic nomination by parties, only the paternal surname should play a role. If we still find differences in the nomination of candidates by gender and maternal surname order, then there must be something else at play—perhaps something related to particular political dynasties and gender. As we expected, we do not observe any significant pattern in candidates' maternal surnames (Table 7, column (3)).

In Figures 3c and 3d we use data from local elections, where most candidates to legislative elections started their political career. The robustness check relies on another possible link between surname order and quality: this could exist if individuals with a given surname order invest more in a political career. In this regard, we should note that alphabetical voting is only in place in Spain for Senate elections. In all other sorts of elections (local, regional, House of Representatives), surname order does not play a role. In Figure 3c we use data on all of the mayors in Spain, and in Figure 3d we use data on all candidates to local elections. As expected, in neither of the two cases can we reject that the mean surname order of politicians (whether male or female) is different than the populational mean (Table 7, columns (4) and (5)).[19]

Another potential threat to the validity of the identification would exist if individuals could change their surname and, thus, affect ballot order. This is not the case in Spain, where surname changes are extremely restricted and are very rare (*Ley de Registro Civil*, Article 57). For instance, in 2001, only 1426 surname changes were granted (*Anuario de la Dirección General de los Registros y del Notariado, Ministerio de Justicia*, 2002). Most of these changes involve hyphenating the paternal and the maternal surname to create a new surname—e.g., Esteve-Volart—and do not affect surname order. Moreover, in Spain, women cannot adopt their husband's surname.

6.4 Where are the missing female candidates?

What happened to potential female candidates in constituencies where the party expects all three candidates to win, but whose surname is "too late" in the alphabet? In constituencies where parties expect to obtain only one seat, what happened to potential female candidates with surnames "too early" in the alphabet? We investigate if these women are nominated to the House of Representatives, or if they are not nominated at all.[20]

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[19]Another concern would be the possibility that in the Spanish population surname order is associated with income or education. However, evidence from Census data suggests that, while slight differences exist in the share of graduates across deciles, there is no clear relationship between surname order and educational attainment across individuals. This information comes from the Census of Santander 2001 and involves individuals between 30 and 70 years of age. We thank Lola Collado and Ignacio Ortuño-Ortin for providing us with the data.

[20]It is theoretically possible that there is a relatively small pool of potential female candidates, and parties are nominating female candidates to run for provinces from which they are not from. We have checked the lists and have verified that every female candidate was either born in the province, or a province resident. It is also possible that female party members with surnames that make them "inappropriate" for inclusion in their party's Senate lists end up

Elections to the House and to the Senate are held simultaneously. It is possible that female party members with "inappropriate" surnames for the Senate list are allocated to House lists. For instance, consider a female party leader located in a constituency where her party is expected to obtain only one Senate seat. If her surname is early in the alphabet, including her in the Senate list will mean other Senate candidates from her party will not be elected. If the party wishes to nominate her, but prefers another candidate for the Senate seat, they might include her in the House ballot, where lists are closed and ballot order is determined by the party. In other words, the female candidates missing from Senate lists might be running for House seats.

In Figure 3e we show the surname order of House candidates. We observe that female House candidates are relatively more likely to have surnames early in the alphabet in races where only one Senate candidate is expected to be elected. Given that surname order plays no role in House lists, this would be consistent with parties' nomination strategies in the Senate having an influence on the nominations to the House. This effect is significant at the 1 percent level (column (6) in Table 7).

The strategic selection of female candidates in the House and in the Senate goes in opposite directions. To study the net effect, in Figure 3f we examine the nomination of all candidates to legislative elections (Senate and House of Representatives). When we look at all candidates together, we do not see any significant gender differences in the surname order of candidates, neither in the figure nor in the regression analysis in column (7), Table 7. This suggests that parties assign female candidates to either the Senate lists or the House lists according to candidates' surname.

