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# Gender and Lawmaking in Times of Quotas

Quentin Lippmann\*

## Abstract

This article studies gender differences in lawmaking in a context of gender quotas. I use two empirical strategies to randomize the gender of legislators and text analysis to identify the topics of the legislation in the French Parliament from 2001 to 2017. Across the two Houses, I find consistent evidence that female legislators work on different topics than men. I show that they are most active on women's issues while men seem more involved in military issues. I provide evidence that these differences partly stem from legislators' individual interest. From a public policy perspective, the results suggest that gender quotas are likely to lead to a shift in lawmaking and a greater prevalence of women's issues in Parliament.

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

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

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# Introduction

In 2020, only 26% of parliamentary seats worldwide were held by women.<sup>1</sup> This imbalance is often criticized on the grounds that politicians tend to advocate on behalf of groups that share a component of their identity. According to this argument, female legislators would defend the interests of women more than their male counterparts, and increasing the number of women in politics would lead to a legislation that is more favorable to women’s rights and interests. In the wake of the introduction of gender quotas in about 130 countries, this argument has become increasingly relevant.<sup>2</sup>

Yet, despite important policy implications, the validity of this argument remains debatable. There is conflicting evidence on this question. In developing countries, studies have shown that female politicians deliver different types of policies (Chattopadhyay and Duflo, 2004, Clots-Figueras, 2011, 2012; Bhalotra and Clots-Figueras, 2014 or Brollo and Troiano, 2016), while results have been less conclusive in developed countries (Ferreira and Gyourko, 2014, Bagues and Campa, 2021) questioning whether gender matters only in specific contexts. On top of this debate, the existing studies have mostly exploited spending or public goods data which may be difficult to relate to women’s issues and compare across different settings, perhaps explaining some of the inconsistent findings of the literature. There is limited evidence on lawmaking, even though it is one of the main activities of politicians.

In this paper, I study gender differences in lawmaking in a context of gender quotas. I focus on the French Parliament, an interesting setting as it is located in a developed country, where gender differences in policymaking are questionable, and representative of the changes brought by gender quotas. In 1997, less than 8% of Parliament seats were occupied by women. Following the introduction of gender quotas in both Houses in 2001, the share of female legislators gradually rose to about 25% in 2017. To identify the effect of the legislator’s gender, I use two empirical strategies for the two Houses of the Parliament. To measure lawmaking outcomes, I collected data on all the 300,000 amendments defended by legislators during the 2001-2017 period and use both unsupervised and dictionary-based methods to classify the topics within this legislation (Section 2).

The first part of this paper focuses on the Lower House (Section 3). To identify the effect of the legislator’s gender, in the preferred specification, I use a regression discontinuity approach exploiting mixed-gender close races. I first apply unsupervised topic modeling on the entire set of amendments in order to test whether female legislators produce amendments on different topics than men *overall*. I find strong support in favour

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<sup>1</sup><https://data.worldbank.org/indicator/SG.GEN.PARL.ZS>

<sup>2</sup><https://www.idea.int/data-tools/data/gender-quotas/country-overview>

of this hypothesis. Then, I use dictionary-based methods to classify the legislation into 27 topics that are easier to interpret and study gender differences on each of these topics. I show that women’s issues are the ones with the largest differences in involvement between male and female legislators. As for other topics, female legislators are more active on child and health issues where they are respectively about 50% and 25% more likely to initiate at least one amendment. At the other extreme, men appear to be about 50% more likely to initiate at least one amendment on military issues. There is only weak or no evidence of gender differences on topics traditionally considered as more feminine such as education or more masculine such as business.

Next, I focus on the Upper House (Section 4). Starting in 2001, a gender quota was introduced in districts that elect more than 4 senators. To identify the effect of the quota, I use a difference-in-differences strategy comparing the activity of districts targeted by the quota to those that are not, before and after the introduction of the quota. Consistently with the results obtained in the Lower House, I find that the activity of districts targeted by the quota became significantly different than the one of other districts after the introduction of the quota. Second, using dictionary-based methods, I show that districts targeted by the quota increased the most their activity on women’s issues. At the other extreme, I find suggestive evidence that they also decreased their activity on military issues, although the results are less precisely estimated. As regards other topics, the quota seemed to have little if no impact.

To demonstrate the robustness of the results to multiple testing issues, I implement bootstrap-based permutation tests that consist in randomizing the treatment and the content of dictionaries (Section 5). I show that the results are unlikely to be obtained under random circumstances, suggesting that multiple testing issues are not driving the findings. Moreover, I also show that the results are robust to using different types of outcomes.

The last part of the paper explores the mechanisms behind these findings (Section 6). I first show that women seem to be as active as men, which suggests that the results are not driven by differences in the overall level of activity of legislators. Second, I study whether gender differences in lawmaking could be driven by other characteristics of legislators that are correlated with gender. To do so, I replicate the empirical strategies and control for other individual characteristics of legislators such as their age, political experience and past occupations. The results remain essentially similar indicating that these characteristics are unlikely to drive the findings

Finally, I focus on the mechanisms explaining the consistent effect of female legislators on women’s issues. The two empirical strategies allow to neutralize the role of constituents’ preferences and the results suggest that female legislators produce more leg-

isolation on this topic because of their identity. But what lies behind identity? It could be that female legislators are intrinsically more interested in women’s issues but it could also be that political parties strategically force female legislators to produce women-related amendments. To provide evidence on the individual interest channel, I restrict the sample to cases where amendments are unlikely to stem from the will of political parties. It can be observed that, as we move to cases where the political party influence declines, female legislators are increasingly more likely to author women-related amendments than men. I also provide evidence that women are more likely to initiate consequential amendments. This suggests that the greater contribution of female legislators to women’s issues partly stems from their individual interest. To consolidate this interpretation, I exploit an institutional feature of the 2012-2017 term where the Lower House legislators were granted discretionary funds and show that, relatively to men, female legislators had a greater propensity to use these funds for gender equality projects.

These results contribute to several strands of the literature. The first strand relates to the role of women as policymakers. While an early literature in political science found that gender matters for lawmaking ([Thomas, 1991](#), [Thomas and Welch, 1991](#) or [Bratton and Haynie, 1999](#)), the results remain difficult to interpret as they do not disentangle constituents’ preferences from politicians’ identity. Starting from [Chattopadhyay and Duflo \(2004\)](#), the economic literature has attempted to identify the role of politicians’ gender. Studies focusing on developing countries have generally found that gender matters for policymaking ([Clots-Figueras, 2011, 2012](#); [Bhalotra and Clots-Figueras, 2014](#) or [Brollo and Troiano, 2016](#)) while the results have been mixed in developed countries ([Ferreira and Gyourko, 2014](#) or [Gago and Carozzi, 2020](#)).<sup>3</sup> Additionally, the existing studies have exploited spending or public goods data which are difficult to compare across different settings and may not include categories of interest such as women’s issues. To my knowledge, this paper is the first to combine the use of text analysis and quasi-experimental variations to investigate the effect of legislators’ gender. This approach (i) provides evidence that female legislators work on different topics and defend women’s issues more than men in a developed country setting (ii) allows to compare their activity on a wide range of topics while previous studies often study only one topic or pool them in large categories and (iii) provides direct evidence on the individual action of female politicians while existing papers focus on the aggregate effect.

The second strand, closely linked to the first, relates to the effects of gender quotas in politics. This literature has attempted to understand their effect on policymaking ([Chattopadhyay and Duflo, 2004](#), [Bhalotra et al., 2020](#), [Bagues and Campa, 2021](#)), the

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<sup>3</sup>See [Wangnerud \(2009\)](#), [Lawless \(2015\)](#) or [Hessami and da Fonseca \(2020\)](#) for reviews of the literature on the substantive effects of women representation in politics.

perception of women (Beaman *et al.*, 2009), the quality (Baltrunaite *et al.*, 2014, Besley *et al.*, 2017) and future careers of politicians (O’Brien and Rickne, 2016, Lippmann, 2018, Lassébie, 2019 and O’Connell, 2020) and the influence of other policies (Baltrunaite *et al.*, 2019) or electoral systems (Gonzalez-Eiras and Sanz, 2021) on the presence of women in politics. This paper is related to the part of this literature focusing on policymaking for which the existing evidence in developed countries remains limited. I contribute to this literature by analyzing the role of lawmakers at the national level and by studying two different quota designs in France. The results suggest that women elected in the context of gender quotas have different lawmaking activities and defend women’s issues more than men.

The third strand relates to the wider debate on the impact of politicians’ identity. In the classical median voter model (Downs, 1957), politicians’ identity does not matter as policies should converge towards the preferences of the median voter. But in later-developed frameworks enriching the Downsian model (Alesina, 1988, Osborne and Slivinski, 1996 or Besley and Coate, 1997), policymakers’ identity can play a role and influence which policies are implemented. The findings of this paper bring empirical support to these political economy models. Moreover, the methods used in this paper could be extended to understand the influence of alternative dimensions of identity. Examples of these dimensions include among others caste (Pande, 2003), ethnicity (Broockman, 2013; Burgess *et al.*, 2015; Kramon and Posner, 2016; Luca *et al.*, 2018), family (Washington, 2008), geographic origin (Hodler and Raschky, 2014; Do *et al.*, 2017) and religion (Meyersson, 2014; Bhalotra *et al.*, 2014 or Chaudhary and Rubin, 2016).

# 1 Institutional Context: Legislative Work in the French Parliament

## 1.1 Public Policy Impact: Bills, Amendments and Vote

Legislators have three ways to directly impact public policy: draft bills, amendments and vote.

*Bills* - Bills can be introduced by the government or by parliamentarians. Since the government sets the agenda of the Houses for two weeks per month (and has various means to set the agenda during the remaining two weeks), the introduction of a bill by parliamentarians does not necessarily lead to its examination. Moreover, when introduced by parliamentarians, bills often result from a collective initiative originating from the political party to which parliamentarians belong.

*Amendments* - Amendments consist of the deletion, modification or addition of articles

included in an existing bill. Amendments can be both sole-authored or co-sponsored by other parliamentarians. Importantly, there is no limit on the number of amendments to a bill that can be submitted, nor is there a limit on the number of co-sponsors an amendment can have or the number of amendments a parliamentarian can produce. Unlike draft bills, all amendments must be examined and discussed.

*Votes* - To be adopted, amendments and bills need to obtain a majority of votes. In the vast majority of the cases, the voting system is done with a show of hands. This is the regular procedure and has been adopted because it is much faster than alternative methods. For important bills, the vote can be recorded. In this case, parliamentarians vote from their seat with an electronic device. In the event of an absence, it is possible to delegate votes to another representative.

## 1.2 Amendments as the Main Form of Parliamentary Initiative

In the French Parliament, there is no doubt that amendments are the main form of parliamentary initiative.<sup>4</sup> Quantitatively, it is well-established that the government remains the primary source of bills ultimately adopted while amendments mainly originate from parliamentarians. In the past 50 years, more than 70% of bills originated from the government while, during the period 2002-2017, more than 80% of amendments were initiated by parliamentarians (see Tables A1 and A2).

As for votes, there is a strong party discipline in the French Parliament which leaves little room for individual initiative, since parliamentarians risk being excluded from their party if they vote against bills from their own side. Therefore, unless the bill is hotly debated (as the abortion bill studied in Van Effenterre, 2020), nearly all legislators follow this party discipline. As illustration, over the 2012-2017 Lower House term, about 60% of bills had no rebel vote and more than 90% had less than 10 (see Figure A1).

Qualitatively, scholars have acknowledged amendments as the main form of parliamentary initiative (Knapp and Wright, 2006, Avril and Gicquel, 2014). They often argue that this situation stems from the possibility for the government to set a large part of the agenda of both Houses (Rasch and Tsebelis, 2013). As such, bills are not necessarily discussed whereas all amendments must be examined.

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<sup>4</sup>As illustration, the Lower House website states that “*The right to amend is today the main form of expression of the parliamentary initiative*”(http://www2.assemblee-nationale.fr/decouvrir-l-assemblee/role-et-pouvoirs-de-l-assemblee-nationale/les-fonctions-de-l-assemblee-nationale/les-fonctions-legislatives/l-exercice-du-droit-d-amendement-et-annexe).

## 2 Data

### 2.1 Sources

*Lawmaking activity.* For the Lower House, the data on the activity of legislators is accessible on the official website starting from 2002.<sup>5</sup> I web scraped this data to build an analyzable data set containing all the amendments discussed during the 2002-2007, 2007-2012 and 2012-2017 terms. For the Upper House, the data on the amendments from 2001 onwards can be downloaded from the official website.<sup>6</sup> Unfortunately, the data is not available before 2001.

For every amendment, this data set indicates: its content, a short text outlining why it is important and should be adopted, and the bill that the amendment attempts to modify. The content is usually very short and standardized while the short texts are written directly by the legislators and contain arguments specific to the amendments.<sup>7</sup> The data set also specifies the identity of the amendment’s initiator and of all the legislators who co-sponsored it.<sup>8</sup>

*Election Results.* The data on the official election results come from the 2002, 2007 and 2012 elections for the Lower House and the 1995, 1998, 2001, 2004, 2008, 2011 and 2014 elections for the Upper House.<sup>9</sup>

### 2.2 Identifying the Topics of Amendments

#### 2.2.1 Unsupervised Methods

The topics of the amendments are not explicitly stated and there does not exist a training data set containing pre-defined categories. Absent these information, to retrieve the topics of the amendments and construct the outcomes of interest, I use two complementary approaches that rely on unsupervised and dictionary-based methods.

The unsupervised approach is used to answer the following question: “as compared to male legislators, are female legislators working on different topics *overall*?”. To compute the distribution of topics over each document, I rely on the Latent Dirichlet allocation (LDA) topic modeling technique (Blei *et al.*, 2003). This method models each document

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<sup>5</sup><http://www2.assemblee-nationale.fr/recherche/amendements>

<sup>6</sup><http://data.senat.fr/donnees/>

<sup>7</sup>Contents often only state a set of words should be added or removed. They use standardized formulations that can be found on the Lower House website (in French) at <http://www2.assemblee-nationale.fr/decouvrir-l-assemblee/role-et-pouvoirs-de-l-assemblee-nationale/les-fonctions-de-l-assemblee-nationale/les-fonctions-legislatives/l-exercice-du-droit-d-amendement-et-annexe>

<sup>8</sup>See Figure B1 for an example of amendment on the Lower House website.

<sup>9</sup><https://www.data.gouv.fr/en/posts/les-donnees-des-elections/>



as a finite mixture over an underlying set of topics and has been used in recent papers in economics (see for instance [Hansen \*et al.\*, 2018](#)).

I apply this method to the entire set of amendments discussed in the French Parliament over the period 2001-2017. I focus on the text justifying why amendments should pass. Before applying the LDA model, I pre-process each document in the following manner. First, I remove all the common stop words that are frequently used such as “the” or “and”. Second, I reduce each term to its linguistic root through stemming so that words such as “economics” or “economical” become “econom”. In the preferred model, I estimate the distribution of documents over 30 topics.<sup>10</sup> Table [B1](#) displays the top-5 keywords associated to 30 topics and Figure [B2](#) computes correlations between the topics found with the LDA approach and the dictionary-based methods.

The main advantages of this unsupervised method over the dictionary-based approach discussed in the next section is that the user does not need to specify words associated to topics. For each document, the method delivers the prevalence of each topic. Therefore, it allows to abstract from one’s subjectivity and decompose documents into a finite number of topics in order to study gender differences over this set of variables.

The main drawbacks of unsupervised methods are that the topics (i) can be difficult to interpret and (ii) may not be the ones we are interested in. For these two reasons, unsupervised methods seem mainly useful to ask whether women produce amendments on different topics than men *overall*. If we wish to study specific topics, then dictionary-based methods described in the next section appear more appropriate.

### 2.2.2 Dictionary-Based Approach

To study gender differences in lawmaking over specific topics, I first define a list of 27 non-mutually exclusive topics corresponding to the permanent government ministries that existed over the period 2001-2017 in France. To assign each amendment to a topic, I classify the most frequent 10,000 words into each of the 27 categories and remove false matches. This section illustrates this method by focusing on the topic of women’s issues.<sup>11</sup>

To identify the topics of amendments, I use dictionary-based methods containing words related to the topic of interest. For the topic related to women’s issues, I classify an amendment as women-related if the bill’s title or the text outlining the arguments why the amendment should pass contain one of the words included in the dictionary. I exploit these two sources of information as legislators can disseminate and provide provisions related to women’s issues in bills that specifically target these issues but also in other

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<sup>10</sup>In the appendix, I also display the results related to other numbers of topics.

<sup>11</sup>For other topics, additional methodological details are provided in Section [B.3](#) and descriptive statistics on the prevalence of each topic are displayed in Figure [B3](#).

bills that initially focus on a different topic. In the latter case, the short text will be informative on the motivation of the amendments.

To build the dictionaries, the assumption is that if the topic of an amendment is related to women, the term “women” or a synonym will appear. The dictionary contains the words “wom”, “gender” and “sex”.<sup>12</sup> The rationale behind this definition is that amendments may refer to women’s issues without explicitly using the word “women”. For instance, they may only contain the expression “gender equality” or “equality between the sexes”. Therefore, introducing the words “gender” and “sex” provides a more complete dictionary of women’s issues. To reduce potential measurement errors from such a definition, I removed false matches associated with the keywords “gender” and “sex”. These false matches refer to the use of the word gender as a synonym for “genre” or “kind of” in French and to the use of sex to refer to the same-sex marriage bill passed in the 2012-2017 term (see Table B4 for the list).<sup>13</sup>

The dictionary selected 3,905 amendments as women-related in the Lower House corresponding to a prevalence of 1.82% (2,064 amendments in the Upper House for 1.88%). The word “wom” is much more frequent than “sex” or “gender”. In the Lower House, “wom” occurs 5,554 times while “sex” and “gender” respectively occur 815 and 560 times. Additionally, Figure B5 provides descriptive statistics on the topics that are associated to women’s issues. We observe that 35% of women-related amendments also mention labor issues and about 25% mention family or health issues while slightly less than 20% also discuss child issues.

### 2.2.3 Validity of the Dictionary

To provide evidence on the validity of the dictionary, I perform two types of checks: one before the results and one after. Absent a training data set, the pre-checks consist in studying the most frequent expressions and manually screening the sample of amendments. The post-checks consist in testing the robustness of the findings to placebo samples. This section displays the pre-checks related to the topic of women’s issues, the post-checks are described in Section 5.

*Most Frequent Expressions* - Table 1 displays the 5 most frequent bigrams and trigrams used in the sample of women-related amendments.<sup>14</sup> Looking at Panel A, the most frequent trigram is “equality wom men” which appears 292 times in the sample of amendments and the most frequent bigram is “wom men” which appears 1092 times. Most of the

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<sup>12</sup>In French, these keywords are respectively “*femme*”, “*genre*” and “*sexe*”. These keywords are stemmed such that the word “women” becomes “wom” to capture the singular and plural forms but also words such as womanly.

<sup>13</sup>This procedure is similar to the topic analysis in [Gentzkow et al. \(2019\)](#).

<sup>14</sup>Table B5 displays the ranking of trigrams/bigrams depending on their odds ratio.

expressions are directly related to women’s issues containing the word “women” associated with “equality”, “professional” or “violence”. It strongly suggests that these amendments are used to improve gender equality. The only exception concerns part-time work which is associated with women’s issues, because legislators tend to regulate the use of part-time work for women since they are significantly more likely to be in this position than men. Additionally, the expression “fight against” is among the most frequent bigrams as it is often used before an expression related to gender inequality.

*Manual Screening.* For the main topic related to women’s issues, I also manually screened all the 3,905 amendments in order to determine the share of amendments falsely classified. I found that 86% of amendments are unambiguously women-related. This rate is high and comparable to other studies using dictionary-based approaches (for instance [Baker et al., 2016](#)). The wrongly classified amendments often refer to jobs mainly occupied by women (such as prostitution). A small share (about 5%) also includes false matches that are difficult to identify.<sup>15</sup> For instance, some amendments refer to citizens as “men and women” in a general statement. Additionally, I also found that nearly 99.3% of these amendments are in favor of measures striving to achieve gender equality. This could be because it is politically difficult to defend a policy that is against more policy effort on women’s issues.

## 3 Evidence from the Lower House

### 3.1 Empirical Setting

#### 3.1.1 Election System and Gender Quotas for the Lower House

*Electoral System* - The elections for the Lower House (legislative elections) occur every 5 years in France and aim at electing 577 representatives (*Députés* in French) in 577 constituencies.<sup>16</sup> Parliamentarians are elected by direct universal suffrage.

The election system follows a two-round plurality voting rule system. To be elected in the first round, an individual must obtain more than 50% of the votes and 25% of the registered citizens. If these conditions are not met, a second round is organized a week later and the two first-ranked candidates are automatically qualified for it. Additional candidates qualify only if their first-round vote share was higher than 12.5% of the reg-

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<sup>15</sup>Additionally, I also attempted to quantify the share of false negatives. I manually screened a random sample of 1,000 amendments. I found that about 4% of them could be related to women’s issues. Additionally, nearly 6% were related to family or child issues which are sometimes considered as more closely related to women’s issues (See for instance [Gago and Carozzi, 2020](#)).

<sup>16</sup>In 2012, a redistricting took place to reflect France’s changing demographics. 33 constituencies were replaced by new ones leading the number of unique constituencies in the sample to be higher than 577.

istered citizens. To be elected in the second round, a relative majority is sufficient and the candidate who receives the highest vote share is the winner.

*Gender Quotas* - Starting in 2002, financial incentives were introduced to force political parties to nominate women. If a political party does not nominate 50% of women, its public funding will be reduced proportionally to the gender gap in nomination. Between the 2002 and 2012 elections, the share of female legislators increased from less than 10% to 27% (see [Lippmann, 2021](#) for an evaluation of this policy).

### 3.1.2 Methods

To identify the effect of the legislator’s gender, I mainly use two complementary specifications in order to obtain both a comprehensive view of what happens in the Lower House and to disentangle the interests of legislators from those of constituents. The results must be seen in the context of a quota although these specifications do not directly exploit the design of the Lower House quota. Since new female candidates as well as female incumbents may have been endorsed because of the quota, it is not possible to identify women who were elected because of the quota. The first empirical specification is the following:

$$Y_{ict} = \beta W o m a n_{ict} + \gamma X_{ict} + \epsilon_{ict} \quad (1)$$

Where  $i$  is the subscript for the individual level,  $c$  for the constituency level and  $t$  for the term. Since there is only one legislator per district, the observation level is at the legislator-term level.  $Y_{ict}$  is the outcome variable. When using unsupervised methods, the outcome is the share of amendments produced on a given topic as with these methods, more than 95% of legislators are found to be associated with all topics. When using dictionary-based methods, the outcome is a dummy equal to 1 if the legislator has initiated at least one amendment on the topic of interest. In this case, I focus on the extensive margin since for some topics, such as women’s issues, about 60% of legislators have never initiated an amendment.  $W o m a n_{ict}$  is the main variable of interest. It is a dummy that equals 1 if the legislator is a woman.  $X_{ict}$  includes other control variables, namely the age at the beginning of the term, the political inclination (left or right-wing)<sup>17</sup>, the incumbency status, the margin of victory at the election, the female labor force participation rate in the constituency and term fixed-effects.

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<sup>17</sup>Since about 91% of the legislators are either from the main left-wing (*Parti Socialiste*) or right-wing (*Union pour un Mouvement Populaire - UMP*), I control by a left vs right dummy that allows me to incorporate minor parties instead of political parties fixed-effects. The allocation of parties to the left vs right-wing is described in Section [C.2](#).

While this specification is useful to obtain a comprehensive view of gender specialization in the Lower House, it does not disentangle what stems from constituents’ demands from the parliamentarians’ interests. Since women could be expected to be elected in more gender-friendly places which also demand more gender equality, estimates of  $\beta$  from Equation 1 could capture both the effect of the legislator’s gender and the effect of constituents’ preferences, unobservable in the data.

To disentangle these two effects, in the preferred specification, I use a regression discontinuity design exploiting mixed-gender close races.<sup>18</sup> During these elections, women run against men and there are cases where a candidate of either sex wins by a narrow margin. In such cases, victory can be considered as random since unpredictable random events affect the electoral outcomes (Lee, 2008) and therefore provide exogenous variations for the sex of legislators. Empirically, the running variable is the vote margin between the first woman and the first man during the last round of the election.<sup>19</sup> Providing that confounders behave continuously around the victory threshold and that candidates cannot manipulate their score, this strategy causally identifies the impact of female legislators. Formally, the third empirical specification is:

$$Y_{ct} = \alpha + \beta \mathbb{1}\{X_{ct} > 0\} + \gamma f(X_{ct}) + \epsilon_{ct} \quad (2)$$

Where  $c$  is the subscript for the constituency level and  $t$  for the election term.  $X_{ct}$  is the running variable.  $\mathbb{1}\{X_{ct} > 0\}$  is a dummy that equals 1 if the running variable is positive, i.e. if a woman won the seat.  $f(X_{ct})$  is a polynomial interacted with  $\mathbb{1}\{X_{ct} > 0\}$ . This equation is estimated on a narrow margin around the elimination threshold weighting observations with a rectangular kernel. The reference bandwidth is selected following the approach of Calonico *et al.* (2014) depending on the vote margin.<sup>20</sup>

Table C1 provides descriptive statistics on the characteristics and activity of Lower House legislators. The sample includes all the legislators who were elected and effectively

<sup>18</sup>As a robustness check, I also add fixed-effects at the constituency level to control for unobservable time-invariant characteristics. Yet, factors simultaneously determining the election of a woman and the policy decisions taken by the legislator, such as constituents’ attitudes towards women’s issues, could vary over time at the level of the constituency and undermine the causal interpretation of the fixed-effect estimates.

<sup>19</sup>This method is regularly used in the literature investigating the impact of female politicians (see Ferreira and Gyourko, 2014, Bhalotra and Clots-Figueras, 2014, Brollo and Troiano, 2016 or Bhalotra *et al.*, 2017). If the woman wins, the running variable is positive and if the man wins, this variable is negative. For example, if, the first woman obtains 55% of the votes and the first man 45%. Then, the running variable would be equal to 10 percentage points. In Section C.7, I replicate the analysis on a sub-sample of races where the first man and woman are also the first two ranked candidates.

<sup>20</sup>To probe the robustness of the results, I also fit a second order polynomial in the running variable on the entire sample and use the IK bandwidth (Imbens and Kalyanaraman, 2012). The bandwidths were selected with the Stata packages *rdrobust* and *rdob*.

served as a legislator.<sup>21</sup> The sample contains 1,663 legislators over the 2002-2017 period. About 19% of the legislators are women. They are about 55 years old. They co-sponsor about 1,038 amendments and initiate 124 per term, out of which women’s issues represent 2% on average.

### 3.1.3 Internal Validity Tests

The validity of the regression discontinuity design hinges on two assumptions: absence of manipulation of the vote margin and continuity of potential confounders at the cutoff.<sup>22</sup> Figure 1 provides evidence on the absence of manipulation in the running variable around the elimination threshold. Visually, we observe that male candidates win more often against female candidates but, importantly for the identification strategy, there is no evidence of a discontinuity in the density of the vote margin. The statistical tests (McCrary, 2008 and Cattaneo *et al.*, 2018) do not reject the null hypothesis of no manipulation. This could be expected as manipulation would require either electoral fraud, which is extremely rare in France, or the prediction of election results with extreme accuracy, which is unlikely because there are usually no polls in these constituencies.

To test the continuity assumption of potential confounders, I estimate Equation 2 using a set of covariates as outcome variables. If the setting is valid, there should not be any discontinuity in these covariates. Four sets of covariates are considered: one representing election characteristics (number of candidates, number of registered voters, abstention rate and invalid vote rate, political inclination of the constituency), one representing demographic characteristics (total population size, total male population, total female population, share of women in the population, share of working women, share of working age people, unemployment rate), one representing preferences for women (female vote share in T and T-1) and one representing the lagged main outcome (initiation of an amendment on women’s issues in T-1). As shown in Table 2, the continuity assumption seems verified as there is no significant jump at the cutoff for each of these covariates (the relevant graphs are in Figures C2, C3, C4 and C5). Therefore, there is no evidence that the results are driven by any other characteristic than the gender of the legislator elected.

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<sup>21</sup>After each election, about 20 legislators out of 577 are nominated at high-ranked positions and never occupy the position of legislator in Parliament.

<sup>22</sup>One drawback of the RDD specification is its external validity. I provide evidence on this question in Figure C6 and show that the close races are scattered throughout the territory. Additionally, in Figure C7, I show that the preferences for female politicians, measured with the female vote share, ranges from 20 to about 70%, which is comparable to other studies exploiting mixed-gender close races (for instance Bhalotra *et al.*, 2017 in India).

## 3.2 Results

### 3.2.1 Are Female Legislators Working on Different Topics Overall?

The analysis starts with a study of aggregate gender differences in lawmaking. The goal is to answer whether female legislators are working on different topics overall, without studying each topic separately. To that end, I use a Latent Dirichlet Allocation (LDA) model in order to decompose the entire set of amendments in a fixed number  $K$  of topics (see Section 2.2.1) and construct  $K$  outcomes  $Y_{kct}$  corresponding to the share of amendments produced on a topic  $k$  at time  $t$  by a legislator in constituency  $c$ .

I then estimate a system of  $K$  equations with identical explanatory variables and  $K$  different outcomes. I test for the joint significance of the coefficient related to the variable that equals one if the legislator is a woman over the entire range of equations. Formally, using the preferred specification of Equation 2 as an illustration, I estimate a system of seemingly unrelated equations, clustering standard errors at the district level, of the form  $Y_{kct} = \alpha_k + \beta_k \mathbb{1}\{X_{ct} > 0\} + \gamma_k f(X_{ct}) + \epsilon_{kct}$  for  $k = 1, \dots, K$  where  $K$  denotes the total number of topics. The explanatory variables remain the same for each equation but there are now  $K$  explained variables corresponding to the  $K$  topics found by the LDA. Then, I use a Wald test to determine whether the coefficients associated to  $\mathbb{1}\{X_{ct} > 0\}$  are jointly significant, i.e. whether  $\beta_1 = \dots = \beta_K = 0$ . If the test leads to the rejection of the null hypothesis, it would mean that the evidence suggests that female legislators work on different topics than men, *overall*.

Using  $K = 30$  topics, I obtain a test statistic  $\chi^2 = 58.3$ . As this is strictly greater than the 1% level critical value of 50.89 corresponding to a  $\chi^2$  distribution with 30 degrees of freedom, the conclusion of the Wald test is the rejection of the null hypothesis. This suggests that, as compared to male legislators, women are involved in different lawmaking activities overall. To demonstrate the robustness of this result, in Section C.3, I show that the findings are robust to using different total number  $K$  of topics for  $K = 30, 40, 50, 60$  and 70 topics and two different specifications that rely on Equations 1 or 2.

### 3.2.2 Gender Differences in Lawmaking by Topic

The purpose of this section is to study on which topic gender differences in lawmaking emerge. To that end, I use dictionary-based methods and classify the most frequent 10,000 words within the entire set of amendments into 27 categories (see Section 2.2.2) in order to construct 27 outcomes corresponding to the topics of interest.

Figure 2 displays the relative contribution of female legislators to each topic. Each row corresponds to a topic and each dot to the scaled probability that a woman will initiate at least one amendment on the given topic as compared to a man. The results

are displayed for the least (Pooled OLS, graph a) and the most restrictive specifications (RDD with the CCT bandwidth, graph b).

First, looking at the first row of both graphs, we see that women's issues constitute the key topic on which gender differences in terms of contribution are the most striking. Women are about twice as likely to initiate an amendment on women's issues and there is no other topic where differences are as large.

Second, besides women's issues, two topics seem to emerge as significantly more associated with female legislators: child and health issues, which are displayed in the second and fourth rows. Female legislators are respectively about 50% and 25% more likely to initiate at least one amendment related to child and health issues in the RDD specification. Coefficients are nonetheless more precisely estimated when it comes to child issues (both significant at the 5% level) than health issues (5% and 10% in the RDD specification).<sup>23</sup> The association of female legislators with health issues seems consistent with recent findings in the literature obtained in India ([Bhalotra and Clots-Figueras, 2014](#)). The other topics where women seem slightly more involved than men are migration and family issues. In terms of point estimates, these topics come respectively in 3rd and 5th position. Yet, the estimations are imprecise and the coefficients are not significant at standard significance levels (p-values of 0.187 and 0.221 in the RDD specification).

At the other end of the spectrum, we see that women seem to be respectively about 50% less likely to initiate at least one amendment related to military issues (p-value = 0.047). There is also suggestive evidence that female legislators are less involved in environmental issues although the estimations are less precise and the coefficient is not significant at standard significance levels (p-value = 0.102).

For the rest of the topics, where the estimates are less precise, it is interesting to look at the magnitude of the scaled effect which informs us on the general ranking of issues. Education issues, often associated with female legislators (see respectively [Thomas, 1991](#) and [Clots-Figueras, 2012](#)), come in 13th position for women (in the Pooled OLS specification). Conversely, agriculture and fiscal issues, sometimes associated with men ([Schwindt-Bayer, 2005](#)) come in 14th and 15th position, and exhibit very few differences.

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<sup>23</sup>When using a fixed-effects specification, the results are very similar to the pooled OLS specification. They are displayed in Figure [C11](#).



## 4 Comparison with the Upper House

### 4.1 Empirical Setting

#### 4.1.1 Election System and Gender Quota for the Upper House

*Electoral System* - Elections to the Upper House (Senate) aim at electing 348 representatives in 103 constituencies. Senators are elected by indirect universal suffrage where only locally elected politicians can vote.

Elections are staggered and a third of the Senate is renewed every 3 years, constituting three series depending on the election years (thereafter series 1,2 and 3).<sup>24</sup> Each series contains two types of constituencies, depending on the number of senators that have to be elected (which depends on the population size). In the first type of constituencies (thereafter type 1) where strictly more than 3 candidates are elected (52% of constituencies), the election system is one of proportional representation and follows a closed list system where votes are counted at the level of a list. Seats are attributed following a proportional rule where each candidate has a pre-determined election rank on a list and when the number of votes for a list increases, so does the number of elected candidates. In the second type of constituencies (thereafter type 2) where strictly less than 4 candidates are elected (48% of constituencies), the election system follows a two-round plurality voting system. It is similar to the election system of the Lower House except that for some constituencies 2 or 3 representatives are elected.

*Gender Quotas* - In 2000, a law was voted requiring constituencies where the election system was proportional representation, i.e. constituencies of type 1 which elect strictly more than 3 candidates, to comply with a gender quota. For each list, there had to be a strict alternation between men and women. If the first on a list was a man, the second had to be a woman and the third a man, and so on. For constituencies of type 2 which elect strictly fewer than 4 candidates, this law made no difference.

Each series had to comply with the quota during the first elections after the vote of the law. Therefore, series 1 which had elections in 2001 had to comply in 2001, series 2 which had elections in 2004 had to comply in 2004 and series 3 which had elections in 2008 had to comply in 2008. For each series, only the constituencies of type 1 which elect more than 3 candidates had to comply with the quota.

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<sup>24</sup>Figure D1 schematizes the election schedule and its evolution through time.

### 4.1.2 Methods: Difference-In-Differences

To identify the effect of the legislator’s gender, I exploit directly the design of the Upper House quota introduced in elections after 2000.<sup>25</sup> Since the data is available only from 2001 onwards, I focus on the two series for which I have information before and after their compliance with the quotas. It corresponds to series 2 and 3, renewed in 2004 and 2008. In each of these two series, there are two types of districts: districts of type 1 that have to comply with the quota because they elect strictly more than 3 candidates and districts of type 2 that do not have to comply with the quota because they elect strictly less than 4 candidates.

I use a difference-in-differences strategy where the treatment group consists in districts of type 1 and the control group consists in districts of type 2. The treatment date corresponds to the first election where a series has to comply with the quota (i.e. 2004 for series 2 and 2008 for series 3). The outcome is the share of amendments authored by a district on a topic. Formally, I pool the two series and estimate the following specification:

$$Y_{ct} = \alpha_0 + \alpha_1 Treatment_c + \alpha_2 Post_t + \delta Treatment_c * Post_t + \epsilon_{ct} \quad (3)$$

where  $c$  is the subscript for the constituency level and  $t$  for time.  $Treatment_c$  is a dummy that equals 1 if a constituency has to comply with the quota, i.e. elects strictly more than 3 senators.<sup>26</sup>  $Post_t$  is a dummy that equals 1 if the election year is after the compliance with the quota (2004 for series 2 and 2008 for series 3).  $\delta$  is the key coefficient representing the impact of the quota. I use two sets of outcomes. First, to measure the effectiveness of the quota,  $Y_{ct}$  corresponds to the number of female senators in a given district. Second, to study the lawmaking impact of the quota,  $Y_{ct}$  designates the share of amendments produced on a given topic for both unsupervised and dictionary-based methods, given that the unit of analysis is a multi-member constituency.

Over the period 2001-2017, Upper House parliamentarians produced 109,497 amendments. Table D1 provides descriptive statistics at the district level. On average, 3 senators

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<sup>25</sup>One could think of using a RD design in a proportional system as in Folke (2014) to randomize the election of a woman by comparing districts where a woman was narrowly elected on a list to those where she narrowly lost. However, two issues emerge which are (i) a problem of statistical power as only 30% of districts (out of 72) use a proportional system (and elect about 50% of senators) and (ii) this would boil down to using the variation in the share of women elected from the quota as, over the 2001-2017 period, nearly 70% of female senators were elected after the introduction of quotas in districts targeted by the quota. For these two reasons, it appears more appropriate to exploit directly the setting of the quota.

<sup>26</sup>This binary treatment seems more appropriate than a continuous treatment that would consist in the distance between the share of women before the introduction of quotas in a district at the party level and the threshold of 50% of women because nearly 75% of districts targeted by the quota did not have a single woman elected before their introduction.

are elected per district. They are older than Lower House legislators (59 vs 54 years old) and about 12% are women. Each district produces about 566 amendments per term on average, out of which 1% are women-related.

The causal interpretation of the difference-in-differences estimates relies on the common trend assumption. In this context, it assumes that the difference in terms of lawmaking activity between districts targeted by the quota and those that are not would have remained the same, absent the introduction of the quota. To probe evidence in favor of this assumption, it would be ideal to show that the lawmaking activity of the two types of districts followed the same trend before the introduction of quotas. Yet, given that the lawmaking data only start one period before the introduction of quotas, I cannot directly test this assumption using this type of outcome. Instead, as a second-best, I use data on the number of female legislators per district (available on a longer time frame) to show that the gender composition of districts evolved similarly in the two types of districts before the introduction of quotas. This suggests that the mechanism which is supposed to drive the results, i.e. the number of female legislators per district, was following a common trend before the introduction of quotas.<sup>27</sup>

## 4.2 Results

### 4.2.1 Impact of the Quota on the Election of Women

In order to assess the effectiveness of the quota, I begin by analyzing its impact on the number of female legislators per district. Figure 4 displays the evolution of the number of female legislators per constituency in the two types of districts (targeted and untargeted by the quota) for each election. Given that the elections are staggered, the results are presented by pooling elections depending on their date with respect to the introduction of gender quotas.<sup>28</sup> Before the introduction of the quota, we observe that the number of female legislators per constituency was respectively about 0.5 and 0 in districts targeted by the quota and those that are not. Additionally, the difference between the two types of districts seemed to remain stable over time.<sup>29</sup> Following the introduction of the quota, this number rose to about 2 in districts that had to comply with the new law while it increased mildly to less than 0.5 in the other type of district.

Table 3 quantifies the jump in the number of female legislators due to the introduction

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<sup>27</sup>Additionally, in Figures D4 and D5, I use data from the 1990, 1999, 2005 and 2012 French censuses to show that the share of women in the population and the unemployment rate at the district level, which could have both influenced the legislation evolved in parallel in the two types of districts.

<sup>28</sup>For instance, the elections occurring in 1995 and 1998 are pooled together since they are the last elections before the introduction of gender quotas for each series.

<sup>29</sup>Figure D3 confirms this visual interpretation by testing whether the evolution of the difference is statistically significant.

of the quota. The pre and post-period are pooled in order to obtain an aggregate measure of the increase of women due to the quota that can be used to put in perspective the impact on the lawmaking activity found in the next section. The three columns use different specifications pooling the period after the introduction of the quota, according to the presence of time and constituency fixed-effects. Overall, it appears that the quota has increased the number of female senators elected per constituency by 1.13. In column 1, looking at the coefficient related to  $Treatment * Post$ , the coefficient is equal to 1.13 and significant at the 1% level. When constituency and time fixed-effects are added, in columns 2 and 3, this increase remains stable.<sup>30</sup> Therefore, the following results should be interpreted in the context of a quota electing 1.13 additional woman per district with a counterfactual of 0.24.

#### 4.2.2 Impact of Gender Quotas on Lawmaking

*Unsupervised Methods* - I now turn to the analysis of authorship of amendments. As for the Lower House, I start by asking whether districts targeted by the quota changed their lawmaking activities and started working on different topics overall. To answer this question, I use the  $K$  topics found by the LDA model to construct  $K$  outcomes of interest corresponding to the share of amendments a district produces on a given topic. Then, I replicate the empirical strategy outlined in Section 3.2.1. It consists in estimating a system of  $K$  equations (relying on the specification of Equation 3 and clustering standard errors at the district level) using  $K$  different outcomes and testing the joint significance of the coefficient related to the difference-in-differences estimates ( $Treatment_c * Post_t$ ).

Using  $K = 30$  topics, I obtain the test statistic  $\chi^2 = 76.03$ . Therefore, the conclusion of the Wald test is to reject the null hypothesis that the coefficients are not jointly significant (p-value < 0.01). This suggests that districts targeted by the quota are working on different topics overall. Moreover, in Table D4, we observe that the results are robust to using different numbers of topics for  $K = 30, 40, 50, 60$  and  $70$ .<sup>31</sup>

*Dictionary-Based Methods* - Figure 3 displays the results related to the impact of the quota on each of the 27 topics computed with the dictionary-based methods. To ease comparisons between the two Houses, graph (a) corresponds to the RDD results in the Lower House and graph (b) to the difference-in-differences results obtained in the Upper House.

First, consistently with the Lower House, I find that the key topic with the strongest gender differences is women’s issues. The quota led to a 200% increase in the share of

<sup>30</sup>In the Appendix Table D3, alternative measures of the political representation of women are considered (share of women and at least one woman per constituency). The quota had an unambiguous positive impact on all these measures.

<sup>31</sup>In Figure D6, I also display the impact of the quota on each of the 30 topics.

amendments produced on this topic when the effect is scaled to the activity of districts that did not comply with the quota.<sup>32</sup> As for military issues, which were found to be negatively associated with women in the Lower House, the coefficient is negative suggesting that districts impacted by the quota could have decreased their share of amendments produced on this topic. Yet, the fact that the coefficient is not significant at standard significance levels (p-value = 0.114) does not allow to conclude definitively on the direction of the effect. Finally, as in the Lower House, the quota had little if no impact on a vast range of topics such as business, agriculture, economics or to a lower extent educational issues.

Second, we observe some suggestive evidence of inconsistent findings between the two Houses. In particular, secondary topics on which women seemed to be more active in the Lower House such as child and to a lower extent health issues do not seem to be impacted by the quota. For these topics, the point estimates are negative. Yet, given the large standard errors, the estimations remain imprecise and do not allow to conclude statistically on a different effect between the two Houses.

## 5 Additional Robustness

### 5.1 Multiple Testing Issues

It could be questioned whether the results are driven by multiple testing issues, whereby the probability of false positives increases as the number of outcome variables increases. To adjust the p-values to the number of hypotheses tested, one could think of using corrections in the spirit of the Bonferroni one. The issue with this type of correction is that it can become too stringent when the tests are not independent (Perneger, 1998, Cribbie, 2007, Harvey *et al.*, 2016). For instance, in the extreme case where all the tests are the same (correlation = 1), adjusting the p-values become irrelevant. In the context of testing gender differences in lawmaking, there are strong reasons to believe that tests are not independent as legislators may be interested in closely related topics, and an increased activity on a topic can be done at the expense of a lowered activity on a different topic.

In the presence of correlations, the statistics literature has argued for the use of bootstrap-based permutation tests (Westfall and Young, 1993, Ge *et al.*, 2003). They consist in exchanging labels randomly within the data a large number of times in order to build an empirical distribution for the pool of test statistics against which the one

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<sup>32</sup>Formally, the scaled effect corresponds to the coefficient  $\delta$  of Equation 3 divided by the average share of amendments produced on a topic by districts that did not have to comply with the quota.

obtained with the real sample is compared to. Their main advantage is that they take into account the correlation structure in the data without any distributional assumption. For this reason, they are considered as the “gold standard” to adjust for multiple testing issues when tests are not independent (Conneely and Boehnke, 2007, Han *et al.*, 2009).<sup>33</sup>

I perform two types of tests. The first type consists in permuting the amendments to build counterfactual outcomes. For each of the 27 topics in the two Houses, I randomly drew with replacement 1,000 samples of amendments of equal size to the sample used in the main regression. Then, I replicated the analysis in order to obtain 1,000 T-statistics and compared these statistics with the ones obtained with the main dictionaries. The second type of test consists in permuting the treatment (gender in the Lower House and type of district in the Upper House) while keeping its proportion within the population stable. As in the first type of test, this exercise is performed 1,000 times to obtain the related T-statistics. The results are displayed in Figures E1 and E2. In a nutshell, they show that it is unlikely to reproduce the results by chance. For instance, for women’s issues, less than 0.3% of the random samples provide t-statistics larger than the one obtained on the sample used for the analysis in the Lower House. It therefore suggests that the results are not driven by wrongly classified amendments, nor by multiple testing issues.

## 5.2 Alternative Outcomes and Dictionaries

*Dummy, count and share variables* - The main outcomes used in the analysis relying on dictionary-based methods were respectively a dummy variable that equals 1 if the legislator had initiated an amendment on a given topic in the Lower House and the share of amendments on a topic in the Upper House. In this section, I replicate the results on the topic of women’s issues using four different outcomes: the raw count, a dummy, the share, and an inverse hyperbolic sine transformation of the count of amendments on a given topic. The results are displayed in Tables E1 and E2 for respectively the Lower House and the Upper House. Overall, we observe that the results are robust to using these different outcomes, although the precision of the estimates may vary. Additionally, I also study the distributional effect of female legislators on women’s issues in Figure E3 and show that women are significantly more likely to be among the top initiators on the topic of women’s issues.

*Unlabeled Amendments* - The dictionary-based methods attributed a topic to about 90% of all amendments. One could wonder whether there exists gender differences in the initiation of the remaining 10% - thereafter unlabeled amendments - which may contain

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<sup>33</sup>They are particularly used in genetic association studies which regularly face multiple testing issues (see Ge *et al.*, 2003).

relevant amendments. To study this question, I estimate the impact of electing a female legislator (Lower House) and gender quotas (Upper House) on the initiation of unlabeled amendments. The results are displayed in Tables E3 and E4. Overall, we do not observe any significant gender differences in the initiation of these unlabeled amendments. I also re-estimated the main specifications by controlling for the share of unlabeled amendments produced by a legislator/district. The results remain essentially unchanged (See Tables E5 and E6).

*Removing False Positives and Mentions of Specific People* - Finally, for the dictionary of women’s issues, I also studied how the results vary when removing amendments falsely categorized within a category and those that may be categorized within this category because they mention specific women. The results are displayed in Table E7 and E8. They are essentially similar to those including these two types of amendments.

## 6 Mechanisms

### 6.1 Are Women More Active Overall?

The previous results indicate that there exists gender differences in lawmaking, where female legislators seem to initiate more women-related amendments. A potential reason explaining this result could be that female legislators are more active and produce more amendments overall. If this was true, it would imply that gender differences in lawmaking would not be the consequences of gender differences in priorities but rather gender differences in the overall level of activity. This mechanism could exert a stronger influence in the Lower House where the outcome was a dummy variable corresponding to the extensive margin of amendments’ initiation (when using the dictionary-based methods).

To provide evidence on this mechanism, I study gender differences in the level of activity. The results are displayed in Table 4 (the relevant graphs are in Figure F1). In Panel A, the outcome is a dummy that equals 1 if the legislator has initiated at least one amendment and, in Panel B, the outcome is the number of amendments initiated. Each column corresponds to a different specification.

In Panel A, we observe limited gender differences in amendments’ initiation. First, the coefficients are not statistically significant in five specifications out of six. Additionally, the magnitudes of the effects remain close to zero. In the main RDD specification using the CCT bandwidth (column 5), the magnitude of the coefficient suggests that women could be about 5 p.p. more likely to initiate at least one amendment which represents a 6% increase, as compared to the average probability of men to initiate at least one amendment (about 85%).

In Panel B, the pattern is more nuanced as the coefficients are less precisely estimated. Although the coefficients are not statistically significant, the point estimates range from -29.55 (fixed-effects specification) to 13.18 (RDD with half the CCT bandwidth) and are equal to -9.45 in the preferred RDD specification using the CCT bandwidth.

Overall, while the estimates do not suggest that there are gender differences in overall activity, their lack of precision does not allow to completely rule out this mechanism. Therefore, I replicate the main results in on the restricted sample of legislators that initiate at least one amendment. The results are displayed in Figure F2 and remain essentially similar suggesting that the potential gender differences in the overall level of activity are unlikely to explain the results.

## 6.2 Are Gender Differences in Lawmaking Driven by Characteristics Correlated with Gender?

The gender of politicians is often correlated with other characteristics. For instance, in the Lower House, women elected in mixed-gender close races are younger than men but also more likely to be elected for the first time and to be affiliated with a left-wing party.<sup>34</sup> Could these differences in characteristics drive the results?

To investigate this channel, I replicate Figure 3 adding controls related to the age, political orientation (left or right-wing), incumbency status and past occupation (12 categories).<sup>35</sup> The results are displayed in Figure 5. We observe that the estimates are essentially similar when controls are added and that some results are more precisely estimated, especially the impact of the quota on military issues in the Upper House (p-value = 0.066 with controls and 0.114 without controls).

To push further the analysis of the influence of these characteristics, I also studied the heterogeneity of the results related to women's issues over three characteristics: political inclination, age and incumbency. The results are displayed in Table F2. Overall, I find weak evidence of an heterogeneous response. The estimations suggest that incumbent women could contribute more to this topic than inexperienced ones, yet the coefficient remains imprecisely estimated and significant only at the 10% level.

Arguably, these findings do not rule out the possibility that unobservable characteristics differ across the two sets of legislators. Yet, the fact that the estimates are almost identical when adding these control variables suggests that the influence of other characteristics correlated with gender on lawmaking priorities seems limited.

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<sup>34</sup>See Table F1 for a balance test on a range of individual characteristics of politicians elected in mixed-gender close-races.

<sup>35</sup>In the Lower House, these controls are added at the individual level given that constituencies elect only one individual. In the Upper House, I compute the mean at the district level given that constituencies elect several senators.



## 6.3 The Contribution of Female Legislators to Women’s Issues

The analysis provides consistent evidence across the two Houses that female legislators contribute more to women’s issues. This section attempts to understand why.

### 6.3.1 What Lies Behind Identity?

In a standard median voter model (Downs, 1957), politicians’ policies should converge towards the preferences of the median voter. Therefore, if women are elected in constituencies which are more gender-equal and more demanding on women’s issues, female legislators should produce more amendments on these topics. While this mechanism is certainly present when we look at all the legislators in Parliament, it is much less influential when the analysis is restricted to districts with exogenous variations in the identity of the legislator. Both empirical strategies in the two Houses delivered results linking legislators’ gender to large differences in terms of involvement in women’s issues. This suggests that constituents’ preferences cannot fully explain the results and paves the way for identity-based lawmaking.

But what lies behind identity? Two mechanisms could be at play. On the one hand, female legislators could be intrinsically more interested in women’s issues and eager to contribute to this topic.<sup>36</sup> On the other hand, political parties or groups of legislators may behave strategically and anticipate that women-related policies led by women appear to be more credible and are therefore more likely to pass.

To provide evidence on the individual interest channel, I focus on the Lower House as the unit of observation is at the individual level and the number of observations is far higher than in the Upper House. The idea is to study cases where legislators’ amendments are unlikely to stem from the will of political parties. The first case consists of sole-authored amendments. By definition, the involvement of legislators in such amendments cannot be explained by a desire to add political weight and increase the success rate of an amendment since there is only one author and no co-sponsors. The second case exploits the outcome of amendments from majority legislators. Over the period 2002-2017, there were two main parties in Parliament (right- and left-wing) which have successively had a majority. In practical terms, a majority in Parliament means that the party can pass any bill and amendment. It also increases the likelihood that bills already reflect parties’ interest and lessens the incentives to produce amendments. Therefore, rejected amendments from a majority legislator provide an interesting case in which we are more likely to observe the individual interest of legislators than in the case of regular

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<sup>36</sup>As I cannot directly observe preferences, the expression “individual interest” is used to designate the mechanisms acting at the individual level which encompass preferences but also self-selection, targeting a specific group of voters, or a feeling of fulfilling a duty.

amendments.<sup>37</sup>

I investigate gender differences in the samples of women-related amendments that are (i) sole-authored, (ii) from a majority legislator and rejected by the majority, and (iii) both sole-authored and from a majority legislator and rejected by the majority. Figure 6 displays the results. The vertical axis represents the scaled effect and the horizontal axis the three cases described above plus the initial case without restriction on the origin or the outcome of the amendment. Looking at the Pooled OLS specification, it can be observed that as we move to cases where the influence of the party is likely to decline, female legislators are increasingly likely to initiate women-related amendments. The scaled effect goes from 100% for all amendments to 300% for sole-authored amendments originating from majority legislators and ultimately rejected by the majority. Turning to the fixed-effects and the RDD specifications, we observe a similar pattern: point estimates increase but, because of the reduced sample sizes, the standard errors also increase and it is more difficult to conclude on the relative size of the effects. Nevertheless, the effects do not seem to decrease in the three specifications which suggests that the the greater involvement of female legislators on women’s issues cannot be entirely explained by political party influence and is likely to partly stem from the individual interest of legislators.

### 6.3.2 Are the Amendments Consequential?

As the previous outcomes are related to the quantity of amendments, and not their importance, one could argue that women have been submitting a greater number of amendments on certain topics, without aiming at bringing significant changes to the law. To study whether female legislators produce more consequential amendments, I restrict the sample of women-related amendments to those that are likely to be more substantial using three different proxies for the importance of an amendment. The first proxy corresponds to amendments that are ultimately accepted and incorporated in the law. The second and third proxies are based on the motivation of the amendment. As explained in Section 2.2.2, legislators have the opportunity to defend and motivate why an amendment is important and should be adopted. I study amendments with (i) unique and (ii) without short motivations. The underlying idea being that a consequential amendment will likely have a substantial motivation.<sup>38</sup>

I study gender differences in initiation for each type of the above-mentioned amendments. The results are displayed in Figure 7. The vertical axis represents the scaled effect and the horizontal axis the cases presented above. In a nutshell, we observe that

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<sup>37</sup>In Section F.3.1, I discuss in more details each type of amendment and provide descriptive statistics on their use.

<sup>38</sup>I discuss and explain in greater details the methodology and relevance of these restrictions in Section F.3.4.

female legislators are significantly more likely than men to produce consequential amendments. The scaled effect related to the set of accepted amendments ranges from 200 to 350% in the preferred RDD specification. Additionally, we also observe that women are more likely to produce amendments that have a unique and long motivation. Finally, when superimposing the three restrictions, we see that women are again more likely to produce amendments accepted with substantial motivations. In that case, the average scaled effect ranges from about 200% in the pooled OLS specification to about 600% in the RDD specification. Therefore, the results suggest that gender differences persist and seem to increase (based on the point estimates) when amendments are more likely to be consequential, which suggests that the objective of female legislators is, at least partly, to produce significant changes in the law.

### 6.3.3 Additional Evidence from Legislators' Discretionary Funds

To complement the previous results, I also exploit an institutional feature of the 2012-2017 Lower House term. During this term, all legislators were granted a discretionary fund of 130,000 euros per year.<sup>39</sup> The use of these funds is interesting as it was entirely at the discretion of legislators who could attribute them to associations and local projects. Additionally, every expenditure had to be classified according to a pre-defined nomenclature which included one category entitled equality between men and women, likely to be the closest to women's issues. Therefore, an analysis of the destination of these funds is likely to portray the individual interests of legislators.

I exploit these data to build a dummy variable equal to 1 if the legislator has funded associations or projects related to women's issues. Using this outcome, I replicate the empirical strategy used in the Lower House setting. The results are displayed in Table 5 (the relevant graph is in Figure F5). We observe that, when a female legislator is elected by a narrow margin, the probability of her spending money on women's issues jumps by about 29-41 percentage points. Depending on the specification, this jump is significant at the 1% or 10% level. It holds across the entire sample of legislators, controlling for individual and constituency characteristics (column 1) and in the four usual specifications used for the RDD (columns 2,3, 4 and 5). Scaling this jump to the average for male legislators, it represents an increase in the probability of spending money on women's issues that ranges from 150 to more than 300%.<sup>40</sup> The scale of this effect is close to

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<sup>39</sup>During the previous terms, these funds were only available to a small subset of legislators and there does not exist a data set on their use.

<sup>40</sup>In Table F4, I quantify the surplus of fundings attributed to women's issues by using the raw amount as a dependent variable. Although the estimates are imprecise, they suggest that female legislators attribute about 10 to 15 additional thousands of euros to projects related to women's issues, as compared to their male counterparts.

the one obtained in the previous section on rejected amendments by majority legislators. Therefore, this bolsters the interpretation in terms of individual interest.

## 7 Conclusion

This article has combined text analysis with quasi-experimental variations to investigate gender differences in lawmaking in a context of gender quotas. In the Lower House, using a regression discontinuity exploiting mixed-gender close races, I found evidence of overall gender differences in lawmaking. I showed that women’s issues constitute the key topic on which female legislators are most active while men seemed more involved in military issues. In the Upper House, using a difference-in-differences strategy exploiting the introduction of a quota, I found consistent evidence that the lawmaking activity of districts targeted by the quota is significantly different from the one of districts that were not. I showed that the quota led to an increased activity on women’s issues. As for military issues, the quota seemed to have a negative impact on them but the estimations lacked the precision needed to conclude definitively on the direction of the effect. Studying the mechanisms, I provided evidence suggesting that the gender differences in lawmaking are not driven by the fact that women are more active than men, nor by other characteristics of legislators that are correlated with gender. Finally, I also gathered evidence consistent with the idea that the greater involvement of female legislators in women’s issues is partly due to their greater individual interest for this topic.

Methodologically, the main contribution of this paper is to exploit text data from Parliament to identify the topics of the legislation, along with quasi-experimental variations to randomize the gender of legislators. Exploiting text data overcomes limitations stemming from data on spending or public goods, which may not include the topics of interest. Future research could extend this methodology to other countries, settings and dimensions of politicians’ identity besides gender. It could also go one step further to study the direction of policy support on each topic by relying for instance on sentiment analysis methods or it could also use embedding models to measure the distance between a piece of text and a document of interest.

From a public policy perspective, these results have two consequences. First, they suggest that the gender of politicians can influence their action and lawmaking activities. This implies that the underrepresentation of women in politics is not innocuous in terms of policymaking and that correcting this imbalance through the introduction of gender quotas could lead to a shift in policymaking. Second, beyond gender, these findings question more generally the consequences of imbalances between the characteristics of politicians and those of the people they represent. More research is needed to understand

whether these imbalances matter for policymaking and whether correcting them would lead to public policies that better encompass the interests of groups of people who are underrepresented in politics.