6.5   Heterogeneity analysis

Next we investigate the consistency of our results over a number of dimensions: political experience, timing, and ideology. In column (1) in Table 8 we report the main estimates from Tables 4, 5, 6 and 7. First we split our sample of candidates into new candidates and candidates with prior political experience in the Senate or the House of Representatives. Results are in columns (2) and (3) of Table 8. We find that the quality of positions that candidates are running in is particularly bad for female new candidates; however, women run for worse positions than men even when they are experienced candidates (rows (1) and (2)). Second, we do not observe any significant changes in the gender gap in quality of the positions over time (columns (4)-(7)). Third, both female candidates in left-wing and right-wing parties are assigned to significantly worse positions than men (columns (8) and (9)).

Regarding gender differences in votes (row (3)), we find that female candidates attract more votes, but we do not find any significant differences related to experience (columns (2) and (3)), or ideology (columns (8) and (9)). We observe that over the years, a female premium has arisen, but the differences over time are not significant (columns (4)-(7)).

As for surname order, we do not observe any significant differences from our main results (column (1)) in any of the other dimensions. Overall, results are generally similar over time and across experience

directly appointed as senators. The evidence, available upon request, is not consistent with this hypothesis. During the period we consider, only 37 appointed senators are female (18% of a total of 207), and there is no relationship between the surname order of appointed senators and the average quality of the positions in the Senate list in the province.

and ideology.

7 Conclusions

This paper examines party nomination strategies for Spanish legislative elections to shed light on the low level of female representation. We find that parties nominate female candidates to worse positions on candidate lists in both Senate and House elections, where they have lower chances of getting elected. This result holds even after controlling for the political experience of candidates. Additionally, we find that the introduction of gender quotas has not redressed this pattern.

We use the particular framework of Senate elections in order to study the source of these nomination patterns. Our evidence suggests that the gender bias in nominations that we observe cannot be justified by a potentially lower ability of female candidates to attract votes: we find that in Spanish elections, female candidates attract more votes.[21]

We find another piece of information suggesting that perhaps female candidates are nominated to worse positions in the list due to party bias. The degree of political competition plays an important role in the selection of female candidates: in constituencies where there is uncertainty regarding the number of seats each party will win, we find the strategic nomination of female candidates to be much weaker. The fact that strategic nomination is stronger in the absence of political competition is consistent with Becker (1957)—political parties focus relatively more on candidate quality when it is more costly not to do so.

We have further explored how parties carry out their nomination strategies by gender. In House elections, where lists are closed and ballot order is directly decided by the party, parties can simply allocate male and female candidates according to their strategies. In Senate elections, where voting is individual, the implementation of parties' strategies is more complex. Voters choose among candidates ordered alphabetically in the party list; however, they typically favor the candidate at the top of the list. This opens the possibility for parties to manipulate the electoral outcome by picking candidates on the basis of surname. Our evidence shows that parties strategically select female (but not male) candidates by surname, according to how their presence and position on the list affects male candidates and gender statistics. In particular, when all candidates in the list are expected to be elected and order is irrelevant, female candidates are drawn from the beginning of the alphabet. However, when only one of the candidates in the list is expected to get elected, female candidates are drawn from the end of the alphabet. Despite surname order not playing any role in House elections, we find that female House candidates are also selected based on their surname. In particular, we find the opposite pattern as the one in the Senate, suggesting that parties nominate female candidates to the Senate or to the House based on how their surname fits parties' strategies. We rule out that our results reflect a potential correlation between surname order and unobserved politician quality using information from a number of additional sources.

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[21]Note that, in this respect, Spain differs from other countries, such as France and Italy, where female candidates seem to attract fewer votes than male candidates (Frechette et al. 2008, De Paola et al. 2010 respectively).

There are several stories that are consistent with our results. First, male candidates may be better than female candidates in dimensions that are unobservable to voters (and to econometricians) but are observable to party leaders. Unfortunately, we cannot test this hypothesis. Second, there might be a possible supply-side explanation. Perhaps women only opt to run for electoral positions where they would not get elected. However, this cannot explain why women tend to be assigned to better positions whenever a race is expected to be close. Finally, it might be that political parties do value the presence of women in lists but, in an example of 'old boys' networks', parties adopt gender parity whenever it is not costly for male candidates. Parties' willingness to include women in candidate lists, even in the absence of quotas, may reflect the existence of social pressure. This is consistent with the results from a poll by the *Centro de Investigaciones Sociológicas*, that finds that 87% of citizens either agree or strongly agree with the statement that the participation of women in (political) institutions should be encouraged.[22]