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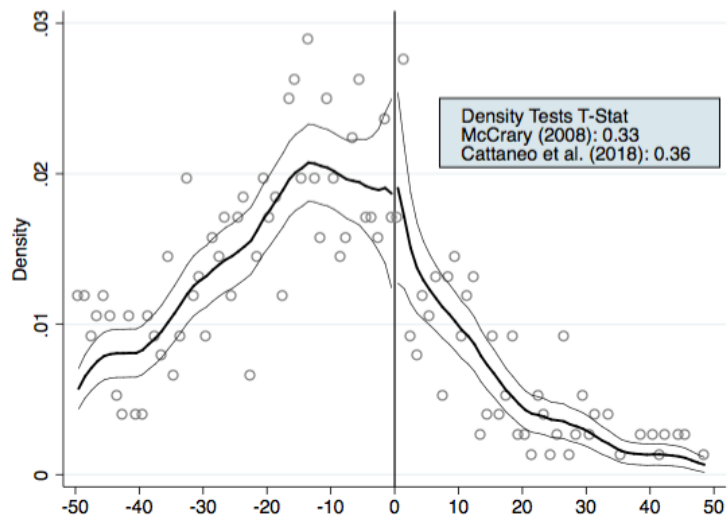
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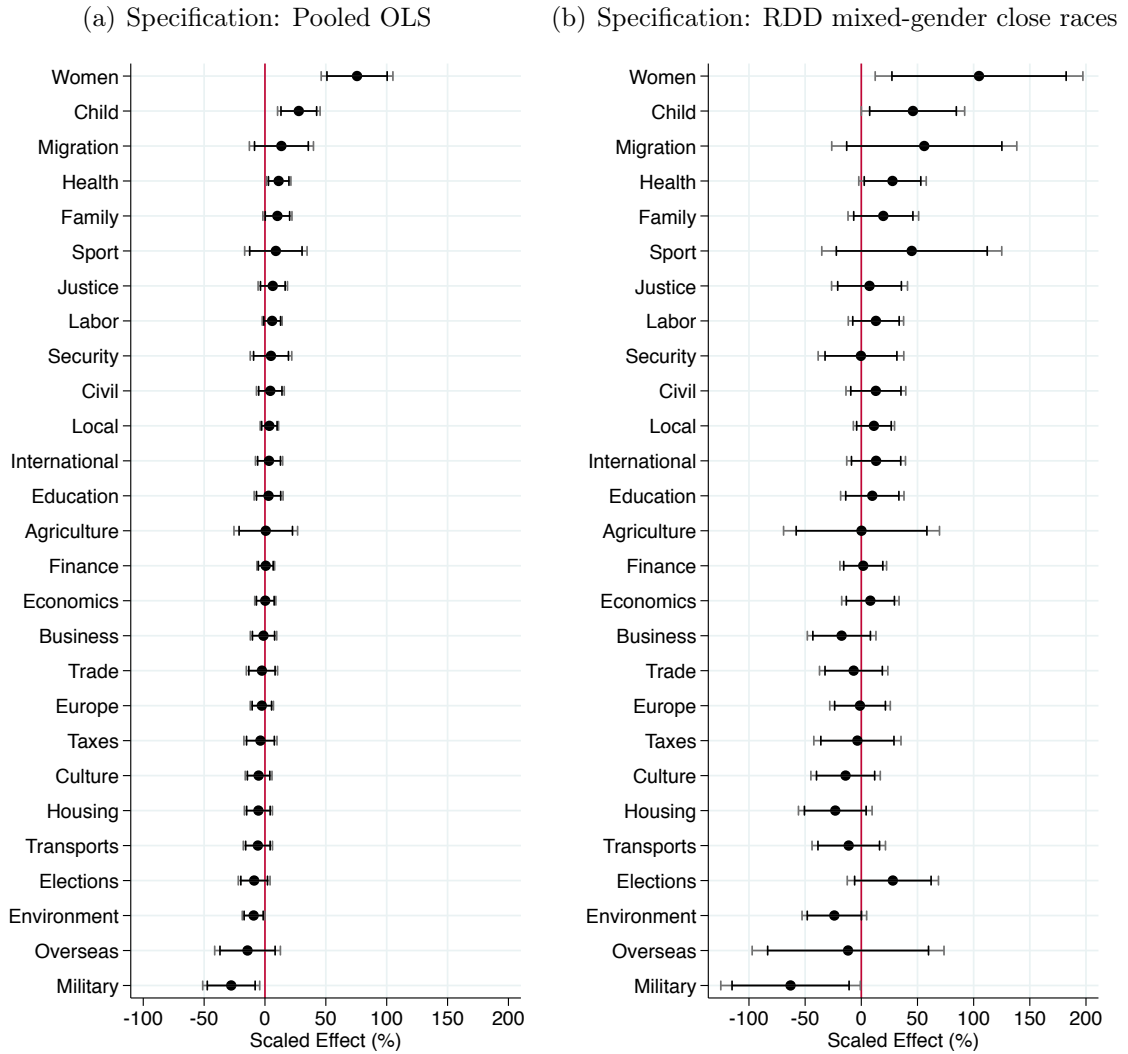
# Figures

Figure 1: Manipulation Test



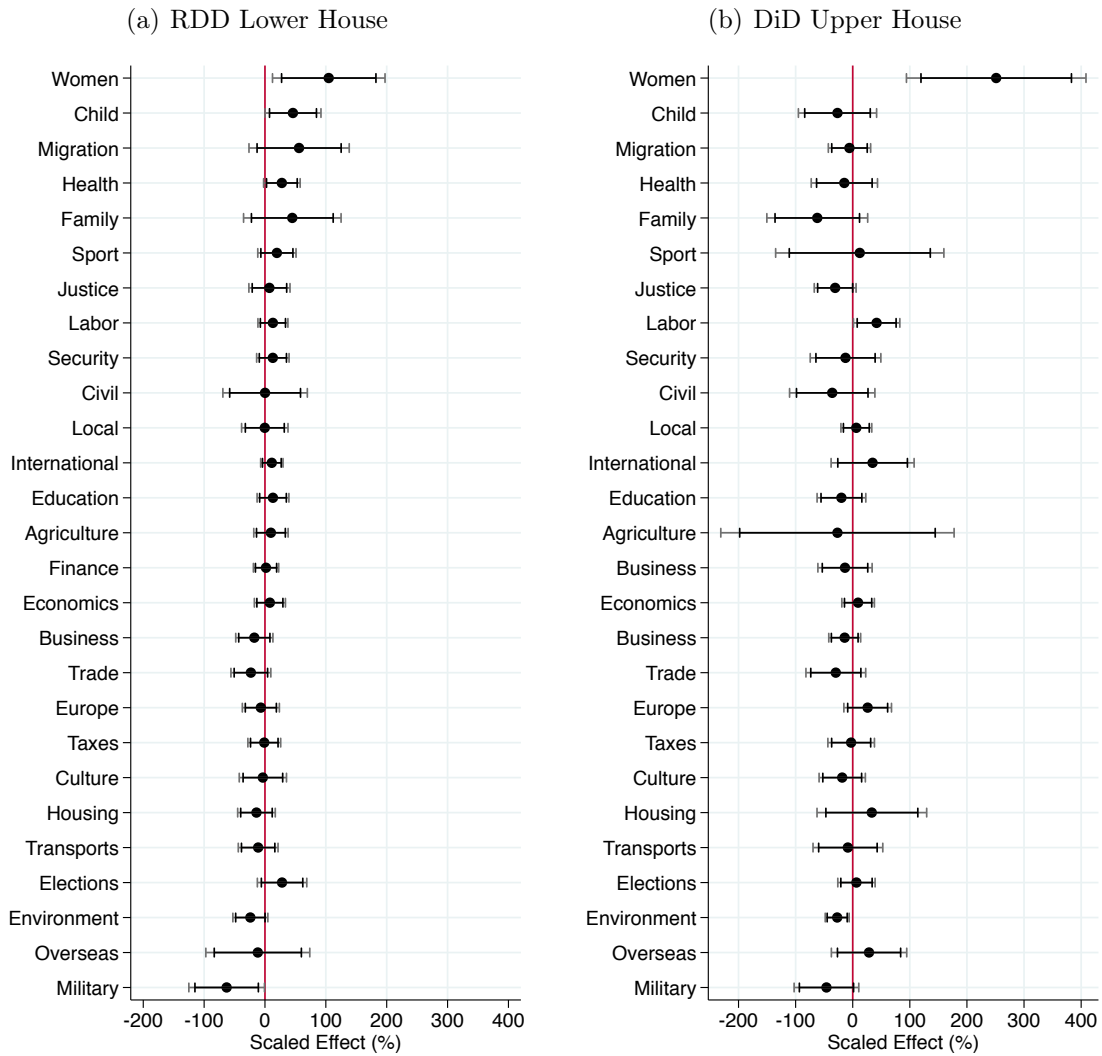
*Notes:* the data come from the 2002, 2007 and 2012 election results for the Lower House. The x-axis represents the vote margin between the first woman and the first man in a mixed-gender election. On the right-hand side of the vertical dashed line, a woman is elected and on the left-hand side, a man.

Figure 2: Gender Differences in Lawmaking in the Lower House



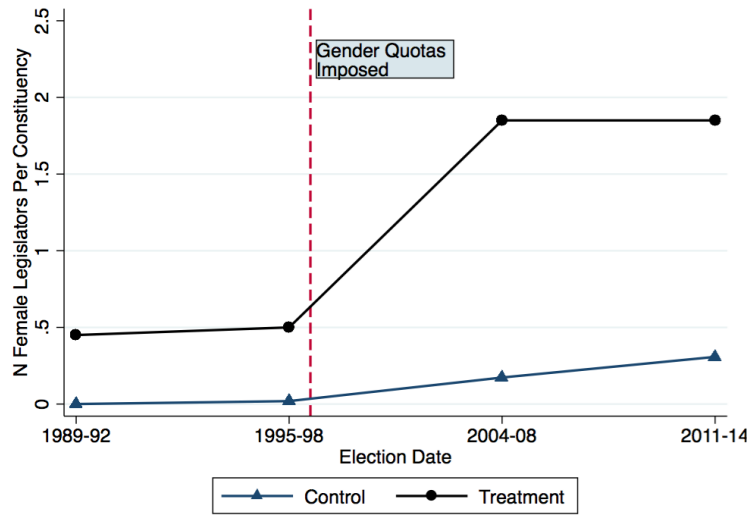
Notes: the data come from the Lower House over the period 2002-2017. Each row corresponds to a topic. The outcome is a dummy that equals 1 if the legislator initiates at least one amendment on the topic considered. Each dot represents the coefficient associated to the variable *Woman* divided by the average of male legislators (scaled effect). Confidence intervals are represented at the 95% and 90% levels. Graphs (a) and (b) respectively represent estimates from the pooled OLS specification and the RDD mixed-gender close race with the CCT bandwidth.

Figure 3: Gender Differences in Lawmaking Across the Two Houses



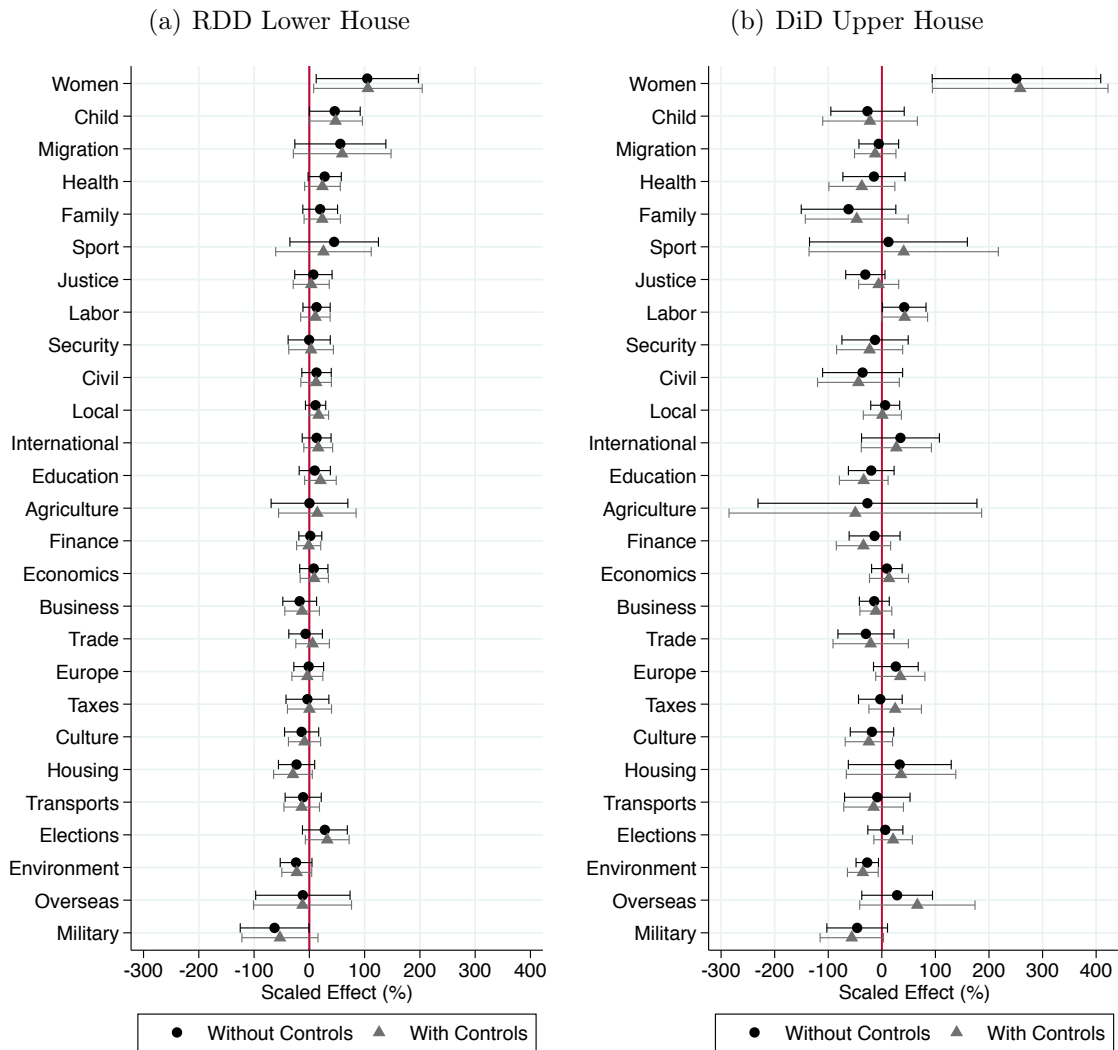
Notes: each row corresponds to a topic. Confidence intervals are represented at the 95% and 90% levels. In graph (a), the data come from the Lower House over the period 2002-2017. The outcome is a dummy that equals 1 if the legislator initiates at least one amendment on the topic considered. Each dot represents the coefficient associated to the regression discontinuity estimates (variable *Woman*) divided by the average of male legislators (scaled effect). In graph (b), the data come from the Upper House over the period 2001-2017. The outcome is the share of amendments produced by a district on the topic considered. Each dot represents the coefficient associated to the difference-in-differences estimates (variable *Treatment \* Post*) divided by the by the mean of the outcome in districts not targeted by the quota (scaled effect).

Figure 4: Impact of the Gender Quota on the Number of Female Legislators in the Upper House



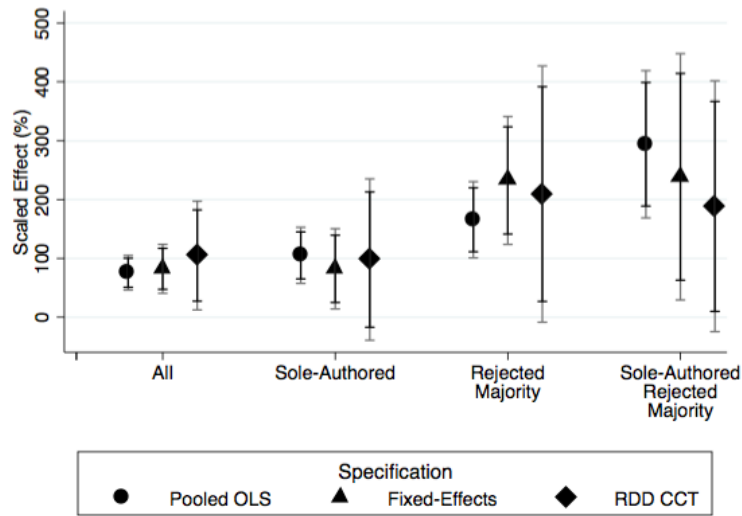
*Notes:* the data come from the election results of the French Upper House over the period 1989-2014. The y-axis represents the average number of female legislators elected per constituency. The x-axis represents the election dates. Circles and triangles respectively designate the average number of female legislators per constituency for those that have to comply with the quota and those that do not need to. The vertical red-dashed line corresponds to the date where gender quotas were introduced.

Figure 5: Are Gender Differences in Lawmaking Driven by Characteristics Correlated with Gender?



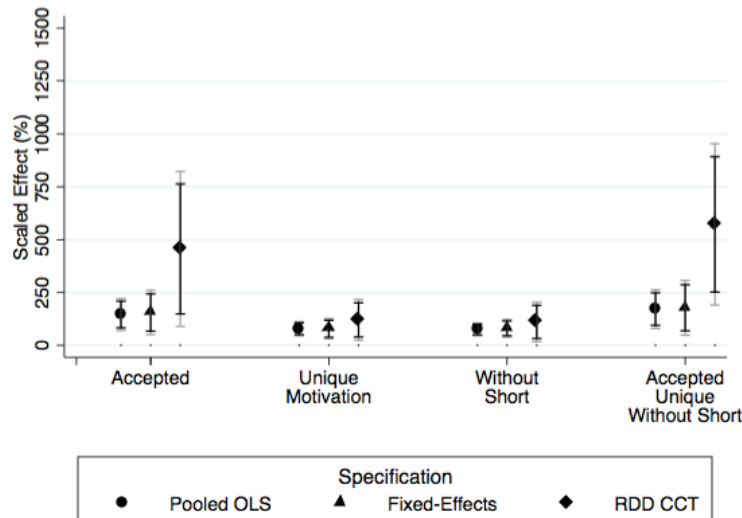
Notes: each row corresponds to a topic. Confidence intervals are represented at the 95% level. In graph (a), the data come from the Lower House over the period 2002-2017. Each dot represents the coefficient associated to the regression discontinuity estimates (variable *Woman*) divided by the average of male legislators (scaled effect). In graph (b), the data come from the Upper House over the period 2001-2017. Each dot represents the coefficient associated to the difference-in-differences estimates (variable *Treatment \* Post*) divided by the mean of the outcome in districts not targeted by the quota (scaled effect). Controls include age, political orientation (left or right-wing), incumbency status and past occupation (12 categories).

Figure 6: Investigating the Individual Interest Channel



Notes: the data come from the French Lower House over the period 2002-2017. The y-axis represents the coefficient associated to the variable *Woman* divided by the average of male legislators (scaled effect) in a regression where the outcome is a dummy that equals 1 if the legislator initiates at least one women-related amendment. Confidence intervals are represented at the 95% and 90% levels. Sole-authored designates the sample of sole-authored amendments (without co-sponsors). Rejected majority designates the sample of amendments ultimately rejected whose author is from the majority. Sole-authored Rejected Majority designates the sample of sole-authored amendments ultimately rejected whose author is from the majority.

Figure 7: Are the Amendments Consequential?



Notes: the data come from the French Lower House over the period 2002-2017. The y-axis represents the coefficient associated to the variable *Woman* divided by the average of male legislators (scaled effect) in a regression where the outcome is a dummy that equals 1 if the legislator initiates at least one women-related amendment. Confidence intervals are represented at the 95% and 90% levels. Accepted designates the sample of accepted amendments. Unique Motivation designates the sample of amendments that have a unique motivation. Without Short designates the sample of amendments without a short motivation.

## Tables

Table 1: Most Frequent Trigrams and Bigrams in the Sample of Amendments Related to Women’s Issues

(1)	(2)	(3)	(4)	(5)	(6)
		<i>Trigrams</i>		<i>Bigrams</i>	
Rank	N	Keywords		N	Keywords
1	292	equalit	wom men	1092	wom men
2	142	violenc	done wom	664	part time
3	125	worker	part time	573	men wom
4	100	professional	wom men	341	fight against
5	97	access	wom men	293	equalit wom

*Notes:* the data come from all the amendments produced in the French Lower House over the period 2002-2017. It is restricted to amendments identified as related to women’s issues with a dictionary-based method. These amendments contain at least one of the following words: “wom”, “sex” or “gender”. The word “wom” is the stem of words such as women or woman.



Table 2: Testing the Continuity Assumption

	(1) Discontinuity Estimate	(2) Control Mean	(3) Bandwidth Restriction	(4) N Observations
N Registered Voters	-368.056 (3421.465)	76387.4	13.04	315
Abstention Rate	-.545 (1.181)	39.3	11.91	287
Invalid Vote Rate	-.145 (.13)	2	16.18	388
Total Population	-935.812 (4430.921)	112301.5	19.59	441
Population Male	-731.9 (2224.377)	54414.4	18.9	435
Population Female	-170.523 (2238.119)	57924.7	19.17	439
Share Women Population (0-100)	.252 (.182)	51.5	13.01	311
Share Working Women (0-100)	-.819 (1.306)	63.5	20.83	470
Share Working Age Population (0-100)	.41 (.737)	64.4	14.05	335
Unemployment Rate (0-100)	.351 (.608)	9.1	13.75	330
Female Vote Share (0-100)	.554 (1.339)	46.3	8.74	213
Female Vote Share T-1 (0-100)	-3.581 (7.793)	27	9.63	233
Left Wing Constituency	-.037 (.115)	.4	9.86	237
Women-Related Amendment T-1	-0.017 (.09)	.15	16.6	297

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Lower House over the period 2002-2017. Standard errors clustered at the constituency level are given in parentheses. Each line corresponds to one dependent variable. Column 1 displays the discontinuity estimates, column 2 shows the mean of these outcomes when a man is elected within the bandwidth restrictions, column 3 displays the bandwidth restrictions and column 4 the number of observations. The model fits a local linear regression around the cutoff that allows for a break in the slope at the cutoff. The bandwidth is computed following the CCT approach.

Table 3: Impact of Gender Quotas on the Number of Female Legislators - Upper House

<i>Dep. Var.: N Female Legislators Per Constituency</i>			
	(1)	(2)	(3)
Treatment*Post	1.13*** (0.25)	1.13*** (0.30)	1.13*** (0.30)
Control Mean	0.24	0.24	0.24
F-Statistic	37.3	17.8	12.1
Time Fixed-Effects	No	No	Yes
Constituency Fixed-Effects	No	Yes	Yes
Observations	216	216	216
Constituencies	72	72	72

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Upper House over the period 2001-2017. Standard errors clustered at the constituency level are given in parentheses. The dependent variable is the number of female legislators per constituency. *Treatment* designates districts that had to comply with a gender quota. The “Control Mean” line designates the average number of female senators per district in those that do not have to comply with the quota.

Table 4: Gender Differences in Overall Parliamentary Activity - Lower House

Specification	(1) Pooled OLS	(2) Fixed Effects	(3)  Poly	(4) <i>Regression Discontinuity</i> LLR IK	(5) LLR CCT	(6) LLR CCT/2
<i>Panel A - Dep. Var. : At Least One Amendment Authored Per Term (1=Yes)</i>						
Woman (1=Yes)	0.01 (0.02)	0.04 (0.04)	0.06* (0.04)	0.03 (0.06)	0.05 (0.07)	0.08 (0.09)
Bandwidth Restriction			None	16.8	12.3	6.2
Observations	1663	1663	857	432	319	173
Constituencies	598	598	486	295	238	150
<i>Panel B - Dep. Var. : N Amendments Authored Per Term</i>						
Woman (1=Yes)	-22.37 (15.80)	-29.55 (23.87)	15.00 (26.82)	-17.25 (32.48)	-9.45 (41.78)	13.18 (53.56)
Bandwidth Restriction			None	22.8	12.2	6.1
Observations	1663	1663	857	525	316	172
Constituencies	598	598	486	346	236	149

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Lower House over the period 2002-2017. Standard errors clustered at the constituency level are given in parentheses. The dependent variable in Panel A is a dummy equals to 1 if the legislator authors at least one amendment and the number of amendments authored in Panel B. Controls in specifications of columns 1 and 2 include the age at the beginning of the term, the political inclination (left or right-wing), the incumbency status, the margin of victory at the election, the female participation rate to the labor market in the constituency and term fixed-effects. Controls in column 2 also include constituency fixed-effects. Controls in column 3 include a second order polynomial in the running variable. Specifications of columns 4, 5 and 6 fit a local linear regression around the cutoff that allows for a break in the slope at the cutoff using respectively the IK, the CCT and half the CCT bandwidth.

Table 5: Spending on Women's Issues - Lower House

<i>Dep. Var.: Legislator Has Funded Women's Issues (1=Yes)</i>					
Specification	(1)	(2)	(3)	(4)	(5)
	Pooled OLS	<i>Regression Discontinuity</i>			
		Poly	LLR IK	LLR CCT	LLR CCT/2
Woman (1=Yes)	0.29*** (0.05)	0.35*** (0.10)	0.41*** (0.14)	0.39*** (0.15)	0.39* (0.19)
Control Mean	0.18	0.16	0.12	0.13	0.13
Scaled Effect	154.8	215.6	328.7	299.4	297.4
Bandwidth Restriction		None	16.5	15.9	7.9
Observations	540	244	131	126	77
Constituencies	540	244	131	126	77

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Lower House over the period 2012-2017. Controls in specifications of column 1 include the age at the beginning of the term, the political inclination (left or right-wing), the incumbency status, the margin of victory at the election, the female participation rate to the labor market in the constituency. Controls in column 2 include a second order polynomial in the running variable. Specifications of columns 3, 4 and 5 fit a local linear regression around the cutoff that allows for a break in the slope at the cutoff using respectively the IK, the CCT and half the CCT bandwidth. The "Control Mean" line designates the outcome mean for the sample of male legislators. The "Scaled Effect" line designates the impact of female legislators scaled to the mean of male legislators (Treatment Effect/Control Mean).

# Appendix For Online Publication

## A Institutional Context

### A.1 Parliamentary Procedure

The work of parliamentarians mainly consists in producing and voting laws. Before becoming effective, a law takes the following path. First, a bill can be initiated either by the government or parliamentarians. Once initiated, a bill is examined by one of the Houses. Representatives then have the possibility to modify the bill by producing amendments. Once all the amendments have been examined, parliamentarians have to vote for the bill. If the bill is accepted, it is then passed to the other House which performs the same exercise. This procedure stops when a text is accepted in identical terms in the two Houses. If the two Houses fail to agree on the content of a text, the Lower House legislators have the final word.

### A.2 Statistics on Bills and Amendments

Table A1: Share of Bills Adopted by Origin

Term	Government	Legislators
1973 - 1978	86.47%	13.53%
1978 - 1981	88.41%	11.59%
1981 - 1986	95.22%	4.78%
1986 - 1988	81.03%	18.97%
1988 - 1993	92.26%	7.04%
1993 - 1997	87.5%	12.5%
1997 - 2002	81.25%	18.75%
2002 - 2007	73.1%	26.9%
2007 - 2012	81.2%	18.8%
2012 - 2017	75.5%	24.5%

*Notes:* the data come from the Lower House during the period 1973-2017. In the 2012-2017 term, 75.5% of the adopted bills originated from the government. Legislators designate elected politicians in Parliament.

Table A2: Share of Amendments Adopted by Origin

Term	Government	Legislators
2002 - 2007	13.1%	86.9%
2007 - 2012	19.9%	80.1%
2012 - 2017	6.7%	93.3%

*Notes:* the data come from the Lower House during the period 2002-2017. In the 2012-2017 term, 6.7% of the adopted amendments originated from the government. Legislators designate elected politicians in Parliament.

### A.3 Statistics on Votes and Party Discipline

Votes are only recorded and publicly available under certain circumstances when it is demanded by specific politicians or organisms such as the government or one of the leaders of the existing political groups. Otherwise, votes with a show of hands constitute the standard procedure.<sup>41</sup>

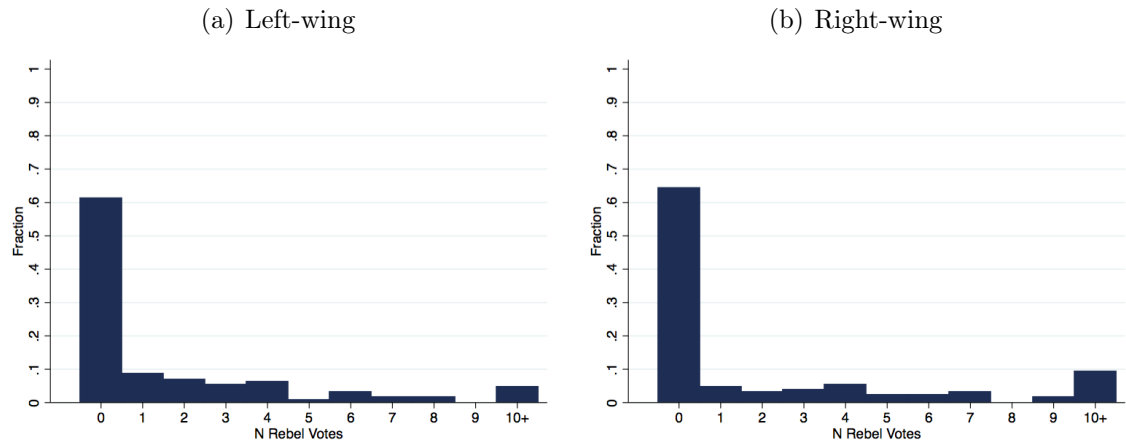
To display evidence on party discipline on votes, I collected data on all the public votes of bills that occurred during the 2012-2017 term. Over this period, votes were recorded for 129 bills.<sup>42</sup> Figure A1 displays the number of rebel votes for both the main left- and right-wing parliamentary groups.<sup>43</sup> We observe that in more than 60% of the bills, there was no rebel vote (a vote different from the majority of the parliamentary group to which the legislator is affiliated to) which means that all the politicians from a parliamentary group who voted casted the same vote. Cumulatively, there are strictly less than 10 rebel votes in nearly 96% (91%) of bills for the main left-wing (right-wing) group.

<sup>41</sup><http://www2.assemblee-nationale.fr/decouvrir-l-assemblee/role-et-pouvoirs-de-l-assemblee-nationale/les-fonctions-de-l-assemblee-nationale/les-fonctions-legislatives/les-votes-a-l-assemblee-nationale>

<sup>42</sup>See [http://www2.assemblee-nationale.fr/scrutins/liste/\(legislature\)/14](http://www2.assemblee-nationale.fr/scrutins/liste/(legislature)/14)

<sup>43</sup>This corresponds to nearly 500 parliamentarians, the rest of legislators are affiliated to center-right, ecologists, or other leftist groups.

Figure A1: Frequency of Rebel Votes during the 2012-2017 term



*Notes:* the data come from the Lower House during the 2012-2017 term. It corresponds to 129 bills for which voting data is publicly accessible. Left-wing (Right-wing) corresponds to the main left-wing (right-wing) parliamentary group which has fluctuated around 290 (190) legislators over the term. A rebel vote corresponds to a vote different from the majority of the parliamentary group. The Figure shows that there was 0 rebel vote in about 60% of bills in both the left- and right-wing groups. In less than 10% (5%) of the bills, there was 1 rebel vote in the main left-wing (right-wing) parliamentary group.

## B Data

### B.1 Examples of Amendments

Figure B1 shows how an amendment is displayed on the Lower House website. The page contains several information such as the title of the bill on the top, the identity of the author and co-sponsors in the middle and the content along with the oral presentation motivating the adoption of the amendment at the bottom.

Figure B1: Example of Amendment on the Lower House website

ART. 18 BIS N°58

---

**ASSEMBLÉE NATIONALE**  
23 juin 2014

---

ÉGALITÉ ENTRE LES FEMMES ET LES HOMMES - (N° 2043) ← **Bill's title**

Commission	
Gouvernement	

**REJETÉ**

**AMENDEMENT N°58**

présenté par  
Mme Nachury, Mme Guégot et Mme Zimmermann ← **Author and Co-sponsors**

-----  
**ARTICLE 18 BIS** ← **Content**

Après l'alinéa 4, insérer les deux alinéas suivants :

« 4° Le deuxième alinéa de l'article L. 5211-10 est complété par une phrase ainsi rédigée :

« L'écart entre le nombre des vice-présidents de chaque sexe des établissements publics de coopération intercommunale à fiscalité propre et des métropoles ne peut être supérieur à un. ».

**EXPOSÉ SOMMAIRE** ← **Motivation**

L'égalité de représentation entre les femmes et les hommes doit être envisagée pour l'intercommunalité également. C'est aussi un amendement de cohérence avec l'obligation de parité des exécutifs départementaux introduite par la loi du 17 mai 2013. Si l'objectif du présent projet de loi est bien de mettre en oeuvre une politique pour l'égalité entre les femmes et les hommes, il est nécessaire de ne pas « rester au milieu du gué » et de prévoir le respect de ce principe dans et par l'État, les collectivités territoriales, ainsi que leurs établissements publics.

Notes: this figure comes from the Lower House website at <http://www.assemblee-nationale.fr/14/amendements/2043/AN/58.asp>.

This amendment is related to the bill entitled *Equality between Women and Men*. Its content consists in adding the following sentence to the bill: “*the gap between the number of vice-presidents of each sex in a Public Institution of Intercommunal Cooperation<sup>44</sup> cannot be higher than one*”.

The motivation is that: “*The equality of representation between women and men should be considered at the intercommunal level. This is also an amendment of coherence with the obligation of parity among departmental executives introduced by the law of 17th may 2013. If the objective of the present bill is really to set a public policy in favor of equality between women and men, it is necessary to finish what was started and to provide the respect of this principle in and by the State, the local authorities as well as the public organisms.*”

<sup>44</sup>These institutions consist of gathering of small municipalities which coordinate their public policies and set similar level of tax.



## B.2 Details on Topic Classification Using Unsupervised Methods

This section displays the top keywords associated to the 30 topics uncovered with the LDA topic modeling approach. The list is presented in Table B1.

As explained in the body of the article, the main advantage of this method is that the user does not need to specify words associated to topics. Therefore, it allows the researcher to abstract from her/his subjectivity in the first steps of the analysis. However, they come with two important limitations.

The first limit of unsupervised methods is that they may not return the topics we are interested in. The second limit is that the absence of subjectivity is true only in the pre-processing steps of the data. To label a topic returned by unsupervised methods, subjectivity has to be used. For instance, if we look at the list of topics obtained in Table B1, the only way to interpret this list of topics is to manually classify the words as related to a well-known category. The issue is that with unsupervised methods, the topics found are extremely likely to pool several existing categories. For instance, one may not find a “women’s issues” topic but rather topics that mention labor, children, women and family along with other topics (such as topic 22 for which the word “wom” appears in 7th position, not shown in the Table).

Figure B2 displays the correlations between the topics found with the LDA approach and the dictionaries (described in the next section) by focusing on Topic 22 and women’s issues. In graph (a), we see that amendments tagged as women-related (with the dictionaries) are most correlated with those tagged under Topic 22. In graph (b), we see that amendments tagged as Topic 22-related are most correlated with both Labor issues, Child issues and Women’s issues. Therefore, Topic 22 has to be interpreted as a mixture of these topics. It is also likely to be a mixture of some subsets of amendments related to these topics so that it becomes difficult to understand what is exactly captured by Topic 22. This is why the LDA approach is used in the analysis to determine whether “female legislators are working on different topics than men overall” rather than study gender differences by topic.

Table B1: Latent Dirichlet Allocation Classification Method

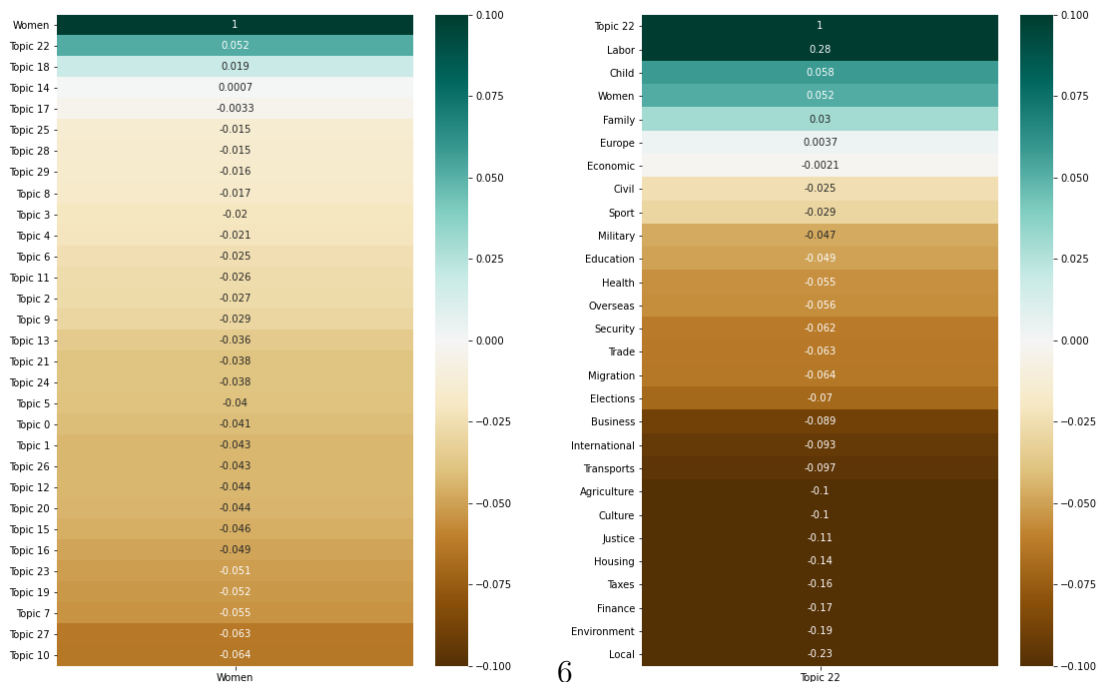
Topic	Top 5 words
Topic 0	spend, which, transport, compens, take
Topic 1	code, consumpt, european, franc, price
Topic 2	national, commiss, management, representative control
Topic 3	make, opportunity, surveillance, become, air
Topic 4	against, system, resort, threshold, fight
Topic 5	produce, energetic, product, renew, sector
Topic 6	law, project, articl, disposit, text
Topic 7	plan, associat, strong, account, scheme
Topic 8	guarantee, protect, resources, can, protect
Topic 9	limit, plan, metropol, notion, community
Topic 10	social, fiscal, finance, contribute, tax
Topic 11	advice, regional, region, administr, represent
Topic 12	service, sector, date, futur, coordin
Topic 13	security, hire, point, technical, give
Topic 14	function, two, more, month, less
Topic 15	under, walk, simple, sort, evolution
Topic 16	local, sea, trade, area, commercial
Topic 17	implement, criterion, free, institute, problematic
Topic 18	health, del, year, day, those
Topic 19	city, epci, dotation, ancient, can
Topic 20	society, title, finance, activity, million
Topic 21	public, establish, group, cooperate, perimeter
Topic 22	salar, work, contract, child, agreement
Topic 23	agriculture, realize, build, construct, budget
Topic 24	community, territory, competent, civil, fine
Topic 25	person, declare, superior, freedom, sentence
Topic 26	again, sense, install, permit, nuclear
Topic 27	territory, depart, area, network, population
Topic 28	more, be, therefore, all, thus
Topic 29	law, be, can, procedure, must

Notes: the data come from all the amendments produced in the French Parliament over the period 2002-2017 (2001-2017 for the Upper House). The table displays the top-5 words for 30 topics found using a Latent Dirichlet Allocation model.

Figure B2: Correlations Between Topics and Dictionary-Based Methods

(a) With Women's Issues

(b) With Topic 22



### B.3 Details on Topic Classification using Dictionary-Based Methods

This section brings further details on the topic classification. The procedure used is the following:

1. Create a list of topics of interest. This was done by using the permanent government ministries that existed during the 2002-2017 period. This leads to 27 non-mutually exclusive topics.
2. Remove stop words and stem all the words in the amendments and the bills' title. Then, return the 10,000 most recurring words in the amendments. Practically, I selected the closest threshold to the 10,000th word which is 49 and above which are 9,967 words. I thus obtain a sample of 9,967 words which occur at least 49 times in the amendments. The bills' title contain 1712 words. I pooled the two samples of words and obtained a final sample of 10,030 unique words.
3. Manually classify the words in the 27 categories.
4. Classify the amendments into each of the 27 non-mutually exclusive categories. The rule is that if an amendment contains one of the keywords included in a category, it is classified as belonging to the category.
5. Using the sample of amendments, return the 10,000 most recurring bigrams for each category and select only those that contain one of the classified keywords. Using this narrower sample of bigrams, I tagged obvious false matches. I then cleaned the classification of amendments by excluding these false matches from the classification.

Table B2: Details on Topic Classification - Part 1

Topic	Top 10 Keywords	5 Most Frequent Bigrams	5 Most Frequent Trigrams	Excluded Matches	False	Notes
Agriculture	agricul, agricultur, alimentar, farmer, fishing, hunt, breeding, food, fruit, methanised (58)	agricul exploit, local autorit, sea fish, plant protection, alimentary product	rural sea fish, greenhouse gas, natural agricul forest, space natural agricul, emiss greenhouse gas	duplicate hunt, will be aliment, aliment font, aliment height		aliment is used as a verb in other meanings.
Business	business, sme, capit, bank, banking, shareholder, employer, entrepreneur, dividend, multinational (4)	works council, million euro, turnover, entrepreneur, social security	organis professional employer, level nation interprofessional, solidarity social economy, employer social contribution, professional employer applic	work undertaken		the french word for business is “entreprise” which may also mean undertaken
Child	child, kindergarten, infant, baby, child pornography, child psychiatrist, pedophilia	family allowanc, parental autorit, child right, franc televis, child protection	best interest child, television channel advertis, suppress advertis televis, social action family, international child right	None		
Civil	civil servant	right oblig civil servant, territorial public service, deontology right oblig, cumulative employment retirement, magistrate judiciary order	public service, delegation management, compulsory scheme, employee private, court audit	None		in french, civil servant is a one-word expression. There is always a ministry for this topic.
Culture	cultur, cultural, audiovisual, televis, art, radio, spectacl, artistic, artist, cinema (26)	franc televis, public audiovisual, local autorit, public servic, million euro	high council audiovisual, television channel advertis, suspend acc internet, public service audiovisual, commiss protect right	scientific cultur, cultur mathematics, farmer culture, gmo cultur, cultur diversit (17)		cultur is a word used in other contexts, especially agriculture.
Economics	economic, economy, growth, gdp, inflat, conjunctur, cyclical, dollar, inflationnist, economist (3)	million euro, public servic, economic develop, local autorit, economic social	solidarity social economy, greenhouse gas, emiss greenhouse gas, environment social economic, court auctionneer	growth aliment, demographic growth, justic economi, energy saving, substantial saving, budgetary saving		The French verb “economiser” means saving.
Education	teach, academic, educ, study, middle school, school, degree, universit, educativ, university (25)	public servic, educ national, health instit, higher educ, million euro	private health instit, higher educ instit, higher educ research, mission public servic, hospital public servic	study possibilit, study article, free license, equal license, open license (19)		the french word for bachelor also means license.
Elections	elected, elect, ballot, constituenc, elector, voter, eligibility, senate elections, ineligible, mandatur (10)	local autorit, local elected, council communautar, new municipalit, municipal council	tax overtime, EPCI own tax, direct universal suffrag, local autorit gener, intermunicipalit public cooper	None		EPCI is a conglomerate of municipalities.
Environment	energy, environment, energetic, water, electricity, biodiversit, gas, mountain, environmental, ecologic (138)	local autorit, renewable energy, transit energetic, sustainabl develop, public servic	greenhouse gas, emiss greenhouse gas, biodiversit french agenc, rural sea fish, economic social environment	work environment, institutional landscap, economic landscap, concurrential environment, administrativ environment (2)		
Europe	european, europ, ESF	european union, state member, direct european, commiss european, european parliament	council european parliament, member european union, state member union, european human right, other state member	None		ESF is the European Social Fund.

Notes: words are translated from French to English.

Table B3: Details on Topic Classification - Part 2

Topic	Top 10 Keywords	5 Most Frequent Bigrams	5 Most Frequent Trigrams	Excluded Matches	False	Notes
Family	family, parent, familial, spouse, couple, mother, parenthood, mariage, famili, divorc (11)	famil allowanc, social securit, handicap person, million euro, parent authorit	social action famil, best interest child, person situat handicap, solidarit civil pact, reduced rate vat	famil neonicotinoid, herbicid famil, parent company, parent rock, joint exclus (10)		the french word for spouse can also mean joint
Finance	financ, financial, financi, budget, budgetar, deficit, PLF, PLFSS, LFSS, refinanc	million euro, social security, health institut, local authorit, public servic	financ social securit, intermunicipalit public cooper, mission public servic, private health instit, public health cooper	deficit care, deficit competitiv, deficit attract, deficit housing		plf, plfss, lfss are acronym for finance bills.
Health	health, care, physician, diseas, patient, sanitar, medical, handicap, medico, pharmaceutical (129)	health instit, public health, social securit, professional health, insuranc diseas	financ social securit, health private instit, person situat handicap, public servic hospital, care follow readapt	care examin, care delimit, care rule, leav care, animal health (20)		as in english care may also be used as take care of.
Housing	housing, hous, rent, building, tenant, lessor, habitat, locativ, HLM, ALUR (13)	social housing, social housing (singular), public instit, local authorit, build hous	rent social housing, intermunicipalit public cooper, institut public cooper, EPCI own fiscalit, build social housing	wild habitat, habitat species, natural habitat, rent movie, rent car (18)		HLM are social housing and ALUR is a bill on housing.
International	international, international (singular), AFD, internationaliz, humanitar, unesco, diplomatic, diplomat, genocid	million euro, child right, illegal trade, economic develop, international convent	schem region develop, international right convent, region develop economic, economic develop innov, economic innov internationaliz	None		AFD is the French Development Agency.
Justice	justic, judiciar, lawyer, notary, juridict, inmat, tribunal, magistrat, jail, court (34)	penal procedur, constititutional council, state council, court appeal, european union	court auctioneer, account personal prevent, personal prevent penibilit, jail euro fine, court justic union	social justic, fiscal justic, economic justic, share held, fish held		the french word for inmate also means held
Labor	work, salaried, job, employer, syndicate, worker, dismiss, labor, wage, unemploy (14)	social securit, million euro, employment contract, overtime work, professional format	organis professional employer, solidarity social economy, financ social securit, account personal format, level national interprofessional	syndicate energy, mixt syndicate, transport syndicate, parliamentary work, governmental work (9)		
Local	authorit, region, metropolit, regional, EPCI, regional (singular), intermunicipalit, department, department (singular), metropolitan (77)	local authorit, public instit, intermunicipalit cooper, own tax, public servic	intermunicipalit public cooper, public institut cooper, gener local authorit, EPCI own tax, cooper intermunicipalit tax	float authorit, ultramarine authorit		Authorit is translated by “collectivités” in French which is specific to this theme and narrows the number of false matches.
Migration	asylum, immigr, border, OFPRA, refugee, stateless, migrant, naturalize, migr, migrator	asylum seeker, right asylum, ask asylum, waiting area, residence permit	stay foreign right, stay residence foreign, foreign right asylum, temporary residence permit, country origin safe	fish migrator, bird migrator, river migrator, migr fish, migr wildlife (5)		OFPRA is a public organism protecting refugees.

Notes: words are translated from French to English.

Table B4: Details on Topic Classification - Part 3

Topic	Top 10 Keywords	5 Most Frequent Bigrams	5 Most Frequent Trigrams	Excluded Matches	False	Notes
Military	militar, war, army, combat, weapon, soldier, armament, ONAC	veteran, armed force, penal constraint, civil right, civil statute	civil right statute, local civil right, day defense citizenship, armed force, action day defense	declaration war family, obstacle course, price war, collector weapon, truth armed (1)		In french obstacle course is translated as combat race. Onac is an organism helping veterans.
Overseas	corsica, guian, caledoni, polynesi, mayott, martiniqu, guadeloup, miquelon, futuna, antil, oversea (14)	local authorit, oversea, saint pierr, pierr miquelon, genetic resourc	saint pierr miquelon, local authorit corsica, department oversea, rural agricul develop, convent pass state	None		Keywords include names of oversea territories
Security	securit, polic, securis, violenc, delinqu, terrorism, crim, insecurit, terrorist, forgery (24)	penal procedur, judiciar polic, state member, constitutionnal council, million euro	suspend internet acc, violenc done wom, commiss protect right, statu civil right, jail euro fine	social securit, financ securit, alimentar securit, medical securit, fiscal insecurit		
Sport	sport, athletic, footbal, horse riding, doping, olympic, cyclist, hippodrom, hooliganism, uefa	million euro, bet onlin, gam onlin, local authorit, sport event	solidarity social economy, competit sport event, game bet online, gambling chance, nation develop sport	None		
Taxes	fiscal, tax, levy, tax system, VAT, fiscal (singular), taxat, CICE, ISF, tax exemption (20)	million euro, own tax, tax credit, gener tax, turnover	EPCI own tax, intermunicipalit public cooper, public instit cooper, tax intermunicipalit cooper, reduced rate vat			VAT, CICE, ISF are acronyms which stands for specific taxes.
Trade	trade, commerce, commercial, commerci, commercial (singular), export, customs, customs officer, import, exporter	million euro, trade industry, chamber commerc, public service, illegal trade	chamber commerc industr, clerk tribunal commerc, mission public service, decree state council, greenhouse gas	None		
Transports	transport, vehicle, train, airport, SNCF, automobil, auto, train station, car, carrier (35)	million euro, local authorit, public servic, organisat authorit, greenhouse	greenhouse gas, emiss greenhouse gas, regulat train activit, authorit organisat transport, EPCI own tax	legislative vehicle, pesticid vehicle, air pesticid, conductive thread, political driver (16)		
Women	wom, sex, gender	wom men, men wom, part time, equalit wom, professional equalit	equalit wom men, violenc done wom, work part time, high council equalit, equalit men wom	same sex, kind offens, uniku kind, all kind, kind behavior (4)		the french word for gender also means genre or kind of.
Unclassified		editorial amend, precis amend, coordin amend, justify text	justify text same, coordin amend with, precis amend editorial, title categori transfer, coordin with amend			

*Notes:* words are translated from French to English.

## B.4 Descriptive Statistics on Topic Prevalence

Table B5 displays the trigrams and bigrams with the highest odds ratios in the sample of women-related amendments. The odds ratio is defined as the ratios of the odds of each trigram/bigram in the sample of women-related amendments divided by the odds of each trigram/bigram in the rest of the amendments. For this reason, the trigram/bigrams do not include the words 'wom', 'sex' or 'gender' which only appear in the sample of amendments referring to women's issues. We observe that the most frequent trigrams are "choice left family" followed by "ratio situation compared" and "share parental leave" which suggest that they are related to family/child issues. As for the bigrams, the one with the highest odds ratios are "writing more", followed by "periods development" and "parental effect".

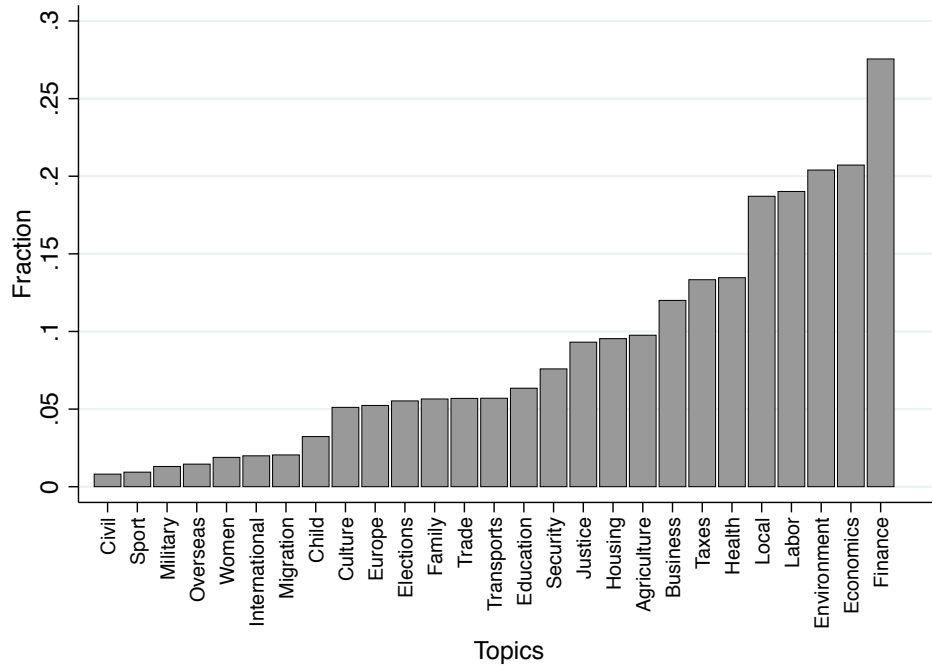
Table B5: Trigrams and Bigrams with the Highest Log Odds Ratio in the Sample of Amendments Related to Women's Issues

(1)	(2)	(3)	(4)	(5)	(6)
	<i>Trigrams</i>			<i>Bigrams</i>	
Rank	Log Odds Ratio	Keywords	N	Keywords	
1	3.14	choice left family	3.16	writing more	
2	3.02	ratio situation compared	2.99	periods development	
3	2.92	share parental leave	2.98	parental effect	
4	2.9	other medical profession	2.94	share leave	
5	2.86	young children more	2.94	third anniversary	

*Notes:* the data come from all the amendments produced in the French Lower House over the period 2002-2017. For each trigram/bigram, the odds ratio correspond to the ratio between the odds that a given trigram/bigram appears in the sample of women-related amendments divided by the odds that the same trigram/bigram appears in the rest of the amendments.

Figure B3 displays descriptive statistics on the prevalence of each topic. We see that the most prevalent topic is Finance. About 28% of the amendments are classified as finance-related. At the other end of the spectrum, the least prevalent topic is related to civil-servants which include about 1% of all the amendments.

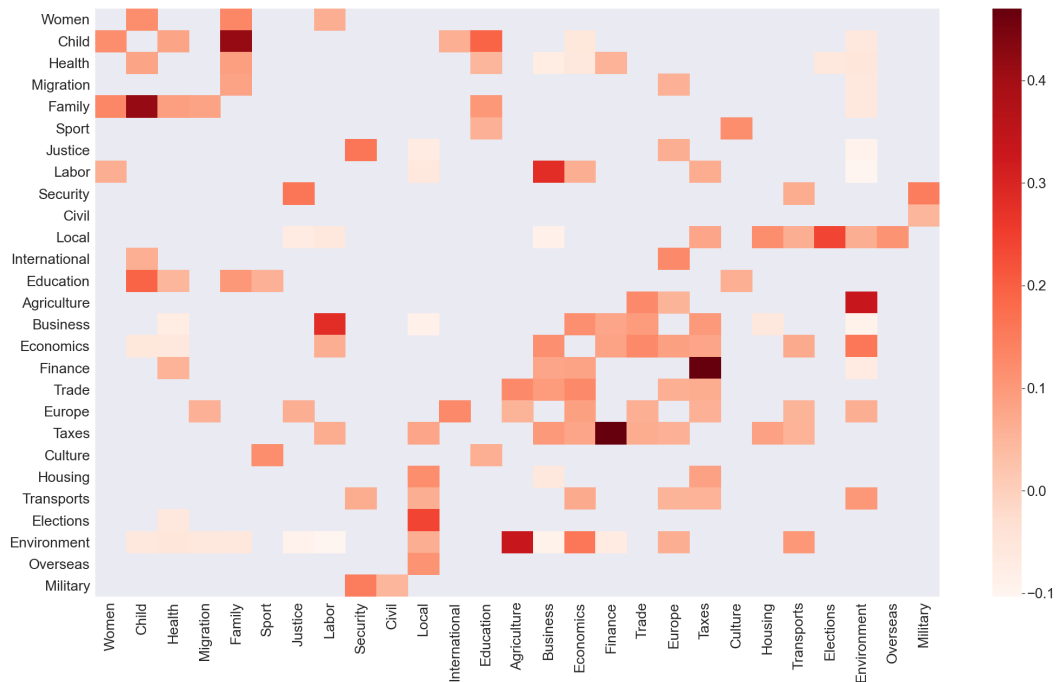
Figure B3: Descriptive Statistics on Topics Prevalence



*Notes:* the data come from the French Lower House over the 2002-2017 period. Each bar corresponds to a topic and represents the share of amendments associated to this topic. An amendment can be associated to several topics.



Figure B4: Correlation Matrix between all topics



*Notes:* the data come from the French Lower House over the 2002-2017 period. Perfect correlations (diagonal) and correlations in the  $[-0.05;0.05]$  interval are not represented.

Table B6 displays a sample of 5 amendments identified as women-related by the dictionary-based methods.

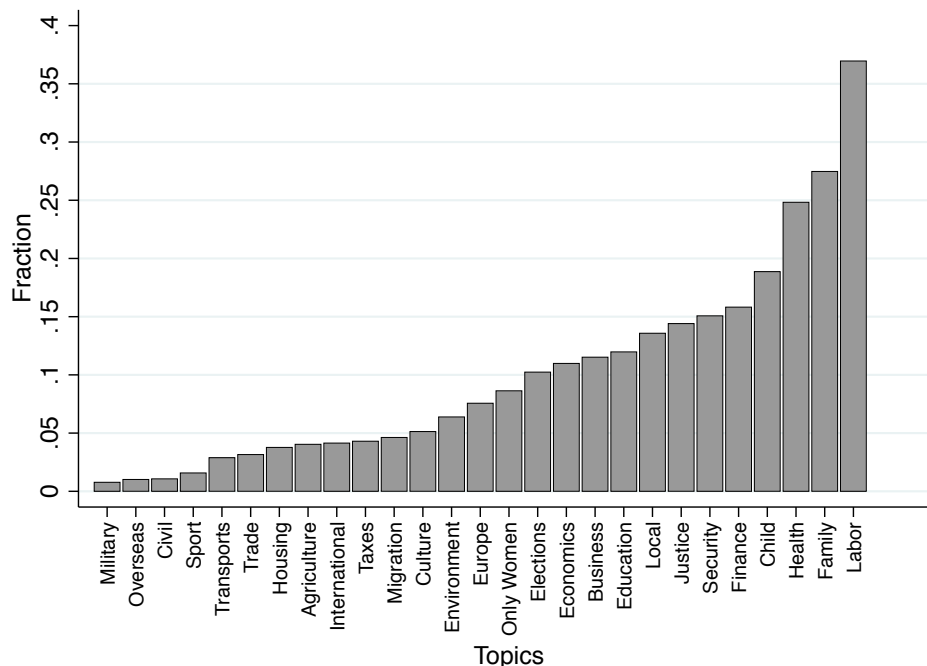
Table B6: Examples of Women-Related Amendments

Bill's Name	Amendment's Content	Amendment's Motivation
Bill's relative to social dialogue and employment	Complete Alinéa 29 by the words: "and the mixity of jobs	This amendment aims to enrich the powers of the regional interprofessional joint committees (CPRI) by integrating the issue of gender diversity in their field of competence. As clearly expressed in the explanatory memorandum of the ANI law of March 1, 2004, the employment of women is a factor of social dynamism and economic growth. According to INSEE in 2011, the employment rate for women aged 15 to 65 was 67% compared to 76% for men. Moreover, women's employment is confronted with the phenomenon of "occupational segregation" because women's jobs are concentrated in 6 major professional fields (administrative services, personal services, sales, distribution, services to companies and communities, social and cultural intervention). 2014 was the year of gender diversity with a national mobilization initiated by Najat Vallaud-Belkacem and all the actors in employment, in order to implement measures in this direction. Companies with less than 11 employees (TPE), i.e. 3 million employees, must be included in this significant initiative for female employment. The addition of the competence of job mix for the CPRI will allow debates and consultations on this essential theme.
Bill for equality between women and men	The Superior Council of the State Civil Service [...] publish each year a written report on the comparative situation of the general conditions of employment and training of women and men within their civil service [...].	The purpose of this amendment is to require the annual publication of a comparative situation report in the state, regional and hospital civil service, as is the case in the private sector. The law of March 12, 2012 has enabled the development of statistical tools adapted to measure the progress made within the civil service in terms of professional equality and representation of women. Article 51 of the law provides for the publication by the government of an annual report on the civil service, including data on recruitment, the number of women on juries, training, working hours, career advancement, working conditions, remuneration and the work-life balance. It does not include enough reliable indicators, and the data on gender inequality is too often scattered, so that it is not possible to implement an overall strategy today. The comparative situation report introduced in private companies by the Copé-Zimmermann law has proven its effectiveness. The indicators imposed allow the employer to benefit from reliable figures in order to define an action plan. The extension of the comparative situation report, as practiced in the private sector, to the entire civil service will therefore be a factor of considerable progress for the equality of men and women.
Bill relating to social dialogue and employment	In paragraph 2, replace the rate: "30%" with the rate: "10%".	Women are poorly represented in employee representative bodies. In order to encourage them to take on more responsibilities, we propose that non-discrimination in pay should apply from 10% of working time devoted to delegation hours, as few women devote more than 30% of their working time to this.
bill relating to the extension of the offense of fraud to the voluntary interruption of pregnancy	After the third paragraph of article 221-5 of the penal code, a paragraph is inserted as follows: Persons found guilty of inciting or causing the termination of pregnancies as a result of a crime, misdemeanor or abuse, are sentenced under article 221-1. In the case of the unborn child, this penalty is doubled.	Crimes that cause miscarriages or result in forced abortions of pregnant women must be severely punished. There are many cases of pregnant victims who have lost their child as a result of abuse. In 2013, in the United States, members of a teenage family pregnant as a result of rape ended the life of the unborn child who caused her to miscarry before cooking the baby to remove the traces. This type of unspeakable crime must be strongly condemned and requires double punishment.
Social Security Financing Bill	In paragraph 2, after the word "physicians", insert the words "regardless of practice area".	The improvement of the maternity protection, aiming at bringing the rights of women doctors closer to those of women employees of the general regime, and in particular the announced measure of remuneration during maternity leave, must be able to benefit women doctors whatever their sector of practice. Indeed, the envisaged measure would only concern doctors who practice opposable tariffs or who commit themselves to moderate their fees. This is totally discriminatory: all women doctors have the right to have the same type of maternity coverage, this must be written into the law.
Bill for equality between women and men	A sentence is added to the second paragraph of Article L. 3142-1 of the Labor Code to read as follows: "This leave has the value of a legal prohibition to work during the three days following the birth of the mother of her child.	Almost 90% of fathers do not take their full paternity leave. However, we know that the involvement of the father from the first days of the child favors a greater investment in the child's education. This amendment aims at transforming the exceptional leave of absence of 3 days into a legal prohibition to work in order to allow fathers to be present at the time of the child's birth. Such a legal prohibition will ensure a generalization of this practice.