The results in this paper suggest that, in the absence of political competition, parties place female candidates on the ballot strategically. For this reason, the gender quotas in candidate lists, as well as the parties' commitment to place women at the top of the list, have a limited effect in terms of gender parity. This, of course, is an example of the more general principle that agents will react to binding regulations in ways to offset the regulation's direct effect. The strategic nomination of female candidates is feasible in House elections (where the ballot is closed) but also in Senate elections (where voting is individual but ballot order is alphabetical). Paradoxically, in electoral systems where alphabetical order is in place, the strategic nomination of female candidates may have negative effects in terms of quality, as the pool of female party members from which parties choose candidates is constrained by their surnames.

According to our evidence, an increase in the degree of contestability of electoral races would enhance the chances of female candidates. Unfortunately, the degree of political competition is seldom a policy option. Alternatively, an effective implementation of quotas requires a ballot design that prevents parties from exploiting the order effect to favor certain candidates. In order to eliminate the existing order effect in Spanish Senate elections, we propose ballot order rotation: ballot positions are rotated across candidates, and multiple versions printed, so that every candidate tops the ballot as often as every other candidate.[23] According to our calculations, the success rate of female Senate candidates would rise from 52% to 64%, and this would increase female representation in the Senate by 23%.[24] In terms of costs, since in Senate elections parties only nominate three candidates per list, rotation ordering would in practice imply printing only three versions of a ballot. Rotation would neutralize the

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[22]Question 15, Encuesta 2588, "Representación y Participación Política en España", 2005, *Centro de Investigaciones Sociológicas.*

[23]The system is called Robson rotation, after Neil Robson, the Liberal member of the House of Assembly who introduced it in Tasmanian elections in 1979 (Tasmanian Parliamentary Library, *http://www.parliament.tas.gov.au/tpl/Backg/HAElections.htm*, retrieved June 9, 2009). A rotating ballot is presently used in some elections in Australia, as well as in the United States (King and Leigh 2009, Alvarez et al. 2006).

[24]We have performed a simulation where, using data from the last four elections and controlling for political experience, we randomize candidates' order. We report the average from 1000 simulations. For simplicity, we have assumed that the characteristics of male and female candidates remain unchanged. This may not be necessarily true. On the one hand, if surname order is not a constraint, the quality of female candidates might improve. On the other hand, the selection of female and male candidates under the new scheme might change.

Randomizing ballot order in the House of Representatives would increase the success rate of female House candidates from 36% to 45% (a 26% change in female representation).

existing order effect and erode surname based nomination. Given the results in this paper, rotation would increase the effectiveness of gender quotas.

8 Data appendix

In this paper we use data from elections to the Spanish Congress held during the years 1996, 2000, 2004 and 2008. We have restricted our sample in several ways. First, for simplicity we exclude constituencies where fewer than four senators are elected. That is, we restrict the analysis to peninsular provinces (47 as opposed to 50 provinces). The insular provinces (Balearic and Canary Islands) elect one, two or three senators per island, and Ceuta and Melilla elect two senators each. In constituencies electing fewer than four senators, voters correspondingly have fewer than three votes. Second, we exclude two provinces from our analysis where, historically, the political competition in Senate elections has involved more than two political parties (three parties have obtained representation in the Senate in one of the last four elections in Vizcaya and Guipúzcoa: the Socialist Party, the People's Party, and the Basque Nationalist Party). The reason for doing so is that the nomination incentives of parties may vary greatly depending on the number of potential competing parties they are facing. Third, we consider only the two main parties in each province, in practice the only two parties that can expect to get seats. The two main parties are the Socialist Party in all provinces, and, except for the Catalan provinces, the People's Party. In Catalan provinces, the CiU (*Convergència i Unió*, Catalan nationalists) competes against the Socialist Party. For Senate elections, in Navarra the People's Party ran in a coalition with *Unión del Pueblo Navarro* during the period considered, while in Catalonia since 2000 the Socialist Party runs in a coalition with *Iniciativa per Catalunya* and *Esquerra Republicana de Catalunya*. Therefore our database includes a total of 360 party lists. This makes a total of 1056 Senate candidacies and a total of 2490 House of Representatives candidacies. We have gathered information on candidates to the Senate, House, local elections, as well as appointed senators. In Spain, it is almost always possible to tell a person's gender by their first name. In the few cases in which gender was not clear, we verified this information by checking pictures of the candidates. Information on Senate candidates' names and the number of votes obtained was available from the website of the Ministry of the Interior.[25] Similar information on House candidates was available from the State Gazette website (*Boletín Oficial del Estado*, http://www.boe.es). We have gathered information on appointed senators from the Senate website (http://www.senado.es, retrieved April 1, 2009). Information on local elections comes from the Ministry of the Interior.