*Notes:* the data come from a sample of 5 amendments tagged as women-related and defended in the French Parliament over the period 2002-2017.

Figure B5 displays descriptive statistics on the prevalence of each topic within the women’s issues category. We see that, among women-related amendments, about 35% also refer to labor issues and 25% to health or family issues. At the other end of the spectrum, the least represented topics are military and overseas issues.<sup>45</sup>

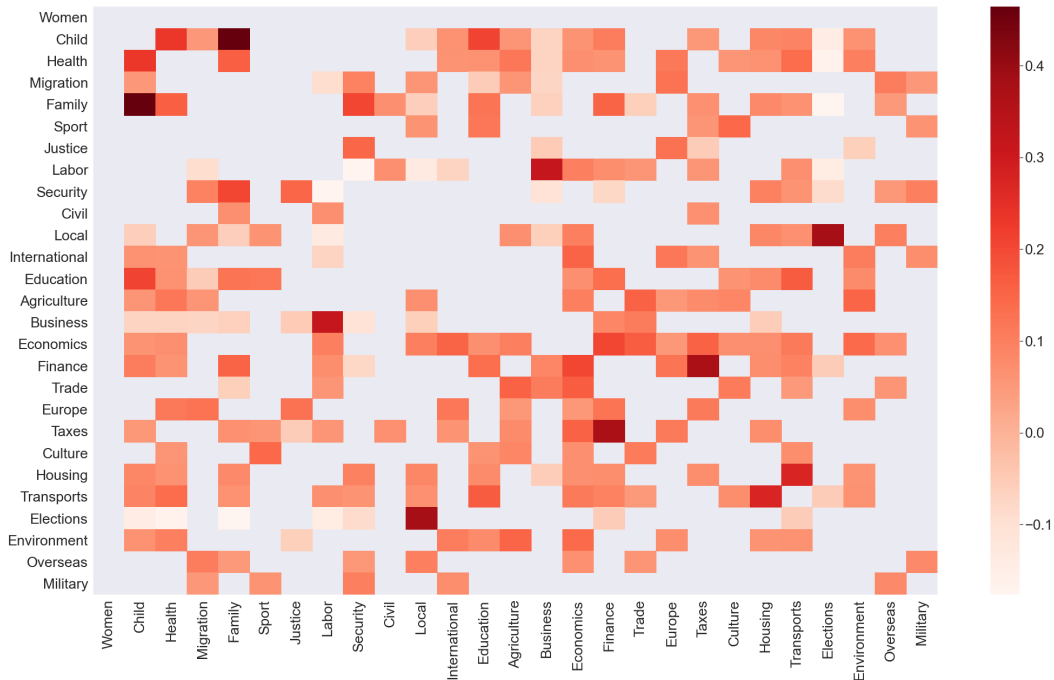
Figure B5: Descriptive Statistics on Topics Prevalence Within Women’s Issues



*Notes:* the data come from the French Lower House over the 2002-2017 period. The sample is restricted to women-related amendments. Each bar corresponds to a topic and represents the share of amendments associated to this topic. An amendment can be associated to several topics.

<sup>45</sup>It should be noted that amendments can be associated to more than 2 topics and therefore, the fractions in the histogram do not sum to 1.

Figure B6: Correlation Matrix within Women's Issues



Notes: the data come from the French Lower House over the 2002-2017 period. Perfect correlations and correlations in the  $[-0.05;0.05]$  interval are not represented.

Table B7 displays a sample of 5 unlabeled amendments (without a topic assigned by the dictionary-based methods).

Table B7: Examples of Unlabeled Amendments

Bill's Name	Amendment's Content	Amendment's Motivation
Bill relating to the application of article 11 of the Constitution	In paragraph 1, delete the word "referendum". - Accordingly, make the same deletion in paragraph 2.	Amendment of coordination.
Bill relating to intelligence	In paragraph 2, replace the reference to "L. 851-9" with "L. 851-8" and the reference to "7°" with "8°".	Amendment of coordination.
Bill relating to Greater Paris	At the beginning of the penultimate sentence of paragraph 6, delete the words: "Under the supervision of the Autorité de régulation des activités ferroviaires,".	This amendment is justified by its very text
bill relating to consumption	At the end of paragraph 1, replace the words "replaced by the following provisions" with the words "as follows".	Editorial Amendment

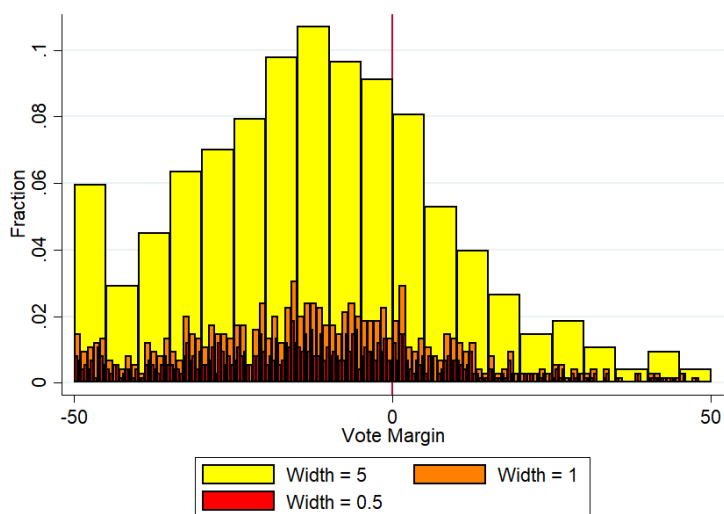
Notes: the data come from a sample of 5 unlabeled amendments defended in the French Parliament over the period 2002-2017.

## C Evidence from the Lower House

### C.1 Internal Validity Tests for the Regression Discontinuity Design

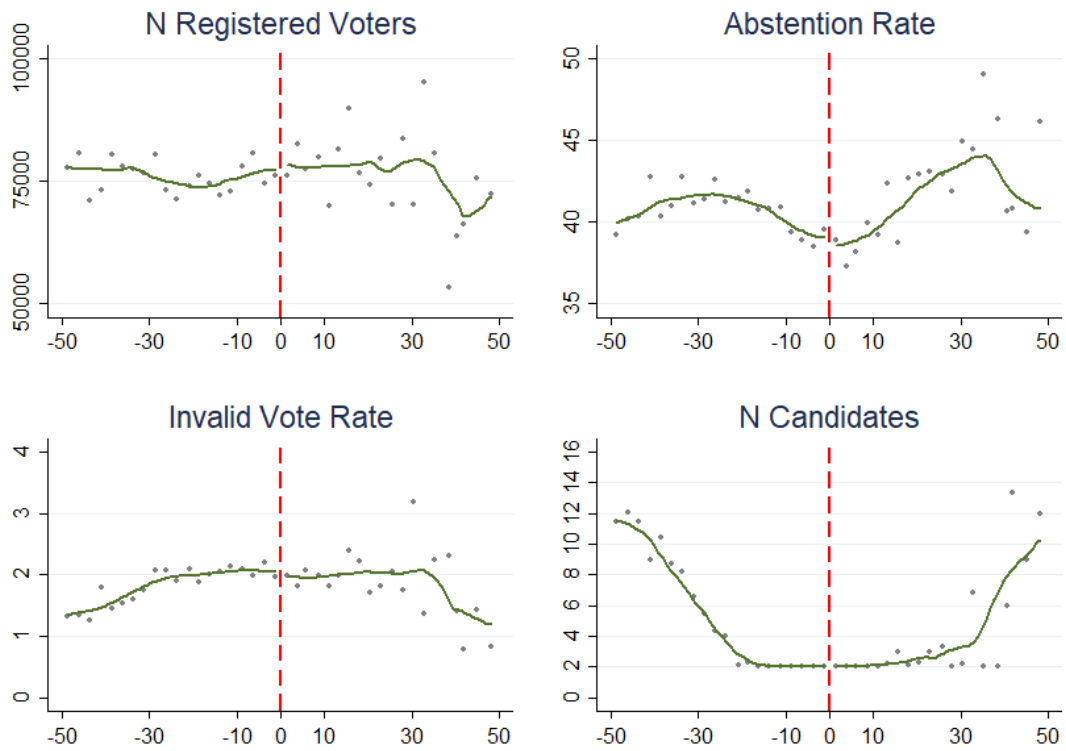
This section provides further internal validity tests for the regression discontinuity design. Figure C1 displays the histogram of the running variable density. Figures C2, C3, C4 and C5 display the graph showing the relationship between potential confounders and the running variable.

Figure C1: Histogram Density



*Notes:* The data come from the 2002, 2007 and 2012 elections for the Lower House. The sample is restricted to mixed-gender close races.

Figure C2: Continuity Assumption - Election Characteristics



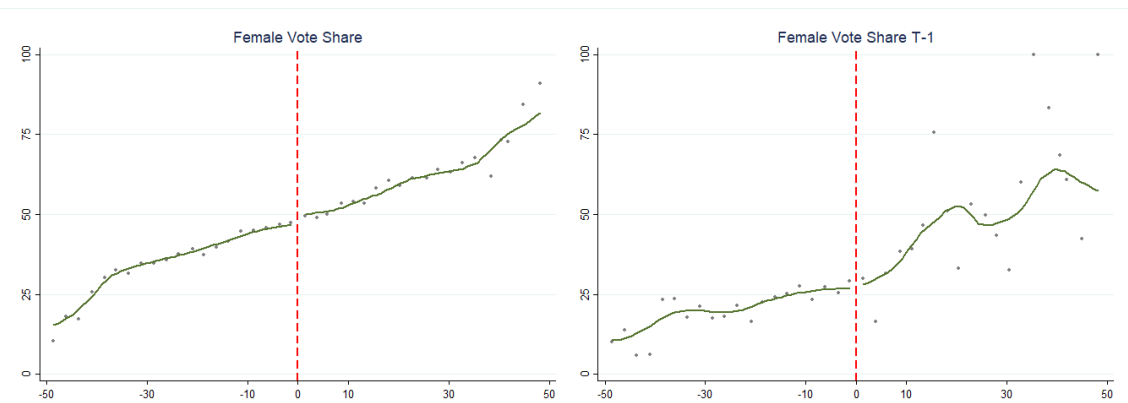
Notes: The data come from the 2002, 2007 and 2012 elections for the Lower House.

Figure C3: Continuity Assumption - Demographics Characteristics



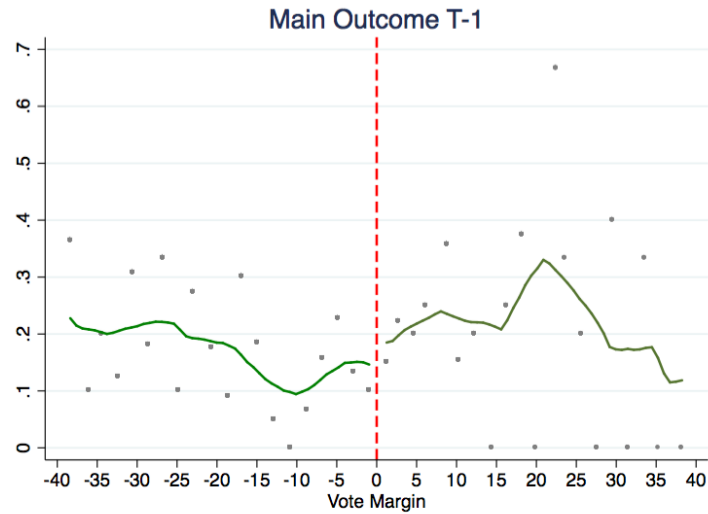
Notes: The data come from the 2002, 2007 and 2012 elections for the Lower House.

Figure C4: Continuity Assumption - Preferences for Women



Notes: The data come from the 2002, 2007 and 2012 elections for the Lower House.

Figure C5: Continuity Assumption - Initiation Women-Related Amendment T-1



Notes: The data come from the 2002, 2007 and 2012 elections for the Lower House.

## C.2 Descriptive Statistics

Table C1 provides descriptive statistics on the characteristics of legislators in the Lower House.

As explained in the body of the text, nearly 91% of legislators are associated to the main left-win wing (*Parti Socialiste*) or right-wing party (*Union pour un Mouvement Populaire*). Therefore, I control by a left vs right dummy that allows me to incorporate minor parties instead of political parties fixed-effects that would lead to very few observations for some characteristics. To construct the left-wing variable, I exploited the information on party endorsement during the parliamentary elections. Left-wing include all the following abbreviated names of political parties based on the election data: COM (*Parti Communiste*), FG (*Front de Gauche*), PRG (*Parti Radical de Gauche*), RDG (*Les Radicaux de Gauche*), REG (*Parti Régionaliste*), SOC (*Parti Socialiste*), VEC (*Europe Ecologie Les Verts*). Right-wing include the following: FN (*Front National*), MODM (*Mouvement Démocrate*), NCE (*Nouveau Centre*), UDF (*Union Pour la Democratie Francaise*), UMP (*Union pour un Mouvement Populaire*).



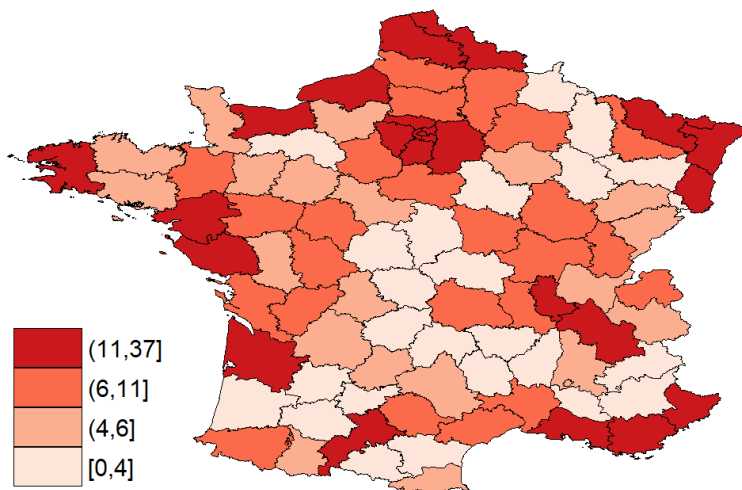
Table C1: Descriptive Statistics on Legislators' Characteristics and their Activity Related to Amendments

	(1)	(2)	(3)	(4)
	Mean	S.D.	Min	Max
Woman (1=Yes)	0.19	0.39	0	1
Age	54.63	8.88	27	81
Left-Wing (1=Yes)	0.44	0.50	0	1
Incumbent (1=Yes)	0.58	0.49	0	1
Victory Margin	16.81	15.09	0	100
N Co-Sponsored Per Term	1038.33	1463.75	0	11138
N Authored Per Term	124.34	257.66	0	2852
Dummy Authored (1=Yes)	0.87	0.34	0	1
N Authored Per Term Women-Related	3.57	18.97	0	379
Share Authored Women-Related	0.02	0.08	0	1
Dummy Authored Women-Related (1=Yes)	0.27	0.44	0	1
Observations	1663			

*Notes:* the data come from the French Lower House over the period 2002-2017. *Women - Related* indicates that the amendment is identified as related to women's issues with a dictionary-based method. *Dummy Authored Women-Related* is a variable that is equal to 1 if the legislator has authored at least one amendment related to women's issues.

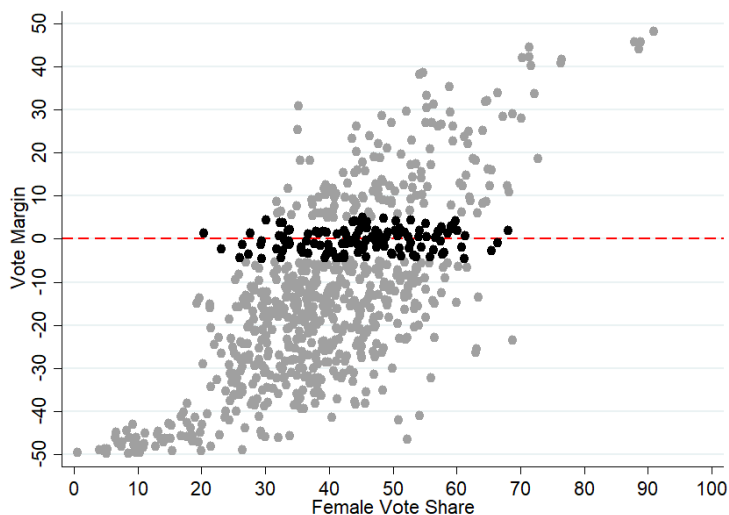
Figure C6 depicts the distribution of the observations on the French territory. Importantly, we see that they are scattered throughout the territory with a larger concentration around Paris, in the north and in the east of France.

Figure C6: Where Are the Close-Races?



*Notes:* the data come from the 2002, 2007 and 2012 Lower House elections. Each class represents a quantile of the distribution of observations.

Figure C7: Preferences for Women in Close Race Elections



*Notes:* the data come from the 2002, 2007 and 2012 elections for the Lower House. The graph represents the total vote share of women on the x-axis and vote margin (forcing variable) on the y-axis. The black dots are located in a 5 points interval around the elimination threshold.

Table C2: Comparison of District Characteristics Between the Samples of Single-Gender and Mixed-Gender Races

	(1) Single-Gender	(2) Mixed-Gender	(3) Difference (1) - (2)
N Registered Voters	75048.859	76044.026	-995.167 (767.561)
Abstention Rate	39.929	40.671	-0.742* (0.405)
Invalid Vote Rate	2.682	1.897	0.785*** (0.066)
Total Population	110979.490	112843.511	-1864.021 (1201.493)
Population Male	53812.882	54658.554	-845.672 (586.759)
Population Female	57166.673	58184.969	-1018.296* (618.497)
Share Women Population	0.515	0.516	-0.000 (0.000)
Share Working Women	0.614	0.639	-0.025*** (0.004)
Share Working Age Population	0.642	0.645	-0.002 (0.002)
Unemployment Rate	0.099	0.091	0.008*** (0.002)
Female Vote Share	20.853	39.300	-18.447*** (0.964)
Left Wing Constituency	0.425	0.361	0.064*** (0.024)
Observations	806	857	1663

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Lower House over the period 2002-2017. Standard errors clustered at the constituency level are given in parentheses. Each line corresponds to one variable. Column 1 displays the mean for the sample of single gender races, column 2 the mean for the sample of mixed-gender races and column 3 the difference between columns 1 and 2.

### C.3 Additional Results - Unsupervised Methods

Table C3 displays the results of a joint significance test using various numbers of topics and two different specifications (RDD CCT corresponds to Equation 2 and Pooled OLS corresponds to Equation 1). We observe that, across the two specifications and five different number of topics, the tests all reject the null hypothesis indicating that the coefficients associated to the variable that equals 1 if the legislator is a woman are jointly equal to zero. This suggests that, as compared to male legislators, women are working on different topics.

Table C3: Results Using Different Number of Topics

Specification		<i>RDD CCT bandwidth</i>		<i>Pooled OLS</i>	
N Topics (1)	Test statistic $\chi^2$ (2)	p-value (3)	Test statistic $\chi^2$ (4)	p-value (5)	
30	58.30	0.0015	62.08	0.0003	
40	66.7	0.0051	113.46	0.0000	
50	91.81	0.0001	136.85	0.0000	
60	123.55	0.0000	136.23	0.0000	
70	151.72	0.0000	122.67	0.0000	

*Notes:* the data come from the French Lower House over the period 2002-2017. Columns 1 and 2 corresponds to the results using the RDD with the CCT bandwidth specification while columns 3 and 4 use the Pooled OLS specification. Column 1 (N Topics) corresponds to the number of topics used with the LDA approach. Columns 2 and 4 (Test statistic) provides the test statistic for a joint test of significance of the variable *Woman*. Columns 3 and 5 (p-value) provides the related p-value.

### C.4 Additional Results - Impact on Women’s Issues

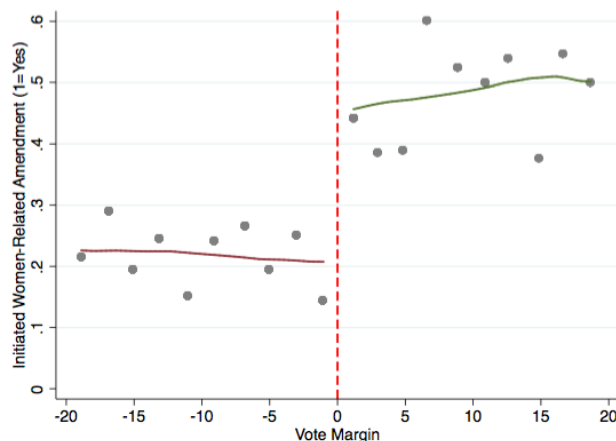
In this section, I provide more detailed results on the impact of legislator’s gender on women-related amendments. Figure C8 displays the discontinuity graph examining the extensive margin of amendments’ initiation. On the right-hand side of the vertical dashed line, a woman is elected and on the left-hand side, a man. We see that when a female legislator is elected by a narrow margin, the probability that she will introduce at least one women-related amendment jumps by about 20 percentage points, from 20% to more than 40%.

Table C4 confirms the visual impression. The six specifications all point towards the fact that women are more likely to initiate an amendment related to women’s issues. Looking at column 1, in the pooled OLS specification, women are about 16 percentage points more likely to initiate an amendment. This effect is robust to the inclusion of fixed-effects at the constituency level (column 2). Similarly, in the preferred RDD specification (column 5), we see that women elected in mixed-gender close races are about 24 p.p. more

likely to initiate such an amendment as compared to their male counterparts. Scaling this effect to the average probability of men to introduce at least one women-related amendment, we find that women are about 115% more likely to initiate such amendments.

In Section C.5, I show that the results are robust to using alternative bandwidths and the so-called local randomization strategy (Cattaneo *et al.*, 2014).

Figure C8: Legislator's Gender and Authorship of Women-related Amendments



*Notes:* the data come from the Lower House over the period 2002-2017. The y-axis represents the probability that a legislator initiates at least one women-related amendment. The x-axis represents the vote margin between the first woman and the first man in a mixed-gender election. On the right-hand side of the vertical dashed line, a woman is elected and on the left-hand side, a man. The solid lines correspond to a lowess fit of the bin-averages. There are 10 bins on each side of the cutoff.

Table C4: Authorship of Women-Related Amendments - Lower House

<i>Dep. Var.: At Least one Amendment Initiated (1=Yes)</i>						
Specification	(1)	(2)	(3)	(4)	(5)	(6)
	Pooled OLS	Fixed Effects		<i>Regression Discontinuity</i>		
			Poly	LLR IK	LLR CCT	LLR CCT/2
Woman (1=Yes)	0.17*** (0.03)	0.18*** (0.05)	0.21*** (0.06)	0.20*** (0.08)	0.21** (0.10)	0.27** (0.12)
Control Mean	0.22	0.22	0.21	0.22	0.21	0.19
Scaled Effect	75.6	82.3	100.9	90.1	104.3	144.2
Bandwidth Restriction			None	20.1	13.1	6.5
Observations	1663	1663	857	491	341	187
Constituencies	598	598	486	325	249	159

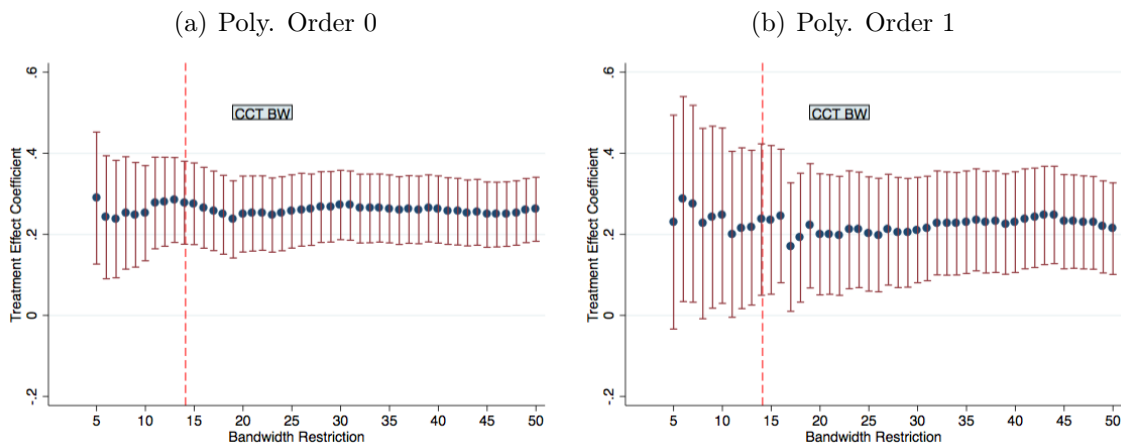
*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Lower House over the period 2002-2017. Standard errors clustered at the constituency level are given in parentheses. Controls in specifications of columns 1 and 2 include the age at the beginning of the term, the political inclination (left or right-wing), the incumbency status, the margin of victory at the election, the female participation rate to the labor market in the constituency and term fixed-effects. Controls in column 2 also include constituency fixed-effects. Controls in column 3 include a second order polynomial in the running variable. Specifications of columns 4, 5 and 6 fit a local linear regression around the cutoff that allows for a break in the slope at the cutoff using respectively the IK, the CCT and half the CCT bandwidth. The “Control Mean” line designates the outcome mean for the sample of male legislators. The “Scaled Effect” line designates the impact of female legislators scaled to the mean of male legislators (Treatment Effect/Control Mean).

## C.5 Robustness - Alternative Bandwidths and Local Randomization Strategy

This section studies the robustness of the RDD results when the (i) the bandwidth is smaller and (ii) the so-called local randomization method is implemented.

The choice of the bandwidth is crucial and while two methods are used (CCT and IK), one could wonder how sensitive the results are to the size of the bandwidth, especially to smaller ones. Figure C9 provides an answer to this question for the main outcome, i.e. a dummy equals to 1 if the legislator has initiated at least one women-related amendment. I replicate the estimation for all the possible windows bounded by two integers including at least 50 observations (the smallest window is  $[-5;5]$ ). The coefficient is always positive and quite stable across the different bandwidths. Only the precision seems to diminish as the bandwidth is narrowed, which is expected since the number of observations also goes down.

Figure C9: RDD Alternative Bandwidth Outcome: At Least One Amendment Initiated



*Notes:* the data come from the French Lower House over the period 2002-2017. The vertical axis represents the probability that a woman initiates at least one amendment related to women's issues relatively to a male legislator. Confidence intervals are represented at the 95% level. The vertical red dashed line represents the CCT bandwidth.

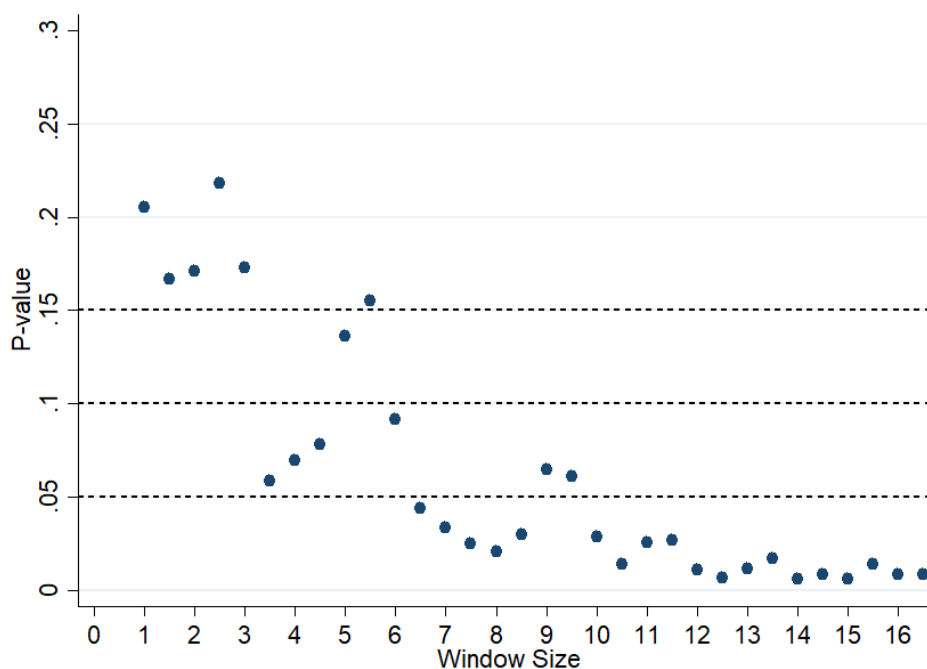
While the usual regression discontinuity design relies on the continuity of potential confounders around the threshold, one could wonder how the results vary when the bandwidth is restricted to a window in which all the confounders are not only continuous at the threshold but also equal on both sides of the threshold. This is the purpose of the local randomization strategy. It selects the largest window for which all the covariates are balanced on both sides of the threshold. Using this window, it tests for the difference in the outcome between the two sides of the threshold.