We have collected information on the previous political experience of Senate candidates at the national and local level; for House candidates, we only observe political experience at the national level. This information comes from the individual websites of candidates and from the press.

We have obtained information about the distribution of surnames in the Spanish population from the Census 2007. It was compiled by the Spanish Bureau of Statistics (*Instituto Nacional de Estadística*).

We use the distribution of surnames in the Spanish population by province to create a measure that

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[25] http://www.elecciones.mir.es, retrieved April 1, 2009.

orders surnames alphabetically, and we call it *surname order*. We do this for individuals' paternal and maternal surnames separately. We have normalized this variable to take values between zero and one. When many people share the same surname, we calculate the surname order assuming that the individual is placed at the middle of all individuals bearing that surname. For instance, an individual living in Madrid whose surname is Ruiz-Gallardón receives a value of 0.8486. In other words, 84.86% of the population in Madrid has a surname alphabetically before the surname Ruiz-Gallardón, and 15.24% of the population has a surname alphabetically after Ruiz-Gallardón.

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Figure 1: Female candidates and female legislators (%), Spanish Congress
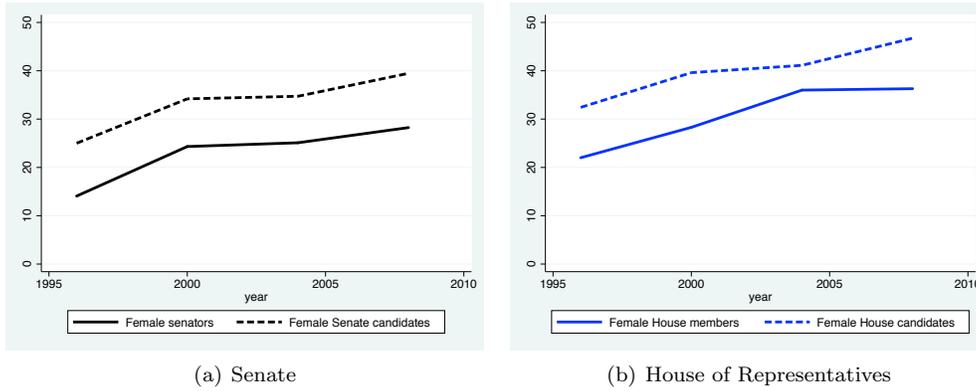
(a) Senate

(b) House of Representatives

Source - Authors' calculations using data corresponding to the 1996, 2000, 2004 and 2008 Senate and House elections. Senators includes elected and appointed senators. Candidates includes those of the main parties: PSOE, PP, IU, CiU and PNV.

Figure 2: Average quality of positions (%), Spanish Congress
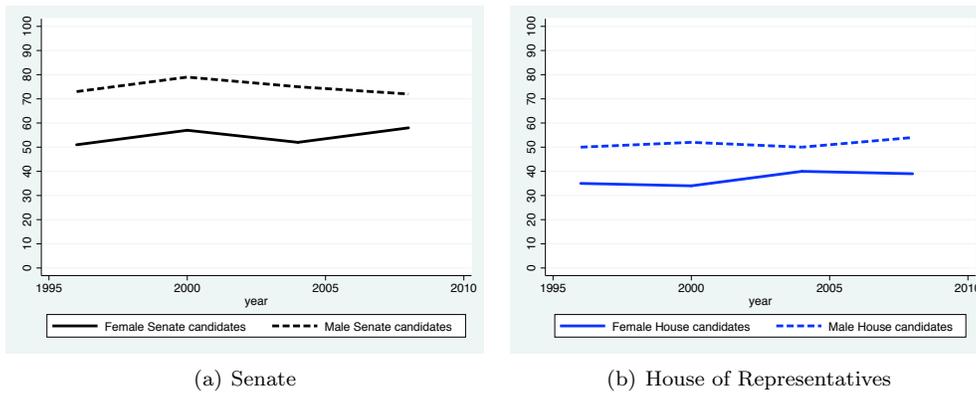
(a) Senate