Figure C10 displays the smallest p-value for all the covariates on a wide range of

windows. The covariates are the number of candidates, the number of registered voters, the abstention rate, the invalid vote rate, the total population in the constituency, the total male population, the total female population, the share of women, the share of working women, the share of working age individuals, the unemployment rate, the female vote share during the last election, a dummy indicating that the constituency was won by the left-wing during the last election, the share of female and left-wing candidates. We see that the smallest p-value is below 0.15 (and 0.1) for nearly all the windows larger than [-3;3]. Using a threshold of 0.05, the selected window is [-6;6].

Table C5 displays the results for the difference in means of the outcome between the two sides of the cutoff. We see that when the p-value threshold for the balance test is 0.15 or 0.1, the selected window is [-3;3]. Using this window, the difference in means is 0.256, which is significant at the 5% level (the related p-value is 0.008 as shown in column 4). The 95% level confidence interval is [0.093;0.465]. The inference is done on a sample including 43 legislators on each side of the cutoff.

Figure C10: P-values from Balance Tests over a Set of Windows



*Notes:* The data come from the French Lower House over the 2002-2017 period. Each dot corresponds to the smallest p-value of all the covariates included in a balance test over a given window. The y-axis represents the value of the p-values. The x-axis represents the window sizes. The covariates are the number of candidates, the number of registered voters, the abstention rate, the invalid vote rate, the total population in the constituency, the total male population, the total female population, the share of women, the share of working women, the share of working age individuals, the unemployment rate, the female vote share during the last election, a dummy indicating that the constituency was won by the left-wing during the last election, the share of female and left-wing candidates. The horizontal dashed-lines represent the 0.15, 0.1 and 0.05 significance levels.



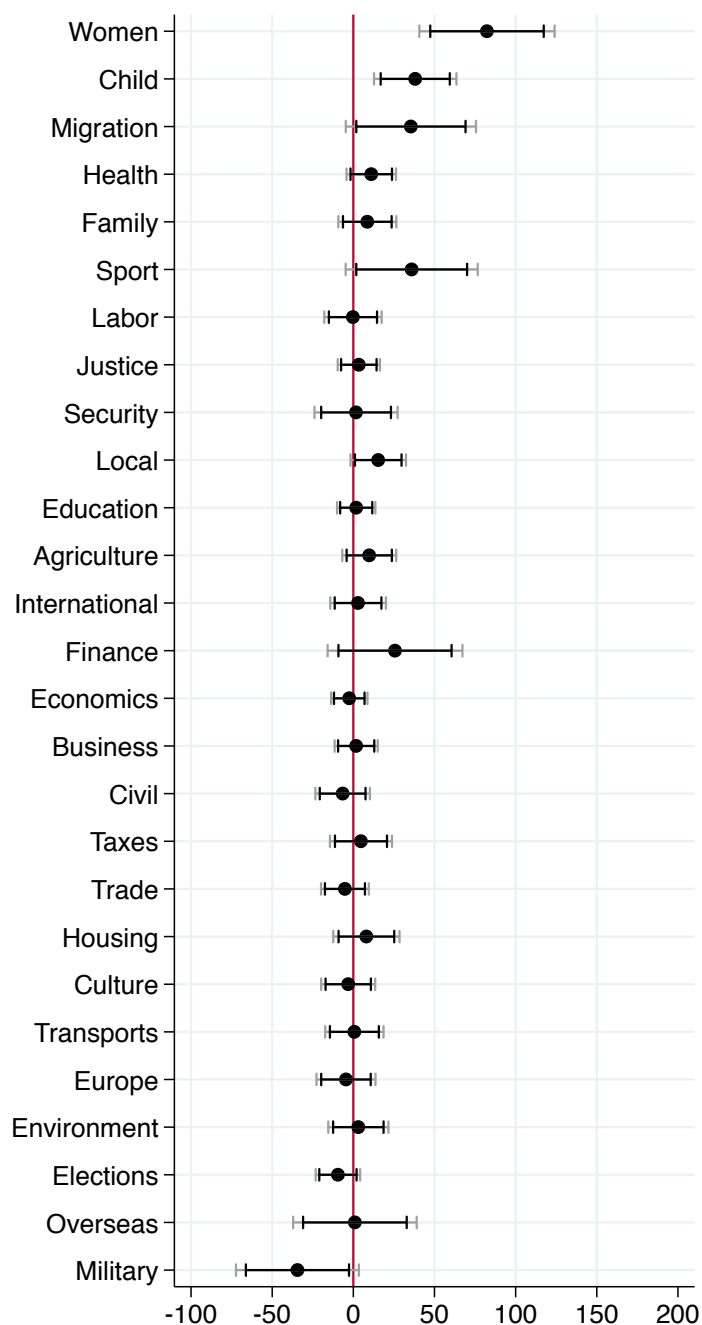
Table C5: Randomization Inference: Difference in Means Test

Balance Test P-value Threshold	Window	Diff. in Means Stat	P-value	95% Confidence Interval	N Left Cutoff	N Right Cutoff
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0.15	[-3;3]	0.256	0.008	[0.093;0.465]	43	43
0.1	[-3;3]	0.256	0.008	[0.093;0.465]	43	43
0.05	[-6;6]	0.231	0.000	[0.08;0.373]	89	65

*Notes:* the data come from the Lower House over the period 2002-2017. The dependent variable is a dummy that equals 1 if the parliamentarian initiated at least one women-related amendment. Column 1 displays the p-value threshold regarding the balance test for all the covariates to determine the window. Column 2 displays the selected window. Column 3 displays the value of the Difference in Means statistics between the two sides of the cutoff. Column 4 displays the p-value related to the diff. in means statistics. Column 5 displays the confidence interval at the 95% level. Columns 6 and 7 respectively show the number of observations used on the left and the right side of the cutoff.

## C.6 Robustness - Fixed-Effect Specification

Figure C11: Extension to Other Topics: Authorship Analysis - Fixed-effects specification



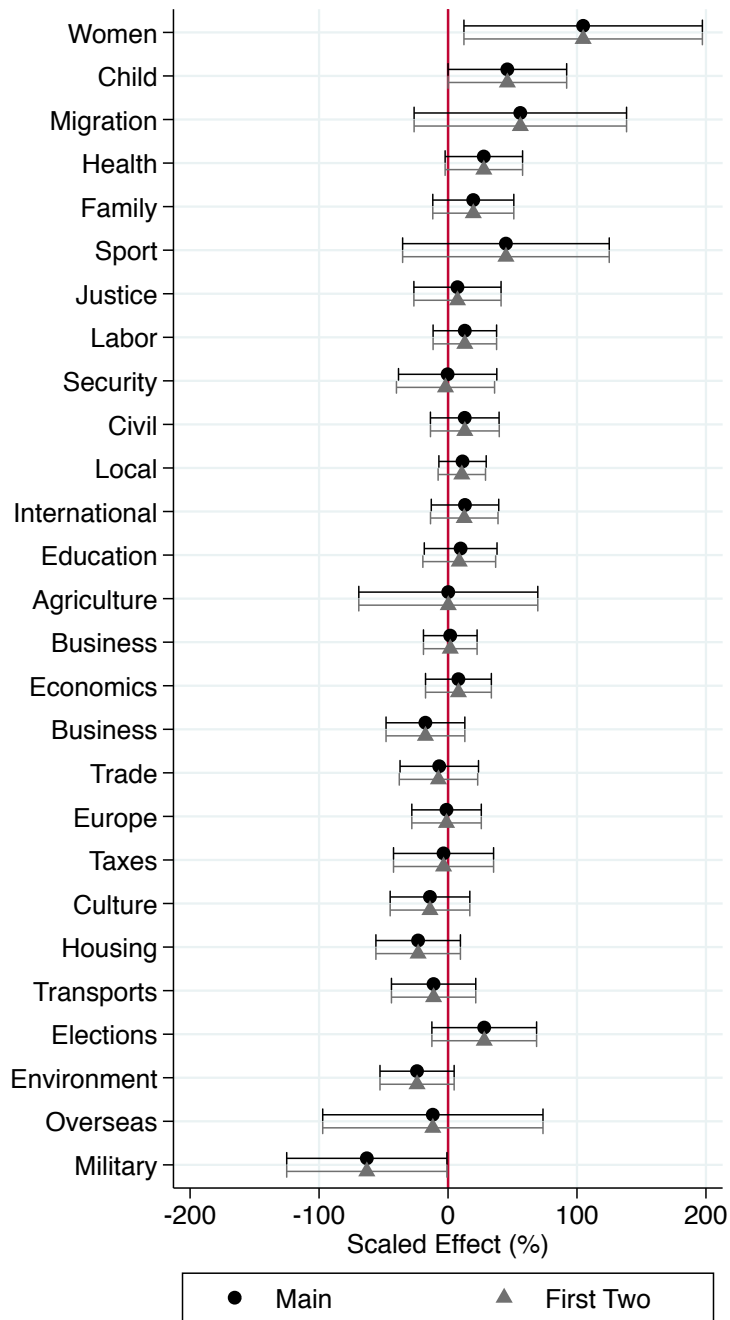
*Notes:* the data come from the French Lower House over the 2002-2017 period. Each row corresponds to a topic. The outcome is a dummy that equals 1 if the legislator initiates at least one amendment on the topic considered. Each dot represents the coefficient associated to the variable *Woman* divided by the average of male legislators (scaled effect). Confidence intervals are represented at the 95% and 90% levels. Estimates come from the fixed-effect specifications.

## C.7 Robustness - Alternative Definition of Close Races

The running variable used in the regression discontinuity exploiting mixed-gender close races (explained in Section 3.1.2) is based on the vote margin between the first woman and the first man during the last round of the election. An advantage of this definition is that it includes all mixed-gender races, independently of the rank of other candidates. Therefore, it allows to increase the statistical power in the analysis and also capture races where three candidates have very close vote share (for instance 30%, 29.9% and 29.8%). However, when a third candidate is present, one might question whether the election really depicts a mixed-gender close race. The answer to this question depends on how one defines mixed-gender close races. If it corresponds to races where a candidate of either sex could have won, then races with a third close candidate can be considered as mixed-gender close races. If it corresponds to the aggregate difference in vote share attributed to all men against all women, then it will be more difficult to argue that the race was close.

To shed light on how this definition alters the results, I replicated the results on the sample of mixed-gender close races where the first man and woman are also the first two candidates. Figure C12 depicts the results. As we can see, the results obtained with the two samples are almost indistinguishable. This is due to the facts that (i) 90% of mixed gender close-races correspond to races where the first woman and man are the first two candidates and (ii) when they are not also the first two, the vote margin between the first woman and first man is on average 46 points, suggesting that the race was not close and therefore not included in the main regression discontinuity analysis which reduces the sample to a narrow victory margin.

Figure C12: Gender Differences in Lawmaking in the Lower House - Alternative Definition of Close Races

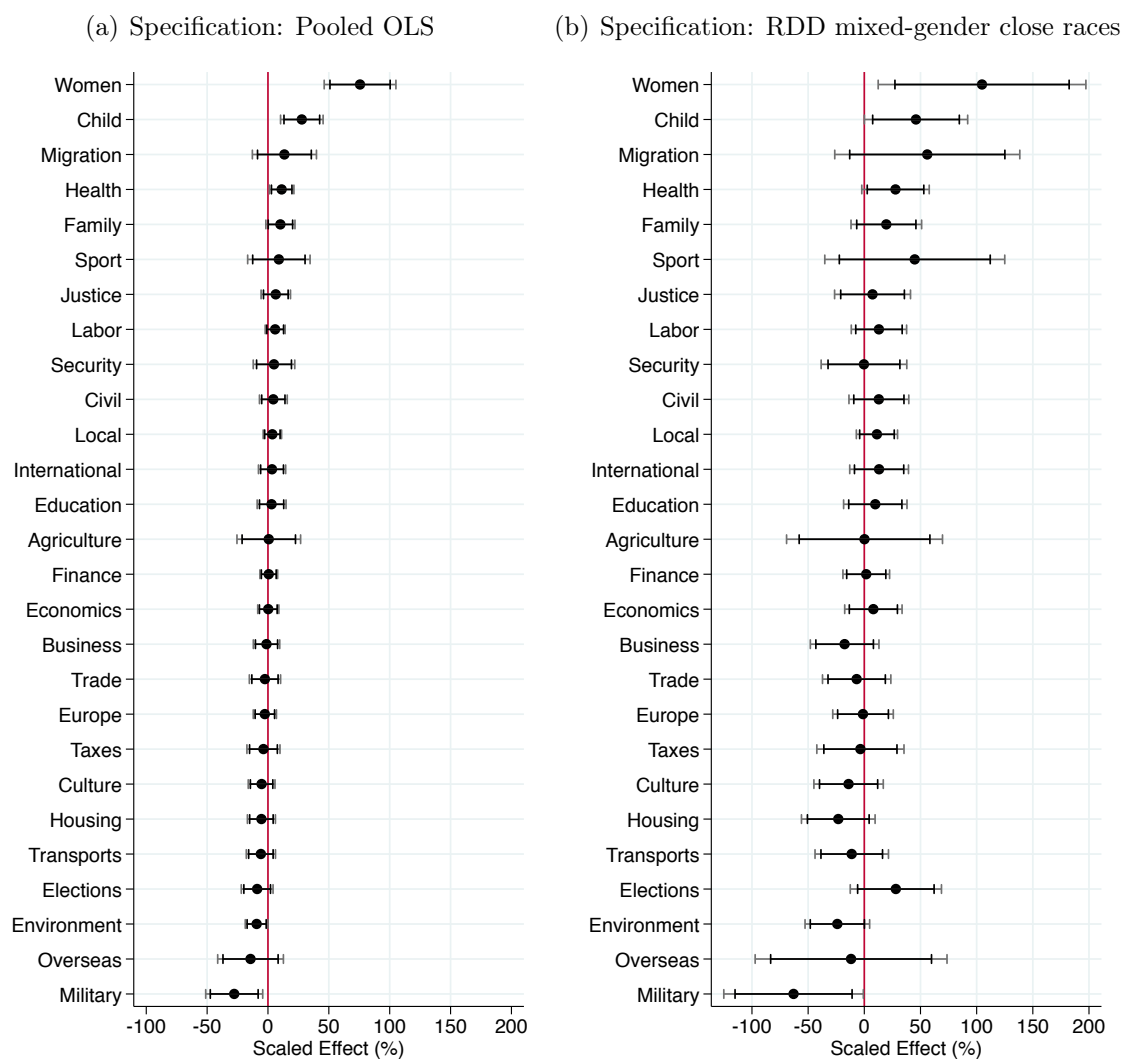


Notes: the data come from the French Lower House over the 2002-2017 period. Each row corresponds to a topic. The outcome is a dummy that equals 1 if the legislator initiates at least one amendment on the topic considered. Each dot represents the coefficient associated to the variable *Woman* divided by the average of male legislators (scaled effect). Confidence intervals are represented at the 95% level. Estimates come from the fixed-effect specifications. “Main” designates the main sample of close races defined in Section 3.1.2. “First Two” designates the sample of close races where the first woman and first man are also the first two ranked candidates at the election.

## C.8 Robustness - Alternative Sample

Figure C13 displays the results using a sub sample of candidates endorsed by political parties.

Figure C13: Gender Differences in Lawmaking in the Lower House - Only Candidates Endorsed by Political Parties



Notes: the data come from the Lower House over the period 2002-2017. Each row corresponds to a topic. The outcome is a dummy that equals 1 if the legislator initiates at least one amendment on the topic considered. Each dot represents the coefficient associated to the variable *Woman* divided by the average of male legislators (scaled effect). Confidence intervals are represented at the 95% and 90% levels. Graphs (a) and (b) respectively represent estimates from the pooled OLS specification and the RDD mixed-gender close race with the CCT bandwidth.

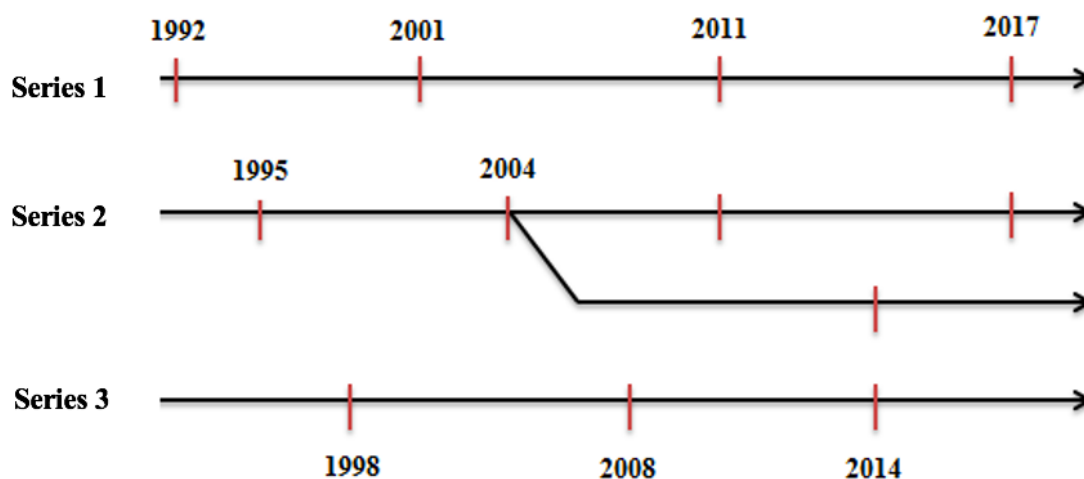
## D Evidence from the Upper House

### D.1 Election system and Gender Quotas

Figure D1 schematizes the schedule of the Upper House election system. Since 1959, a third of the Senate was renewed every 3 years, constituting three series. In the past two decades, the number of series was reduced from 3 to 2. The first series had elections in 1992, 2001, 2011 and 2017. The second had elections in 1995 and 2004. After 2004, this series was split in two (randomly) and half of the senators were re-elected in 2014 (and in 2020) and the other half in 2011 and then 2017. Finally, the last series had elections in 1998, 2008 and 2014 (and in 2020).

Gender quotas were voted in 2000. As such, they were applied during the first elections after 2000 for each series. It corresponds to 2001 (series 1), 2004 (series 2) and 2008 (series 3).

Figure D1: Upper House Election Schedule



*Notes:* This figure schematizes the schedule of the French Upper House election system. Each short vertical red line represents an election.

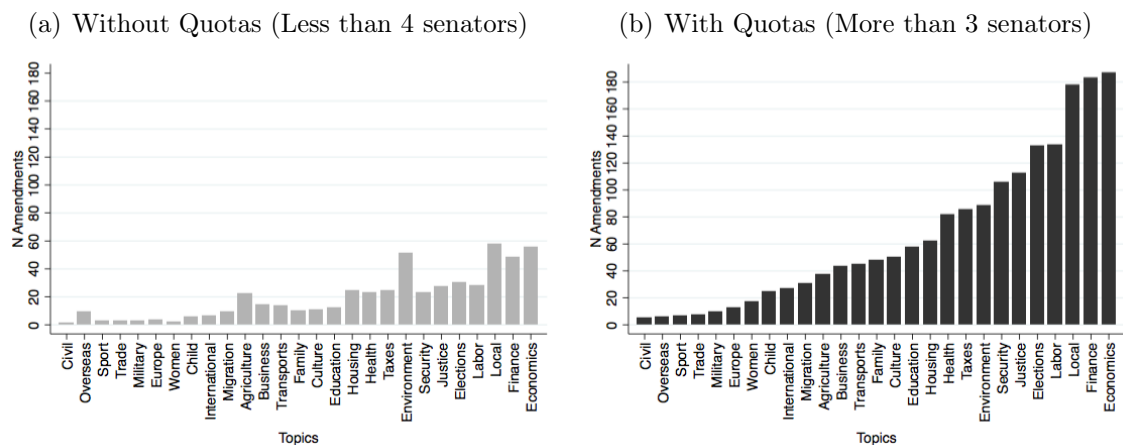
## D.2 Descriptive Statistics

Table D1: Descriptive Statistics on Constituencies' Characteristics and their Activity Related to Amendments

	(1) Mean	(2) S.D.	(3) Min	(4) Max
N Elected	3.07	1.88	1.0	12.0
Share Women Elected	0.12	0.18	0.0	1.0
Mean Age	59.04	6.63	35.2	73.1
Share Left-Wing	0.42	0.42	0.0	1.0
Share Incumbent	0.51	0.39	0.0	1.0
N Co-Sponsored Per Term	3147.60	15723.38	6.0	231239.0
N Authored Per Year	565.67	3030.58	0.0	44366.0
At Least One Authored (1=Yes)	1.00	0.07	0.0	1.0
N Authored Per Year Women-Related	8.47	37.08	0.0	488.0
Share Authored Women-Related	0.01	0.02	0.0	0.2
At Least One Authored Women-Related (1=Yes)	0.55	0.50	0.0	1.0
Observations	217			

*Notes:* the data come from the French Upper House over the period 2001-2017. *Women – Related* indicates that the amendment is identified as related to women’s issues with a dictionary-based method.

Figure D2: N Amendments Initiated by Type of District



*Notes:* the data come from the Upper-House over the period 2001-2017. Districts without quotas correspond to districts that elect strictly less than 4 senators. Districts with quotas correspond to districts that elect strictly more than 3 senators.

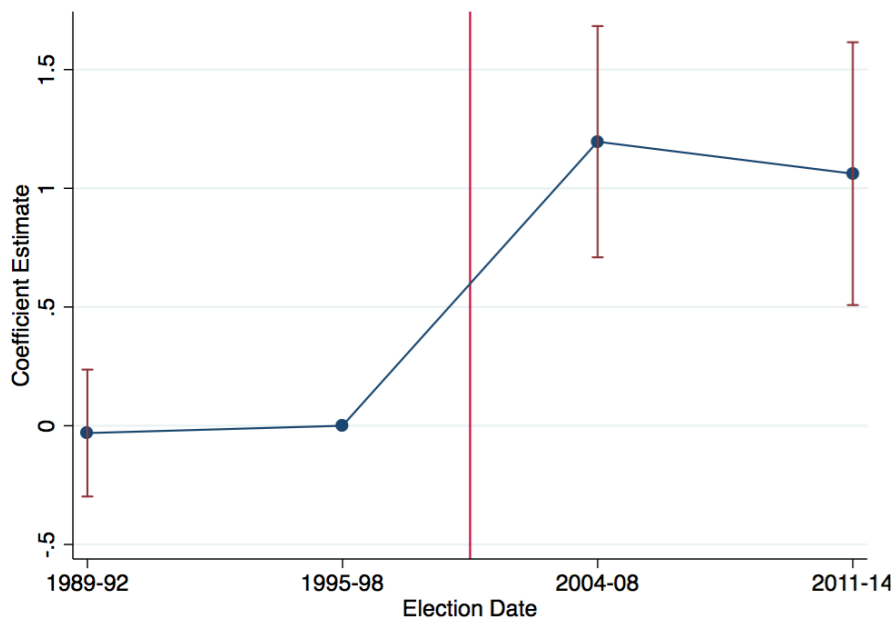
Table D2: Most Frequent Trigrams and Bigrams in the Sample of Amendments Related to Women’s Issues - Upper House

(1)	(2)	(3)	(4)	(5)	(6)
Rank	N	Keywords	N	Keywords	
		<i>Trigrams</i>		<i>Bigrams</i>	
1	111	delegation rights women	480	women men	
2	110	equality women men	265	national assembly	
3	54	professional women men	264	men women	
4	51	equality professional women	236	part time	
5	50	equal access women	185	equality professional	

*Notes:* the data come from all the amendments produced in the French Upper House over the period 2001-2017. It is restricted to amendments identified as related to women’s issues with a dictionary-based method.

### D.3 Additional Results - Impact of the Quota on the Election of Female Senators

Figure D3: Impact of the Gender Quota on the Number of Female Senators in the Upper House - DiD Estimates



*Notes:* the data come from the election results of the French Upper House over the period 1988-2017. The y-axis represents the DiD coefficient estimates. The vertical red-dashed line corresponds to the date where gender quotas were introduced.

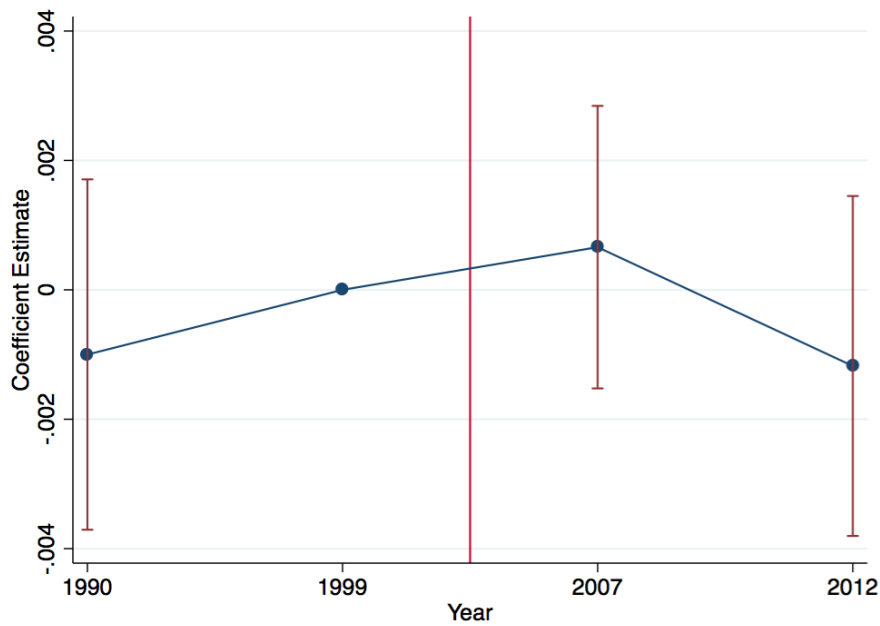


Table D3: Impact of Gender Quotas on the Election of Female Legislators in the Upper House

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)
	N Women		At Least One Woman (1=Yes)		Share Women	
Treatment*Post	1.13*** (0.25)		0.33** (0.13)		0.13** (0.05)	
Post Pool	0.22*** (0.05)		0.22*** (0.05)		0.09*** (0.02)	
Treatment*Post 1		1.20*** (0.25)		0.45*** (0.12)		0.14*** (0.05)
Treatment*Post 2		1.06*** (0.28)		0.21 (0.15)		0.12* (0.06)
Post 1		0.15*** (0.05)		0.15*** (0.05)		0.06*** (0.02)
Post 2		0.29*** (0.07)		0.29*** (0.07)		0.12*** (0.03)
Treatment	0.48*** (0.15)	0.48*** (0.15)	0.38*** (0.11)	0.38*** (0.11)	0.09*** (0.03)	0.09*** (0.03)
F-Statistic	37.3	23.2	191.6	566.2	69.2	55.5
Observations	216	216	216	216	216	216
Constituencies	72	72	72	72	72	72

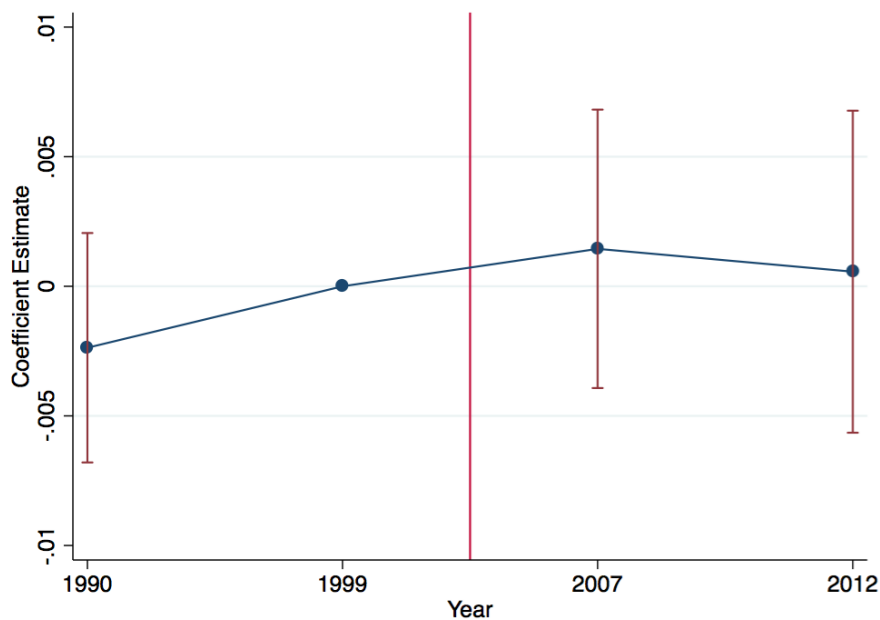
Notes: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Upper House over the period 2001-2017. The dependent variables are the number of female legislators (columns 1 and 2), a dummy that equals 1 if at least one female legislator is elected (columns 3 and 4), the share of female legislators elected (columns 5 and 6). The regressions are run at the constituency level.

Figure D4: Evolution of the Share of Women in the Population - DiD Estimates



*Notes:* the data come from the French censuses of 1990, 1999, 2007, 2012. The y-axis represents the DiD coefficient estimates. The outcome is the share of women in the population at the district level. The vertical red-dashed line corresponds to the date where gender quotas were introduced.

Figure D5: Evolution of the Unemployment Rate - DiD Estimates



*Notes:* the data come from the French censuses of 1990, 1999, 2007, 2012. The y-axis represents the DiD coefficient estimates. The outcome is the unemployment rate at the district level. The vertical red-dashed line corresponds to the date where gender quotas were introduced.

#### D.4 Additional Results - Unsupervised Methods

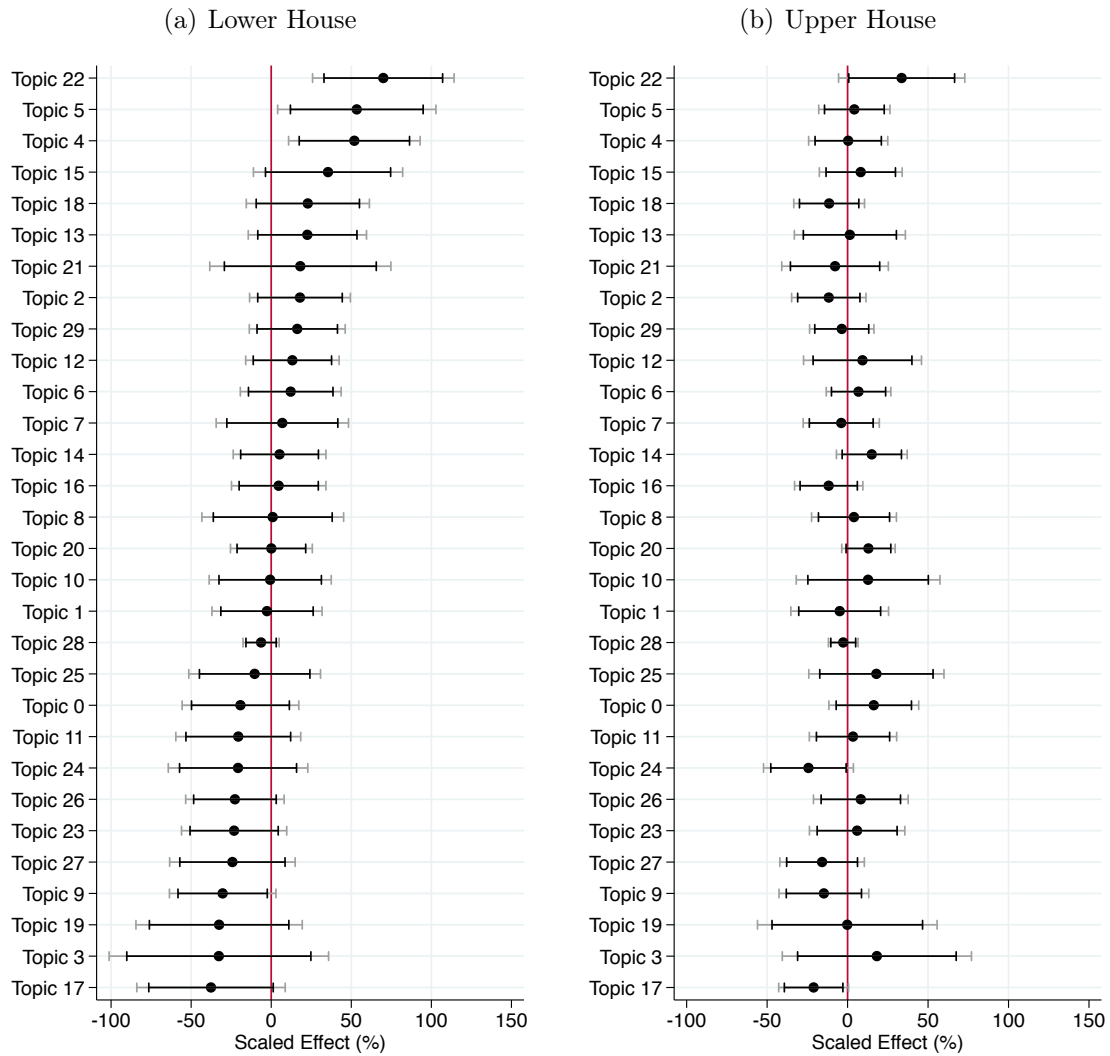
Table D4 displays the results of a joint significance test (over  $K$  equations) on the coefficient related to the variable  $Treatment * Post$  in Equation 3 and using various numbers of topics with the LDA model. We observe that the results are robust to using  $K = 30, 40, 50, 60$  and  $70$ .

Table D4: Results Using Different Number of Topics - Upper House

N Topics (1)	Test statistic $\chi^2$ (2)	p-value (3)
30	76.03	0.0000
40	124.78	0.0000
50	159.35	0.0000
60	323.19	0.0000
70	284.23	0.0000

*Notes:* the data come from the French Upper House over the period 2001-2017. The column N Topics (column 1) corresponds to the number of topics used with the LDA approach. The column Test statistic (column 2) provides the test statistic for a joint test of significance of the variable  $Treatment * Post$ . The column p-value (column 3) provides the related p-value.

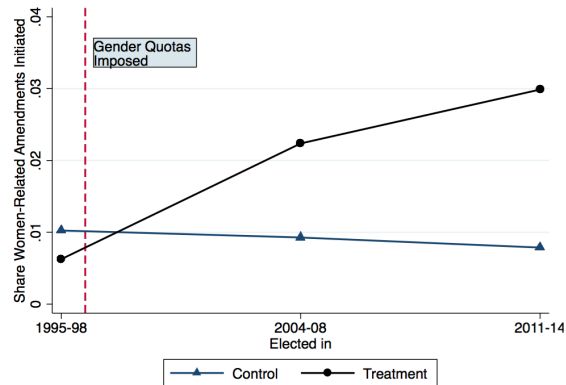
Figure D6: Gender Differences in Lawmaking - LDA model with 30 topics



Notes: each row corresponds to a topic found by the LDA approach. Confidence intervals are represented at the 95% and 90% levels. In graph (a), the data come from the Lower House over the period 2002-2017. The outcome is the share of amendments initiated by a legislator on the topic considered. Each dot represents the coefficient associated to the regression discontinuity estimates (variable *Woman*) divided by the average of male legislators (scaled effect). In Graph (b), the data come from the Upper House over the period 2001-2017. The outcome is the share of amendments produced by a district on the topic considered. Each dot represents the coefficient associated to the difference-in-differences estimates (variable *Treatment \* Post*) divided by the by the mean of the outcome in districts not targeted by the quota (scaled effect).

## D.5 Additional Results - Impact of the Quota on Lawmaking Activities

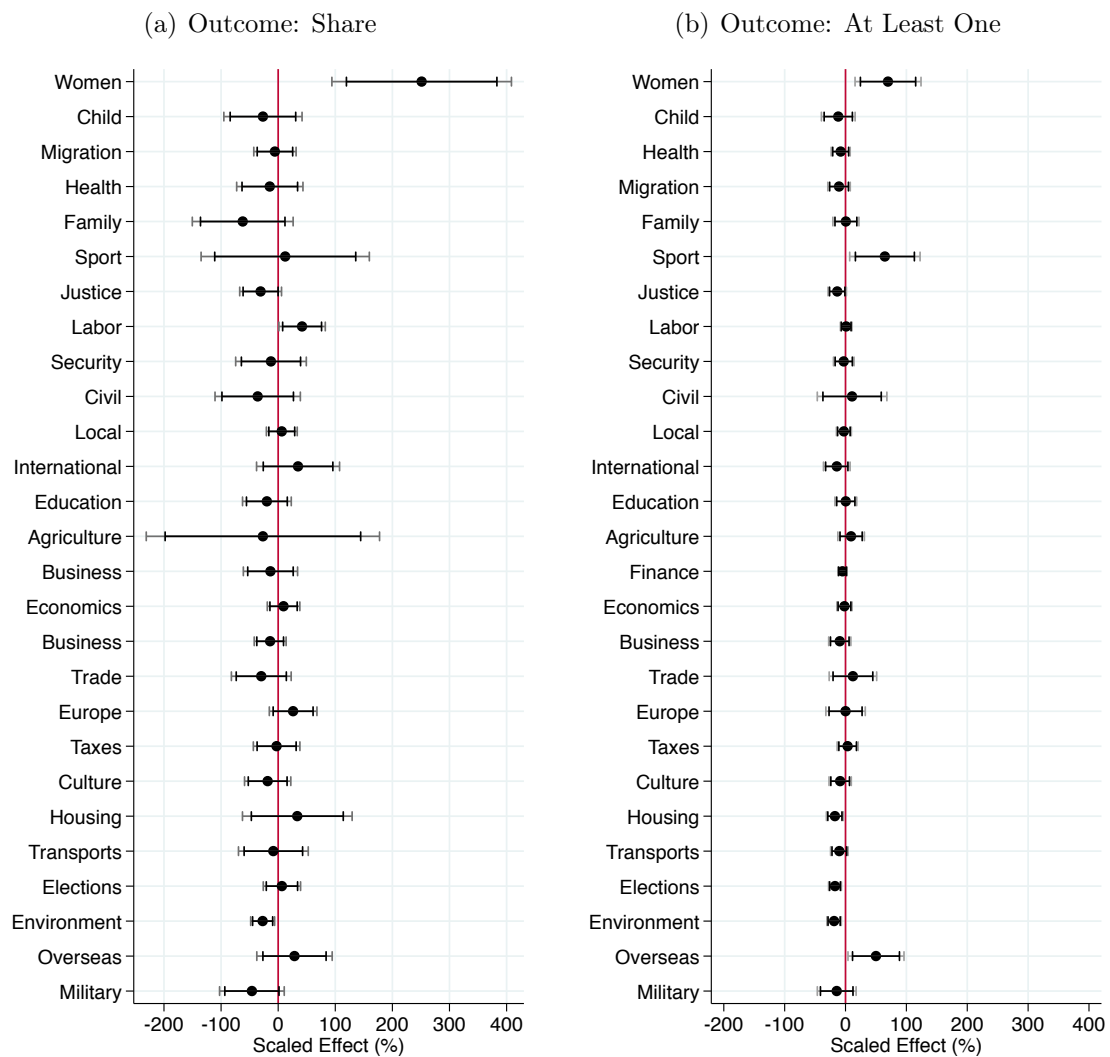
Figure D7: Impact of the Gender Quota on Authorship of Women-Related Amendments in the Upper House



*Notes:* the data come from the French Upper House over the period 2001-2017. Circles and triangles respectively designate the share of women-related amendments produced per constituency for those that have to comply with the quota and those that do not need to. The y-axis represents the share of authored women-related amendments. The x-axis represents the date at which legislators were elected. The vertical red dashed line corresponds to the time where gender quotas were introduced.

## D.6 Robustness - Alternative Outcome

Figure D8: Gender Differences in Lawmaking Using Different Outcomes - Upper House



*Notes:* the data come from the French Upper House over the period 2001-2017. Each row corresponds to a topic. Confidence intervals are represented at the 95% and 90% levels. The outcome is the share of amendments produced by a district on the topic considered in graph (a) and a dummy variable that equals one if the district has initiated an amendment related to the topic of interest in graph (b). The reduced-form strategy is used. Each dot represents coefficient of interest (associated to the variable  $Treatment * Post$ ) divided by the mean of the outcome in districts not targeted by the quota).

## E Additional Robustness Checks

### E.1 Multiple Testing Issue

*Permutation Tests on the Outcomes* - The permutation tests on the outcomes are performed as follows. The main idea is to run the same analysis with dictionaries that consist in random sets of amendments. For each of the 27 topics in the two Houses, I randomly drew 1,000 samples of amendments of equal size to the sample used in the main regression. For instance, for the women’s issues topic, the dictionary-based methods classified 3,905 amendments in the Lower House as women-related. I thus randomly drew 1,000 samples of 3,905 amendments. For each of these samples, I built a dummy equal to one if a woman initiated one of these amendments. Then, I performed the RDD analysis and obtained 1,000 t-statistics. Finally, I compared these t-statistics with the one obtained with the samples used in the body of the paper. I performed the analysis using the regression discontinuity strategy of the Lower House and the difference-in-differences strategy used in the Upper House setting.

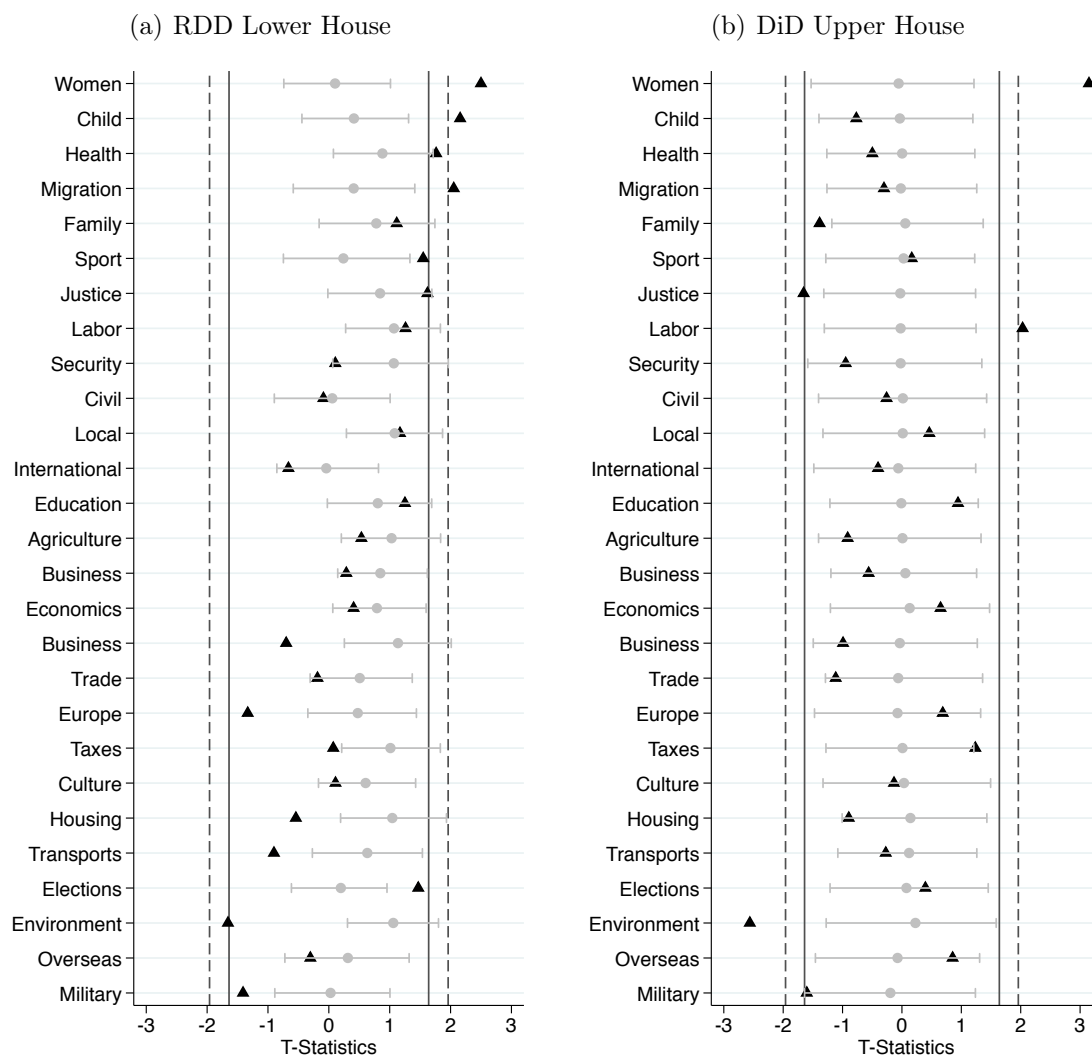
The results are displayed in Figure E1. Graph (a) corresponds to the results obtained in the Lower House. The outcome variable is a dummy that equals one if the legislator has initiated one amendment related to the random sample. For this reason, t-statistics are slightly positive on average as female legislators are slightly more likely to initiate at least one amendment in the RDD sample (see Section 6.1). Graph (b) corresponds to the results obtained in the Upper House. The outcome is the share of amendments related to a random sample of amendment. For each topic, we observe the true t-statistics corresponding to the ones obtained with the dictionary-based methods (triangle) and the random t-statistics obtained with the random samples of amendments (circles). Confidence intervals correspond to the distribution of random t-statistics lying between the 5th and 95th percentiles. We observe that it is extremely unlikely to reproduce the results using random samples of amendments. For instance, for women’s issues, the true t-statistics are above 2 in both Houses whereas the random samples deliver t-statistics averaging around 0 and between -1 and 1.

*Permutation Tests on the Treatment* - The permutation tests on the treatment consist in randomizing the treatment (gender in the lower House and type of constituency in the Upper House). For instance, in the Lower House, 300 legislators are women. Therefore, I randomly assigned to 300 legislators the treatment. Then, I performed the RDD analysis on this sample. I performed this operation 1,000 times in order to obtain 1,000 t-statistics. Finally, I compared these t-statistics with the ones obtained with the sample used in the body of the paper.

The results are displayed in Figure E2. Graph (a) corresponds to the results obtained

in the Lower House and graph (b) corresponds to those obtained in the Upper House. Confidence intervals correspond to the distribution of random t-statistics lying between the 5th and 95th percentiles when the treatment is randomized. As in the previous graph, we observe that it is highly unlikely to reproduce the results when the treatment is randomized. In both graphs, we observe that the random t-statistics always lie within the non-significance area.

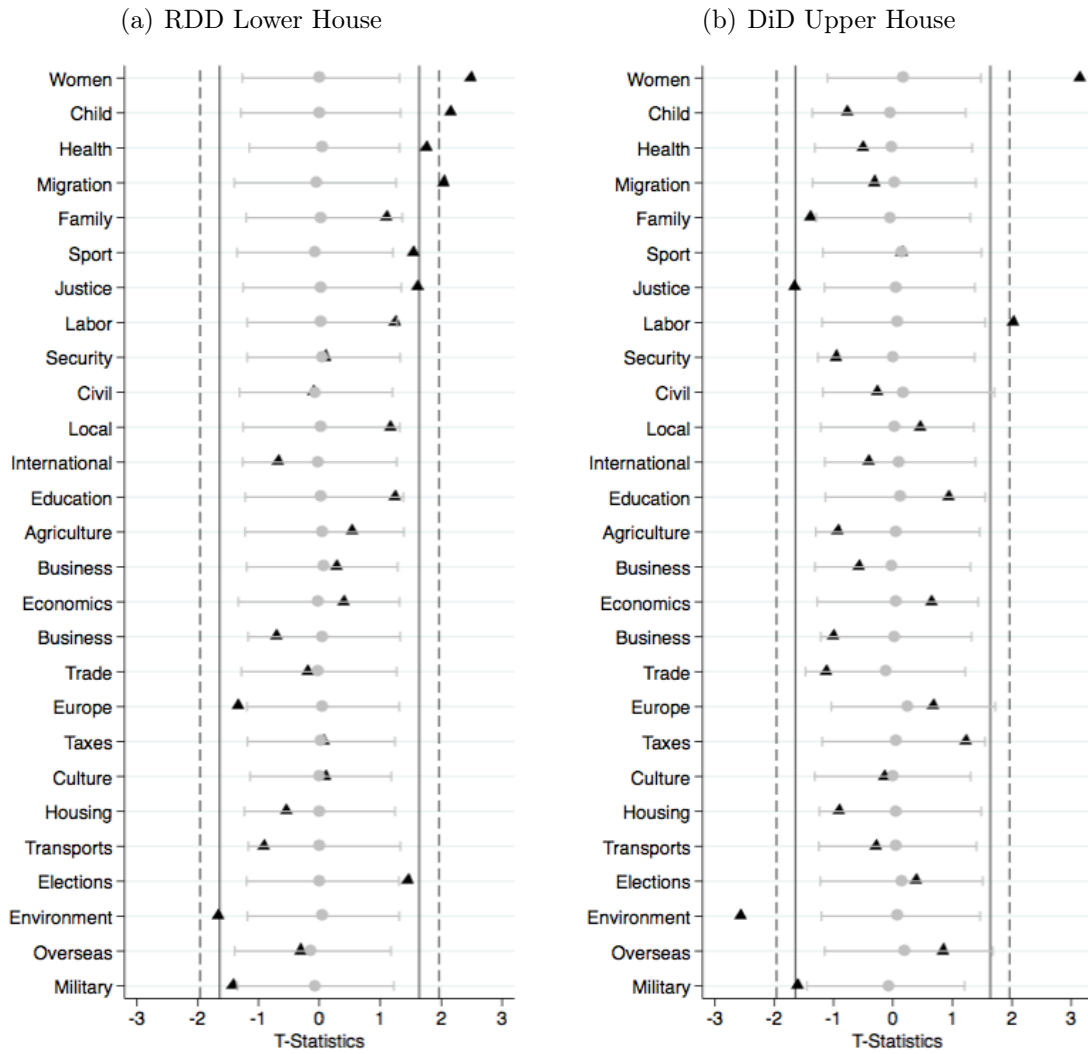
Figure E1: Permutation Tests on the Outcome - Using Random Samples of Amendments



Notes: each row corresponds to a topic. Confidence intervals are represented at the 90% level. The vertical solid and dashed black lines represent the significance levels at 10% and 5%. In graph (a), the data come from the Lower House over the period 2002-2017. Each dot represents the coefficient associated to the regression discontinuity estimates (variable *Woman* divided by the average of male legislators (scaled effect)). In Graph (b), the data come from the Upper House over the period 2001-2017. Each dot represents the coefficient associated to the difference-in-differences estimates (variable *Treatment \* Post*) divided by the mean of the outcome in districts not targeted by the quota (scaled effect).



Figure E2: Permutation Tests on the Treatment



Notes: each row corresponds to a topic. Confidence intervals are represented at the 90% level. The vertical solid and dashed black lines represent the significance levels at 10% and 5%. In graph (a), the data come from the Lower House over the period 2002-2017. Each dot represents the coefficient associated to the regression discontinuity estimates (variable *Woman* divided by the average of male legislators (scaled effect)). In Graph (b), the data come from the Upper House over the period 2001-2017. Each dot represents the coefficient associated to the difference-in-differences estimates (variable *Treatment \* Post*) divided by the mean of the outcome in districts not targeted by the quota (scaled effect).

## E.2 Alternative Outcomes and Dictionaries

*Dummy, count and share variables* - In the body of the article, the main outcomes are respectively a dummy that equals one if the legislator has initiated an amendment on a given topic for the Lower House analysis and the share of amendments produced on a given topic in the Upper House. Here, I complement this analysis by using four different outcomes: a dummy that equals one if a legislator (district) has initiated an amendment on a given topic, the share of amendments produced on a given topic, the raw number of amendments produced on a given topic and the inverse hyperbolic sine transformation of the count variable on a given topic. I present the results for the topic of women-related amendments given that it provided consistent results across the two Houses.

The results are displayed in Figures [E1](#) for the Lower House and [E2](#) for the Upper House. Overall, we observe that the results are robust to using these different outcomes.

Table E1: Authorship of Women-Related Amendments in the Lower House - Alternative Outcomes

Dependent Variable	(1) Dummy	(2) Share	(3) Count	(4) Inverse Hyperbolic Sine
Woman (1=Yes)	0.22** (0.10)	0.10** (0.05)	0.99* (0.53)	0.57** (0.27)
Bandwidth Restriction	13.0	8.9	11.2	12.8
Observations	340	233	296	335
Constituencies	249	188	227	245

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Lower House over the period 2002-2017. Standard errors clustered at the constituency level are given in parentheses. All specifications fit a local linear regression around the cutoff that allows for a break in the slope at the cutoff using respectively the CCT bandwidth. Dependent variables are a dummy that equals one if a legislator has initiated a woman-related amendment (column 1), the share of women-related amendments produced by a legislator (column 2), the number of women-related amendments produced by a legislator (column 3) and the inverse hyperbolic sine transformation of the count (column 4).

Table E2: Impact of Gender Quotas on Women-Related Amendments in the Upper House  
- Alternative Outcomes

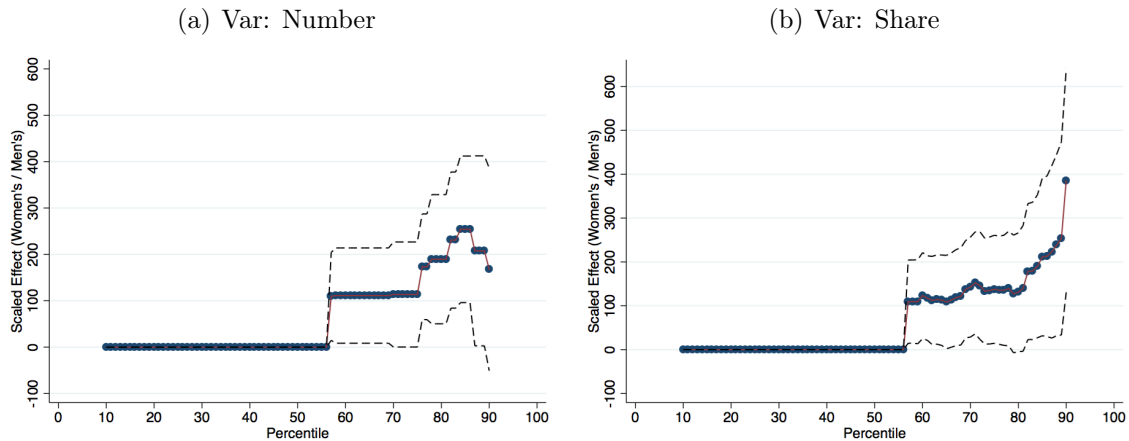
Dependent Variable	(1) Dummy	(2) Share	(3) Count	(4) Inverse Hyper- bolic Sine of the Count
main				
Treatment*Post	0.36** (0.14)	0.02*** (0.01)	1.08** (0.46)	1.56*** (0.31)
Observations	216	216	216	216
Constituencies	72	72	72	72

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Upper House over the period 2001-2017. Standard errors clustered at the constituency level are given in parentheses. *Treatment* designates districts that had to comply with a gender quota. *Post* is a dummy that equals one in the period after the introduction of gender quotas. Dependent variables are a dummy that equals one if a district has initiated a woman-related amendment (column 1), the share of women-related amendments produced by a district (column 2), the number of women-related amendments produced by a district (column 3) and the inverse hyperbolic sine transformation of the count (column 4).

Additionally, I study how the results change along the distribution of amendments' initiation by focusing on the Lower House. I create a dummy for each percentile of the distribution of amendments' initiation (using the distributions of the number and the share of women-related amendments). These dummies are equal to 1 if the legislator is above a given percentile and 0 otherwise.

The results are displayed in Figure E3 for the RDD (with CCT bandwidth) specification. We observe that women are increasingly more active as we move towards the right-tail of the distribution. For instance, looking at graph (a), we see that women are about 100% more likely to initiate at least one-amendment (57th percentile) and that they are about 200% more likely than men to be in the top 10% (90th percentile) of the distribution of legislators initiating women-related amendments, although the estimations are less precise.

Figure E3: Distributional Effects - RDD Specification with CCT bandwidth



*Notes:* The data come from the French Lower House over the period 2002-2017. The y-axis represents the scaled probability that a woman is above the related percentile of women-related amendments' initiation as compared to a male legislator. The x-axis represents the percentiles of the distribution of the variable of interest. Confidence intervals are represented at the 95% level. In graphs (a) and (b), the outcome variables are respectively the number and the share of women-related amendments.

*Amendments without a topic* - The dictionary-based methods allow to attribute a topic to nearly 90% of amendments. One could wonder whether there exists gender differences in the initiation of the remaining 10% - thereafter unlabeled amendments. To study this question, I construct an outcome that corresponds to the initiation of an unlabeled amendment (respectively a dummy variable for the Lower House and share of unlabeled amendments for the Upper House) and use the same empirical strategies. The results are respectively displayed in Tables E3 for the Lower House and E4 for the Upper House. They suggest that is limited, if none, gender differences in the initiation of unlabeled amendments. Additionally, I also control estimate the main specifications using women-related amendments as outcome variables and control for the share of unlabeled amendments. The results are displayed in Tables E5 and E6. They remain essentially unchanged.

Table E3: Authorship of Unlabeled Amendments - Lower House

<i>Dep. Var.: At Least one Amendment Initiated (1=Yes)</i>						
Specification	(1)	(2)	(3)	(4)	(5)	(6)
	Pooled OLS	Fixed Effects		<i>Regression Discontinuity</i>		
			Poly	LLR IK	LLR CCT	LLR CCT/2
Woman (1=Yes)	0.01 (0.03)	0.07 (0.05)	0.09 (0.06)	0.05 (0.08)	0.07 (0.10)	0.13 (0.13)
Bandwidth Restriction			None	20	12	6
Observations	1663	1663	857	491	326	178
Constituencies	598	598	486	325	242	154

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Lower House over the period 2002-2017. Standard errors clustered at the constituency level are given in parentheses. Controls in specifications of columns 1 and 2 include the age at the beginning of the term, the political inclination (left or right-wing), the incumbency status, the margin of victory at the election, the female participation rate to the labor market in the constituency and term fixed-effects. Controls in column 2 also include constituency fixed-effects. Controls in column 3 include a second order polynomial in the running variable. Specifications of columns 4, 5 and 6 fit a local linear regression around the cutoff that allows for a break in the slope at the cutoff using respectively the IK, the CCT and half the CCT bandwidth. The “Control Mean” line designates the outcome mean for the sample of male legislators. The “Scaled Effect” line designates the impact of female legislators scaled to the mean of male legislators (Treatment Effect/Control Mean).