(b) House of Representatives

Source - Authors' calculations using data corresponding to the 1996, 2000, 2004 and 2008 Senate and House elections. "Quality of positions" represents the expected probability of being elected based on previous electoral results (equation(1)).

Figure 3: Surnames
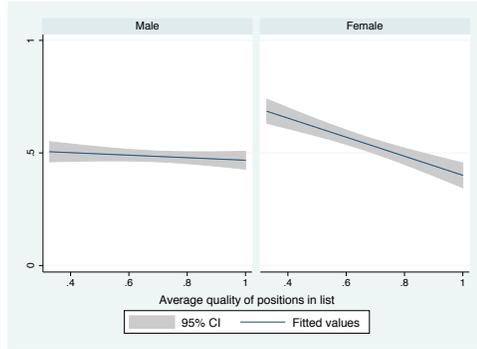
(a) Senate candidates
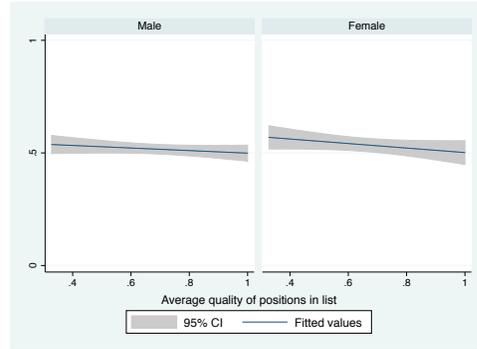
(b) Senate candidates (maternal surnames)
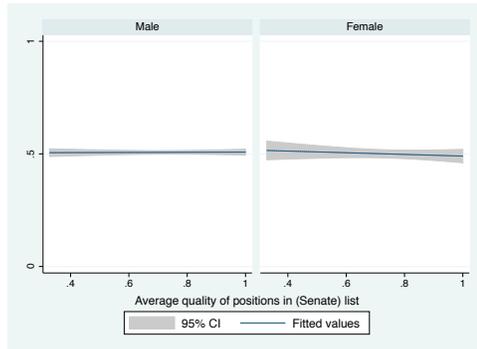
(c) Mayors
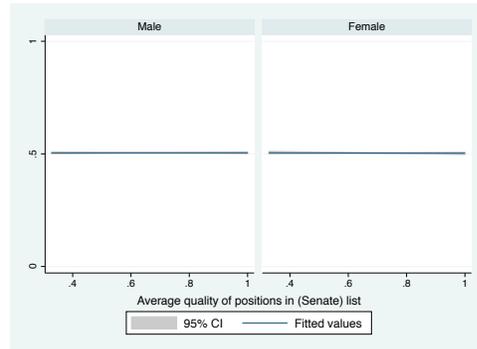
(d) Candidates to local elections
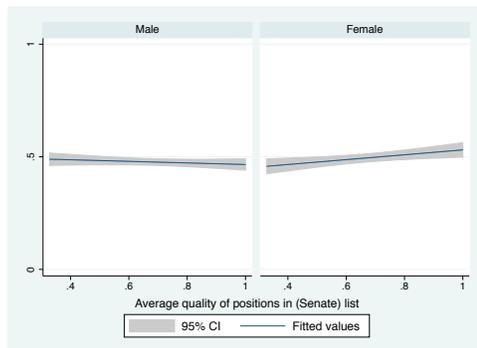
(e) House candidates
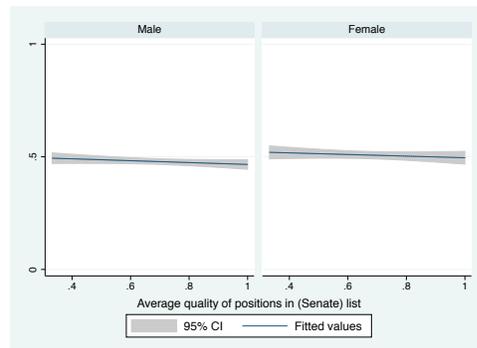
(f) Senate and House candidates

Source - Authors' calculations using data corresponding to the 1996, 2000, 2004 and 2008 Senate and House elections for figure (a), (b), (e) and (f); and from the 2007 local elections for figures (c) and (d). Surname order indicates the percentile where an individual's surname is alphabetically located within the Spanish population. Average quality of positions on the list is calculated using equation (1), and it takes value 1 when all three candidates in the list are expected to get elected based on previous electoral results, and value 1/3 when only one candidate in the list is expected to get elected.

Table 1: Descriptive statistics, by gender

	Male	Female	p-value
Candidates to the Senate	(1)	(2)	(3)
Senator	0.42	0.19	0.00
Member of the House of Representatives	0.19	0.10	0.00
Mayor, capital	0.07	0.00	0.00
Mayor, other	0.25	0.14	0.00
Town councilor, capital	0.15	0.10	0.04
Town councilor, other	0.22	0.30	0.01
First in the ballot	0.41	0.21	0.00
Votes (%)	41.65	40.70	0.07
Number of observations	709	347	
Candidates to the House			
Senator	0.04	0.02	0.02
Member of the House of Representatives	0.31	0.14	0.00
First in the ballot	0.19	0.07	0.00
Number of observations	1501	989	

Notes: Columns (1) and (2) provide means, column (3) provides the p-value for the test of the null hypothesis that the difference between columns (1) and (2) is zero.

Table 2: Descriptive statistics – Surname order, by gender

	Male	Female	p-value
Senate	(1)	(2)	(3)
Candidates to the Senate	0.48	0.55	0.00
	[709]	[347]	
Candidates to the Senate - maternal surname	0.52	0.54	0.33
	[709]	[347]	
Elected senators	0.43	0.43	0.88
	[541]	[179]	
Elected senators - maternal surname	0.51	0.52	0.64
	[541]	[179]	
Appointed senators	0.51	0.44	0.22
	[170]	[37]	
House			
Candidates to the House	0.48	0.50	0.13
	[1501]	[989]	
Elected House members	0.48	0.51	0.20
	[789]	[353]	
Local government			
Candidates in local elections	0.50	0.50	0.64
	[50847]	[31801]	
Mayors	0.51	0.50	0.50
	[5096]	[988]	

Notes: Columns (1) and (2) provide means, column (3) provides the p-value for the test of the null hypothesis that the difference between columns (1) and (2) is zero. The number of observations is in brackets.

Table 3: Predicted quality of positions

	Senate		House	
	(1)	(2)	(3)	(4)
Vote difference in previous election	0.44***	0.74	1.04***	1.04***
	(0.03)	(0.47)	(0.01)	(0.04)
Second in the ballot	-0.59***	-0.42***		
	(0.05)	(0.08)		
Third in the ballot	-0.60***	-0.43***		
	(0.05)	(0.08)		
Includes cubic polynomial	No	Yes	No	Yes
Pseudo R-square	0.496	0.528	0.768	0.771
N	1056	1056	2490	2490

Notes: Each column reports the average marginal effects of a probit regression where the dependent variable is a dummy variable indicating whether the candidate running in a certain ballot position got elected. In columns (1) and (2) *vote difference in previous election* measures the difference in the share of votes obtained by the candidate's party and the other main party in the previous House election. In columns (3) and (4) *vote difference in previous election* measures the difference between the share of votes obtained by the candidate's party in the previous Senate election and the share of votes that a candidate placed on that position needed in order to get a House seat. Column (2) includes a cubic polynomial in vote difference in the previous election fully interacted with a complete set of position dummies, while column (4) includes a cubic polynomial in vote difference in the previous election. Standard errors clustered at the Year*Province level in parentheses.