Table E4: Impact of Gender Quotas on the Share of Unlabeled Amendments in the Upper House

Dependent Variable	(1) Share
Treatment*Post	-0.04 (0.04)
Observations	216
Constituencies	72

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Upper House over the period 2001-2017. Standard errors clustered at the constituency level are given in parentheses. *Treatment* designates districts that had to comply with a gender quota. *Post* is a dummy that equals one in the period after the introduction of gender quotas. The dependent variable is the share of unlabeled amendments using the dictionary-based methods

Table E5: Authorship of Women-related Amendments Controlling for the share of Unclassified Amendments - Lower House

<i>Dep. Var.: At Least one Amendment Initiated (1=Yes)</i>						
Specification	(1)	(2)	(3)	(4)	(5)	(6)
	Pooled OLS	Fixed Effects		<i>Regression Discontinuity</i>		
			Poly	LLR IK	LLR CCT	LLR CCT/2
Woman (1=Yes)	0.17*** (0.03)	0.18*** (0.05)	0.21*** (0.06)	0.20*** (0.08)	0.23** (0.10)	0.29** (0.12)
Control Mean	0.22	0.22	0.21	0.22	0.21	0.19
Scaled Effect	75.8	82.6	102.7	92.1	110.7	153.8
Bandwidth Restriction			None	20.1	13.1	6.5
Observations	1663	1663	857	491	341	187
Constituencies	598	598	486	325	249	159

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Lower House over the period 2002-2017. Standard errors clustered at the constituency level are given in parentheses. All specifications control for the share of unclassified amendments. Controls in specifications of columns 1 and 2 include the age at the beginning of the term, the political inclination (left or right-wing), the incumbency status, the margin of victory at the election, the female participation rate to the labor market in the constituency and term fixed-effects. Controls in column 2 also include constituency fixed-effects. Controls in column 3 include a second order polynomial in the running variable. Specifications of columns 4, 5 and 6 fit a local linear regression around the cutoff that allows for a break in the slope at the cutoff using respectively the IK, the CCT and half the CCT bandwidth. The “Control Mean” line designates the outcome mean for the sample of male legislators. The “Scaled Effect” line designates the impact of female legislators scaled to the mean of male legislators (Treatment Effect/Control Mean).

Table E6: Impact of Gender Quotas on the Share of Women-related Amendments Controlling for the Share of Unlabeled Amendments in the Upper House

	(1)
Dependent Variable	Share
Treatment*Post	0.02*** (0.01)
Observations	216
Constituencies	72

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Upper House over the period 2001-2017. Standard errors clustered at the constituency level are given in parentheses. *Treatment* designates districts that had to comply with a gender quota. *Post* is a dummy that equals one in the period after the introduction of gender quotas. The dependent variable is the share of unlabeled amendments using the dictionary-based methods

Finally, one may wonder whether the results are sensitive to amendments that are

wrongly categorized within the topic of women’s issues. For instance, this could happen if legislators talked about "women and men" as a general synonym for humanity or alternatively if they were to mention specific women. To study these two questions, I first manually checked the amendments and removed those that are wrongly classified as women-related. Second, I implemented a Named Entity Recognition procedure (with *spacy* on python) and removed amendments that mentioned women (83 amendments, about 2% of the women-related amendments).

The results are displayed in Tables E7 (Lower House) and E8 (Upper House). We observe that they are essentially similar and therefore robust to removing these two types of amendments.

Table E7: Authorship of Women-Related Amendments Manually Checked and without NER - Lower House

<i>Dep. Var.: At Least one Amendment Initiated (1=Yes)</i>						
Specification	(1) Pooled OLS	(2) Fixed Effects	(3)  Poly	(4)  LLR IK	(5)  LLR CCT	(6)  LLR CCT/2
<i>Panel A: Manually Checked</i>						
Woman (1=Yes)	0.16*** (0.03)	0.16*** (0.05)	0.23*** (0.06)	0.22*** (0.08)	0.24** (0.10)	0.27** (0.12)
Bandwidth Restriction			None	20	13	6
Observations	1663	1663	857	491	326	178
Constituencies	598	598	486	325	242	154
<i>Panel B: without NER</i>						
Woman (1=Yes)	0.17*** (0.03)	0.19*** (0.05)	0.21*** (0.06)	0.20*** (0.08)	0.21** (0.10)	0.27** (0.12)
Bandwidth Restriction			None	20	13	7
Observations	1663	1663	857	491	341	187
Constituencies	598	598	486	325	249	159

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Lower House over the period 2002-2017. Standard errors clustered at the constituency level are given in parentheses. Controls in specifications of columns 1 and 2 include the age at the beginning of the term, the political inclination (left or right-wing), the incumbency status, the margin of victory at the election, the female participation rate to the labor market in the constituency and term fixed-effects. Controls in column 2 also include constituency fixed-effects. Controls in column 3 include a second order polynomial in the running variable. Specifications of columns 4, 5 and 6 fit a local linear regression around the cutoff that allows for a break in the slope at the cutoff using respectively the IK, the CCT and half the CCT bandwidth. The “Control Mean” line designates the outcome mean for the sample of male legislators. The “Scaled Effect” line designates the impact of female legislators scaled to the mean of male legislators (Treatment Effect/Control Mean).

Table E8: Impact of Gender Quotas on the Share of Unlabeled Amendments in the Upper House

Dependent Variable	(1) Share
<i>Panel A: Manually Checked</i>	
Treatment*Post	0.01*** (0.00)
Observations	216
Constituencies	72
<i>Panel B: Without NER</i>	
Treatment*Post	0.02*** (0.01)
Observations	215
Constituencies	72

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Upper House over the period 2001-2017. Standard errors clustered at the constituency level are given in parentheses. *Treatment* designates districts that had to comply with a gender quota. *Post* is a dummy that equals one in the period after the introduction of gender quotas. The dependent variable is the share of unlabeled amendments using the dictionary-based methods

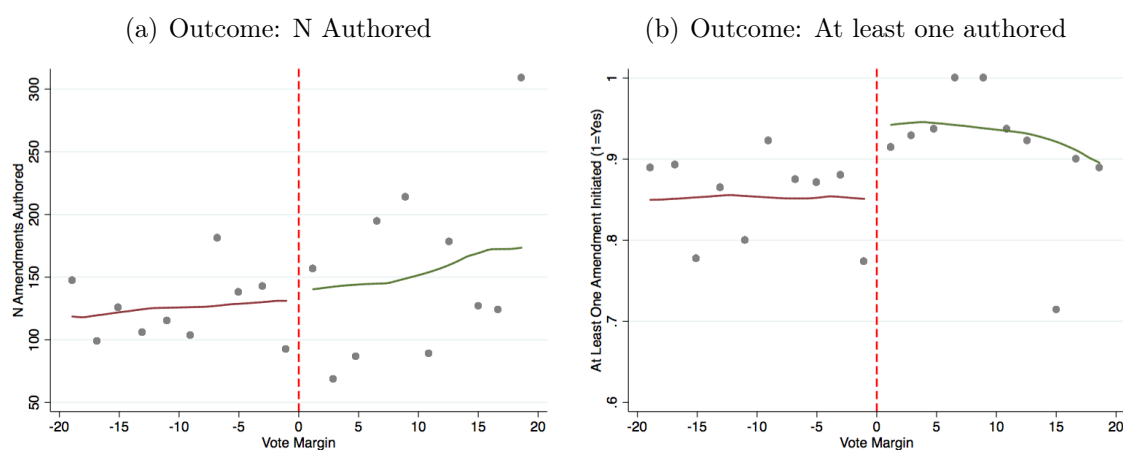


## F Mechanisms

### F.1 Are Women More Active Overall?

Figure F1 displays the relationship between the vote margin and two indicators of parliamentary activities (number of amendments authored per term for graph (a) and the probability to author at least one amendment for graph (b)). Looking at graph (a), we observe that female and male legislators initiate as many amendments. In graph (b), we observe a small discontinuity where female legislators seem to be slightly more likely to initiate at least one amendment. Nevertheless, a closer look at the graph reveals that this discontinuity is driven by the first dot on the left-side of the cutoff. Removing this set of observations, it is difficult to conclude on the existence of a discontinuity. This suggests that there are very limited gender differences in overall parliamentary activities.

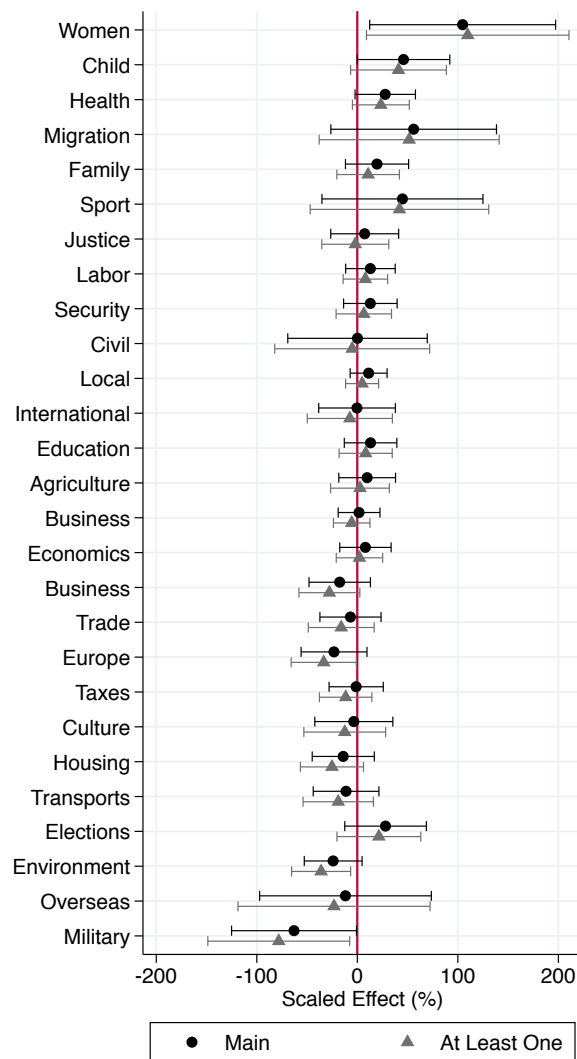
Figure F1: Gender Differences in Overall Parliamentary Activities



*Notes:* the data come from the French Lower House over the period 2002-2017. The outcomes are the number of amendments authored (graph a) and a dummy equal to one if the legislator has authored at least one amendment (graph b). The x-axis represents the vote margin between the first woman and the first man in a mixed-gender election. On the right side of the vertical dashed line, a woman is elected whereas on the left it is a man. The solid lines correspond to a lowest fit of the bin-averages. There are 10 bins on each side of the cutoff.

Figure F2 displays the main results for the Lower House when the sample includes all the legislators (*Main*) and only those that have initiated at least one amendment (*At Least One*). The results are essentially similar.

Figure F2: Gender Differences in Lawmaking in the Lower House - Removing Unproductive Legislators



Notes: the data come from the French Lower House over the 2002-2017 period. Each row corresponds to a topic. The outcome is a dummy that equals 1 if the legislator initiates at least one amendment on the topic considered. Each dot represents the coefficient associated to the variable *Woman* divided by the average of male legislators (scaled effect). Confidence intervals are represented at the 95% level. Estimates come from the fixed-effect specifications. "Main" designates the main sample used in the analysis. "At Least One" designates the sub-sample of legislators that have initiated at least one amendment overall.

## F.2 Are Gender Differences Driven by Other Characteristics Correlated with Gender?

This section brings additional evidence on whether gender differences are driven by other characteristics correlated with gender. Table F1 tests which characteristic is correlated with gender. I use the individuals characteristics of legislators as outcome variables in the RDD specification (CCT bandwidth). These variables are the age, and dummy variables that equal 1 if the legislator was elected before 2002, is an incumbent, is from a left-wing party, was previously a manager, in a teaching position, a former politician or retired (top 4 occupations out of 12). We observe that female legislators are on average 7.5 years younger than male legislators, that they are less likely to be incumbents and more likely to be from a left-wing party.

Table F1: Testing the Continuity Assumption for the Characteristics of Legislators

	(1) Discontinuity Estimate	(2) Bandwidth Restriction	(3) N Observations
Age	-7.672*** (2.152)	11.43	277
ElectedBefore2002	.039 (.043)	11.09	272
Incumbent	-.558*** (.091)	12.25	294
Left	.322** (.111)	11.78	285
Manager	.008 (.098)	12.63	304
Teaching	.027 (.055)	20.26	453
Politician	.05 (.067)	12.43	298
Retired	.019 (.055)	14.76	347

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Lower House over the period 2002-2017. Standard errors clustered at the constituency level are given in parentheses. Each line corresponds to one dependent variable. Column 1 displays the discontinuity estimates, column 2 displays the bandwidth restrictions and column 3 the number of observations. The model fits a local linear regression around the cutoff that allows for a break in the slope at the cutoff. The bandwidth is computed following the CCT approach.

Table F2: Heterogeneity Analysis - Authorship of Women-Related Amendments in the Lower House

<i>Dep. Var.: At Least one Amendment Initiated (1=Yes)</i>			
	(1)	(2)	(3)
Woman*Left	0.05 (0.11)		
Woman*Age		-0.00 (0.01)	
Woman*Incumbent			0.19* (0.11)
Bandwidth Restriction	13.1	13.1	13.1
Observations	341	341	341
Constituencies	249	249	249

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Lower House over the period 2002-2017. Standard errors clustered at the constituency level are given in parentheses. The specifications fit a local linear regression around the cutoff that allows for a break in the slope at the cutoff using respectively the CCT bandwidth.

### F.3 On the Contribution of Female Legislators to Women’s Issues

#### F.3.1 Discussion on the Role of Political Parties in the Making of Sole-Authored and Rejected Amendments

In Section 6.3.1, I argued that sole-authored amendments and rejected amendments by a majority legislators are less likely to stem from the will of political parties than regular amendments. In this Section, I provide several arguments supporting this claim.

*Sole-Authored Amendments* - I provide three pieces of evidence that tend to support the idea that sole-authored amendments tend to better reflect the individual interest of legislators than regular amendments. First, if this assertion is true, we should observe relatively more sole-authored amendments from legislators whose political party is in the majority in Parliament. This is because bills would reflect the views of the party and not those of individual legislators (especially since most bills originate from the government, which comprises higher-ranking party officials). Quantitative evidence seems to support this idea. During the period 2002-2017, the share of sole-authored amendments was about 60% for legislators from majority parties, falling to 35% in periods of minority. Second, the guidelines indicating how to write an amendment in Parliament clearly state that the more co-sponsors an amendment has, the more likely it is to pass.<sup>46</sup> Therefore,

<sup>46</sup>They state that “*In the case of the co-sponsorship of an amendment [...] by members of the same political group, the political weight of the amendment will be precisely evaluated by the Lower House and*

the existence of sole-authored amendments cannot be explained by positive expectations regarding the success rate. Third, qualitative evidence from interviews with several parliamentary assistants working in the Lower House also confirms this classification.<sup>47</sup>

*Rejected Amendments from Majority Legislators* - In practical terms, a majority in Parliament means that the party can pass any bill and amendment.<sup>48</sup> It also means that legislators have less incentives to amend existing bills since these bills should already reflect parties' interests. Quantitative evidence seem to support this argument as about 27% of majority legislators' amendments are accepted, against 7% for those in the minority. Legislators in the majority also initiate 50% fewer amendments on average. Given this low incentive to amend and the high probability of an amendment passing, rejected amendments from majority legislators are more likely to stem from their individual interest than regular amendments. Ruling out the possibility of cognitive biases from political parties, it is difficult to conceive of cases where a party would both ask a legislator to produce an amendment and at the same time ask them to vote against it.

### **F.3.2 Could the True interest of Female Legislators Lie in a Different Topic than Women's Issues**

Female legislators seem to be interested in women's issues. But it could be that their true interest lies in a different, albeit related, topic which is often associated with women's issues. To investigate this question, I first analyze whether the greater contribution of female legislators is driven by their choice of committees. In Figure F3, I show that in all the committees, female legislators seem to contribute more to women's issues.

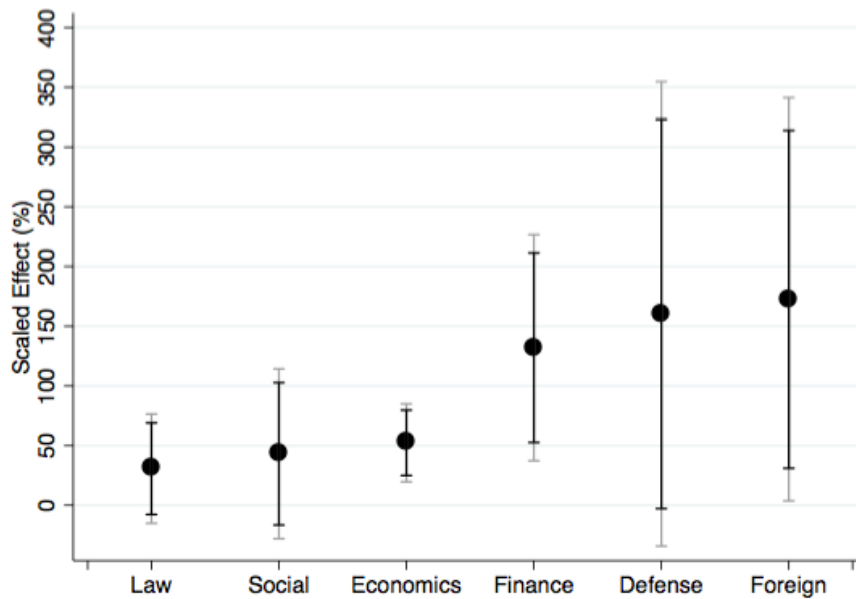
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*by the government. Sometimes, the amendment will mention that the author carries the amendment in the name of that political group, which obviously add political weight to the amendment".* Source: Rédiger la Loi. Guide de rédaction des propositions de loi et des amendements.

<sup>47</sup>I interrogated 6 parliamentary assistants who all pointed towards sole-authored amendments as a way to proxy the individual interest of legislators. They also agreed on the fact that amendments backed by the entire group often originate directly from the political party.

<sup>48</sup>Over the period 2002-2017, two parties have successively had a majority: the right-wing from 2002 to 2012 (*UMP*) and the left-wing from 2012 to 2017 (*PS*).

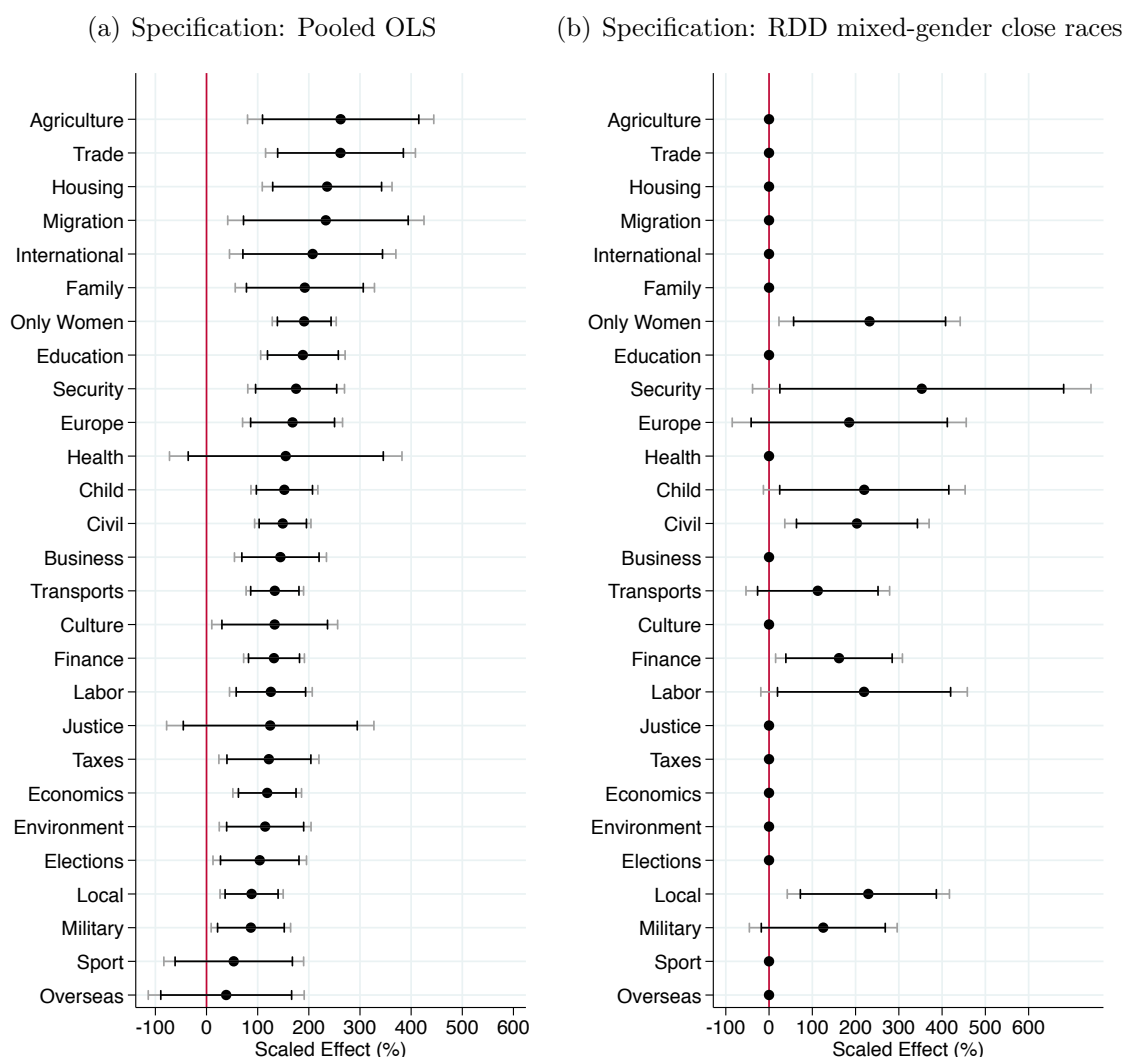
Figure F3: Results by Committee



*Notes:* The data come from the French Lower House over the period 2002-2017. Confidence intervals are represented at the 95% and 90% levels. The x-axis represents the committees. The y-axis represents the coefficient associated to the variable *Woman* divided by the average of male legislators (scaled effect) in a regression where the outcome is a dummy that equals 1 if the legislator initiates at least one women-related amendment. The estimates are obtained with the Pooled OLS specification controlling for age at the beginning of the term, the political inclination (left or right-wing), the incumbency status, the margin of victory at the election, the female participation rate to the labor market in the constituency and term fixed-effects.

To complement the previous findings, I also perform a joint-topic analysis. I restrict the analysis to amendments on women’s issues and study on which other topics gender differences arise. Figure F4 displays the results. We observe that the greater involvement of female legislators in women’s issues comes from an increase in amendments related to a wide range of issues including international affairs, security, Europe, civil servants, business, transports, finance, taxes and local issues. This strongly supports the hypothesis that female legislators disseminate women’s issues across a wide range of topics rather than the idea that their true interest lies in a different topic, albeit related, to women’s issues.

Figure F4: Extension to Other Topics: Authorship Analysis Within Women-Related Amendments



Notes: the data come from the French Lower House over the period 2002-2017. The sample is restricted to women-related amendments. About 91.34% of women-related amendments are also related to another topic. Each row corresponds to a topic within the sample of women-related amendments. The outcome is a dummy that equals 1 if the legislator initiates at least one amendment on the topic considered. Each dot represents the coefficient associated to the variable *Woman* divided by the average of male legislators (scaled effect). Confidence intervals are represented at the 95% level. Graphs (a) and (b) respectively represent estimates from the pooled OLS and the RDD mixed-gender close race specifications with the CCT bandwidth. Because of the large standards errors for several topics in graph (b), only coefficients significant at the 10% level are displayed.

### F.3.3 Influence of Close Collaborators

In this section, I study the role of the influence of close collaborators. Legislators usually work with a team of 2 to 4 parliamentary assistants. It could be possible that the composition of this team depends on the legislator's gender and partly determines the activity of this legislators. More specifically, female legislators may hire more female

assistants who would push for more women-related amendments. In Table F3, I show that this mechanism is unlikely to be at play. The share of women among the close collaborators has little if no effect on the initiation of women-related amendments.

Table F3: Authorship of Women-Related Amendments Depending on the Composition of the Team of Parliamentary Assistants - Lower House

<i>Dep. Var.: At Least one Women-Related Amendment Initiated (1=Yes)</i>			
	(1)	(2)	(3)
Woman (1=Yes)	0.13*	0.15*	0.11
	(0.08)	(0.08)	(0.08)
AboveMedianShareFemaleAssistant			-0.05
			(0.05)
Woman*AboveMedianShareFemaleAssistant			0.06
			(0.11)
Share Female Assistant Above Median	No	Yes	All
Control Mean	0.43	0.36	
Scaled Effect	30.8	41.1	
Observations	218	235	453

*Notes:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The data come from the French Lower House over the period 2012-2017 for which information on the parliamentary assistants is available. Controls include the age at the beginning of the term, the political inclination (left or right-wing), the incumbency status, the margin of victory at the election, the female participation rate to the labor market in the constituency. The “Control Mean” line designates the outcome mean for the sample of male legislators. The “Scaled Effect” line designates the impact of female legislators scaled to the mean of male legislators (Treatment Effect/Control Mean). The median share of female assistant is 2/3.

### F.3.4 Are the Amendments Consequential?

To provide evidence on the importance of amendments, I restrict the sample to cases where the amendments are likely to be more consequential. These cases exploit the outcome of the amendment (accepted or rejected) and the motivation used by legislators to defend the amendment.<sup>49</sup> Using these two features, I exploit three cases: (i) accepted amendments, (ii) amendments with unique motivation and (iii) amendments without short motivations. Below, I motivate the use of these three cases.

*Accepted Amendments* - An amendment can be rejected or accepted. If it is accepted, it will be incorporated into the law and produce real consequences. Therefore, it is logical that accepted amendments will be more consequential than rejected ones.

<sup>49</sup>As explained in Section 2.2.2 amendment have two components: a content and a motivation. The content is usually short, standardized and follows guidelines set by the Parliament. On the other hand, the motivation is used by legislators to defend the amendment and explain why it is important and should be accepted. This motivation cannot exceed two minutes of oral speech.



*Removing Similar Motivations* - Some legislators use amendments for the sole purpose of slowing down the legislative process. This is usually called *obstructionism* and can, in some Parliaments, take the form of very long speeches. In the French Parliament, it usually takes the form of a large number of almost identical amendments on a given topic, mainly because amendments are necessarily examined. To identify these amendments, I remove those that have a similar oral motivation (32% of all amendments).<sup>50</sup> The reason for targeting the motivation rather than the content is that two amendments can have the same motivation but not the same content. Note that this restriction could also remove amendments that are poorly motivated and aim for instance at rewording a bill, without trying to change its consequences. As these amendments are also likely to be inconsequential, this does not seem to be an issue for this section.

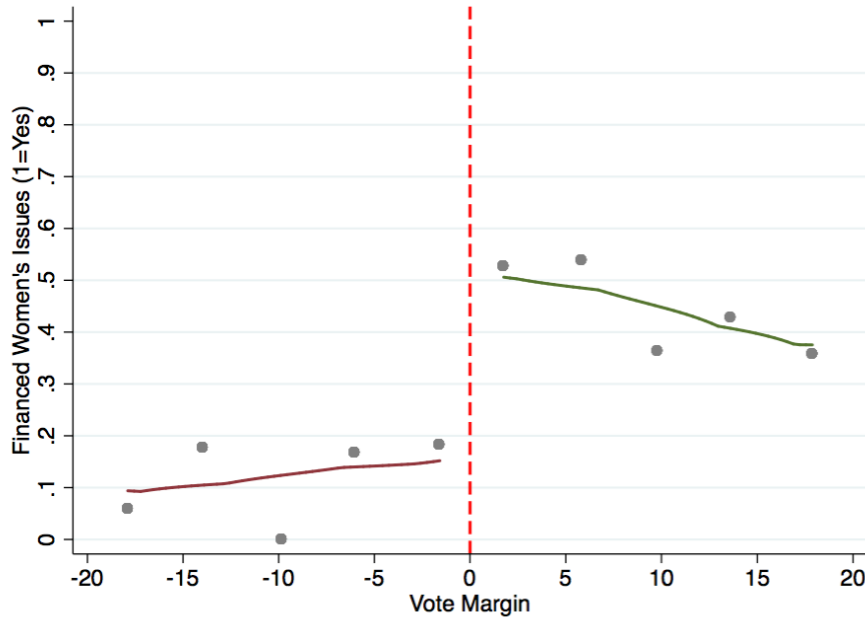
*Removing Short Motivations* - The motivation cannot exceed two minutes of oral speech (except in rare cases). However, there is no lower bound on the length of the motivation. Therefore, some amendments have a very short motivation and are usually initiated for the sole purpose of changing the wording of a bill, without introducing consequential changes (as explained above). To remove amendments with a short motivation, I computed the distribution of the length of oral motivations and I removed all the amendments that are in the first quartile of the distribution (less than 27 words).

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<sup>50</sup>In practice, I removed the stop words and stemmed the content of the oral motivations and tagged two amendments as similar if they have the same oral motivation. Then, I removed all the tagged amendments and replicated the results.

### F.3.5 Evidence From Legislators' Discretionary Funds

Figure F5: Legislator's Use of Discretionary Funds for Women's Issues



*Notes:* the data come from the French Lower House over the period 2012-2017. The outcome is a dummy that equals 1 if the legislator has funded associations or projects related to women's issues. The x-axis represents the vote margin between the first woman and the first man in a mixed-gender election. On the right side of the vertical dashed line, a woman is elected whereas on the left it is a man. The solid lines correspond to a lowess fit of the bin-averages. There are 5 bins on each side of the cutoff.

Table F4: Spending on Women’s Issues (Amount) - Lower House

<i>Dep. Var.: Amount Legislator Has Funded Women’s Issues (in euros)</i>					
Specification	(1) Pooled OLS	(2)  Poly	(3)  LLR IK	(4)  LLR CCT	(5)  LLR CCT/2
Woman (1=Yes)	13811.51*** (3069.11)	15624.45*** (5434.58)	14977.76* (8519.26)	15407.90* (8488.81)	11764.38 (10508.78)
Control Mean	1469.48	1750.33	1851.69	1851.69	1851.69
Scaled Effect	939.9	892.7	808.9	832.1	635.3
Bandwidth Restriction		None	18.6	18.9	9.5
Observations	540	244	147	148	87
Constituencies	540	244	147	148	87

*Notes:* \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. The data come from the French Lower House over the period 2012-2017. Controls in specifications of column 1 include the age at the beginning of the term, the political inclination (left or right-wing), the incumbency status, the margin of victory at the election, the female participation rate to the labor market in the constituency. Controls in column 2 include a second order polynomial in the running variable. Specifications of columns 3, 4 and 5 fit a local linear regression around the cutoff that allows for a break in the slope at the cutoff using respectively the IK, the CCT and half the CCT bandwidth. The “Control Mean” line designates the outcome mean for the sample of male legislators. The “Scaled Effect” line designates the impact of female legislators scaled to the mean of male legislators (Treatment Effect/Control Mean).