Table 4: Quality of positions on the ballot, Senate

	(1)	(2)	(3)	(4)	(5)
Female	-0.19***	-0.11***	-0.06	0.08	0.14
	(0.02)	(0.03)	(0.04)	(0.08)	(0.10)
Senator		0.27***	0.27***	0.27***	0.28***
		(0.02)	(0.02)	(0.02)	(0.02)
House member		0.17***	0.17***	0.17***	0.17***
		(0.03)	(0.03)	(0.03)	(0.03)
Mayor, capital		0.11**	0.11**	0.10**	0.11**
		(0.04)	(0.04)	(0.04)	(0.04)
Mayor, other		-0.00	-0.00	0.00	-0.00
		(0.04)	(0.04)	(0.04)	(0.04)
Town councilor, capital		0.12***	0.12***	0.12***	0.12***
		(0.04)	(0.04)	(0.04)	(0.04)
Town councilor, other		0.02	0.02	0.01	0.01
		(0.03)	(0.03)	(0.03)	(0.03)
Female*Quota			-0.07		-0.08
			(0.05)		(0.05)
Female*Lack of competitiveness				-0.52**	-0.55**
				(0.23)	(0.23)
Party*Year fixed-effects	No	Yes	Yes	Yes	Yes
Province*Year fixed-effects	No	Yes	Yes	Yes	Yes
Adj. R-squared	0.068	0.207	0.208	0.211	0.213

Notes: OLS regressions. There are 1056 observations. Standard errors clustered at the Year*Province level in parentheses. The dependent variable is calculated using equation (1) and it represents the expected probability that a candidate running in a given position on the ballot will be elected based on her party's electoral support in that constituency. *Quota* takes value one whenever there is a party internal rule or a mandatory quota requiring that at least one of the three candidates in the list must be of either gender.

Table 5: Quality of positions on the ballot, House of Representatives

	(1)	(2)	(3)
Female	-0.14***	-0.04***	-0.03
	(0.01)	(0.01)	(0.02)
Senator		0.31***	0.31***
		(0.05)	(0.05)
House member		0.59***	0.60***
		(0.01)	(0.01)
Female*Quota			-0.02
			(0.03)
Party*Year fixed-effects	No	Yes	Yes
Province*Year fixed-effects	No	Yes	Yes
Adj. R-squared	0.023	0.301	0.301

Notes: OLS regressions. There are 2490 observations. Standard errors clustered at the Year*Province level in parentheses. The dependent variable is calculated using equation (1) and it represents the expected probability that a candidate running in a given position on the ballot will be elected based on her party's electoral support in that constituency. *Quota* takes value one whenever there is a party internal rule or a mandatory quota requiring that at least 40% of the candidates in the list must be of either gender.

Table 6: Votes, Senate

	(1)	(2)	(3)
Female	-0.20	0.20*	0.27**
	(0.16)	(0.11)	(0.11)
Quality of position		2.21***	2.07***
		(0.11)	(0.10)
Senator			0.06
			(0.13)
House member			0.21
			(0.13)
Mayor, capital			0.25
			(0.17)
Mayor, other			0.35*
			(0.18)
Town councilor, capital			0.20
			(0.18)
Town councilor, other			-0.07
			(0.08)
Adj. R-squared	0.987	0.994	0.994

Notes: OLS regressions. There are 1056 observations. Standard errors clustered at the Year*Province level in parentheses. The dependent variable is the proportion of votes obtained by each candidate in Senate elections, years 1996-2008. All regressions include list fixed-effects. Observations are weighted by the total number of votes cast in a constituency. *significant at 10%; **significant at 5%; ***significant at 1%.

Table 7: Surname Order

| | Senate candidates | | | Local elections | | House | Both |
| | Paternal | | Maternal | Mayors | Candidates | | chambers |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Female	0.32***	0.25***	0.02	0.03	0.00	-0.07*	0.02
	(0.06)	(0.06)	(0.07)	(0.04)	(0.00)	(0.04)	(0.03)
Quality of positions	-0.07	-0.03	-0.10	-0.01	-0.00	0.00	-0.01
in Senate race	(0.06)	(0.06)	(0.06)	(0.04)	(0.00)	(0.03)	(0.03)
Female*Quality of	-0.38***	-0.33***	-0.01	-0.05	-0.00	0.14***	0.01
positions in Senate race	(0.10)	(0.10)	(0.10)	(0.05)	(0.01)	(0.05)	(0.04)
Constant	0.54***	0.57***	0.62***	0.52***	0.51***	0.47***	0.50***
	(0.05)	(0.05)	(0.05)	(0.03)	(0.00)	(0.03)	(0.02)
Controls for experience	No	Yes	Yes	No	No	Yes	Yes
Adj. R-squared	0.099	0.131	0.014	0.000	0.000	-0.003	0.007
N	1056	1056	1056	6084	82648	2490	3546

Notes: OLS regressions. The dependent variable is paternal surname order in all columns except for column (3), where it is maternal surname order. Standard errors clustered at the Year*Province level in parentheses. All regressions include Party*Year dummies and Province*Year dummies. *significant at 10%; **significant at 5%; ***significant at 1%.

Table 8: Heterogeneity Analysis

LHS Variable	RHS Variable	(1) All	(2) New	(3) Experienced	(4) 1996	(5) 2000	(6) 2004	(7) 2008	(8) Left	(9) Right
Quality of position, Senate	Female	-0.11***	-0.16***	-0.05**	-0.10**	-0.13***	-0.14***	-0.07*	-0.15***	-0.05*
		(0.02)	(0.03)	(0.02)	(0.05)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)
Quality of position, House	Female	-0.04***	-0.04***	-0.04*	-0.02	-0.06**	-0.02	-0.05*	-0.03*	-0.06***
		(0.01)	(0.02)	(0.02)	(0.03)	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)
Votes	Female	0.27**	0.08	0.35	-0.12	0.40**	0.30*	0.40***	0.41**	0.11
		(0.11)	(0.10)	(0.34)	(0.24)	(0.18)	(0.16)	(0.14)	(0.18)	(0.10)
Surname order, Senate	Quality positions	-0.03	-0.18*	0.14	-0.01	0.05	-0.08	-0.03		
		(0.06)	(0.10)	(0.13)	(0.11)	(0.13)	(0.14)	(0.14)		
	Female*Quality positions in Senate race	-0.33***	-0.19	-0.29	-0.44**	-0.42**	-0.19	-0.44**	-0.23*	-0.50**
		(0.10)	(0.15)	(0.29)	(0.18)	(0.20)	(0.19)	(0.17)	(0.13)	(0.19)
Surname order, House	Quality positions	0.00	0.01	0.01	-0.06	0.06	0.01	0.02		
		(0.03)	(0.04)	(0.08)	(0.07)	(0.07)	(0.06)	(0.07)		
	Female*Quality positions in Senate race	0.14***	0.12**	0.10	0.16	0.28***	0.14	-0.02	0.02	0.23***
		(0.05)	(0.06)	(0.17)	(0.11)	(0.10)	(0.09)	(0.10)	(0.08)	(0.08)
Surname order, both chambers	Quality positions	-0.01	-0.05	0.05	-0.07	0.07	0.01	-0.01		
		(0.03)	(0.04)	(0.05)	(0.06)	(0.05)	(0.05)	(0.07)		
	Female*Quality positions in Senate race	0.01	0.02	-0.02	0.02	0.10	0.03	-0.12	-0.04	0.04
		(0.04)	(0.05)	(0.14)	(0.09)	(0.09)	(0.07)	(0.08)	(0.07)	(0.07)

Notes: Each cell provides results from a separate OLS regression. Rows (1) and (2) report coefficient γ from regression (2); row (3) reports coefficient β from regression (3); rows (4)-(6) report coefficients λ and ϕ from regression (5). In column (1) we report results from using the whole sample; columns (2) and (3) show results from splitting the sample into new candidates and candidates with prior political experience in the Senate or in the House of Representatives respectively; columns (4)-(7) report results by election year; columns (8) and (9) disaggregate the sample into left-wing and right-wing party candidates respectively. Standard errors clustered at the Year*Province level in parentheses. All regressions include Party*Year dummies, Province*Year dummies and controls for candidates' political experience. *significant at 10%; **significant at 5%; ***significant at 1%.