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Give more, receive more ?

Gender and cooperativeness among politicians

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Give more, receive more? Gender and cooperativeness among politicians

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Abstract

This paper investigates gender-based differences in cooperativeness among French parliamentarians by analyzing legislative behaviors, such as cosponsorship and voting patterns. Using a comprehensive dataset covering all bills and amendments authored in France's Lower House between 2012 and 2022, the study employs multivariate regressions and a regression discontinuity design (RDD) in close elections to approximate the random assignment of gender. The findings reveal that female parliamentarians attract fewer cosponsors, particularly from members of their own parties, despite being more likely to support their colleagues' initiatives and exhibit higher voting participation. This asymmetry highlights a paradox: while female legislators display greater cooperative and altruistic behaviors, they receive less reciprocal backing, limiting their legislative influence. The observed patterns are driven by behavioral gender differences rather than differences in observable characteristics, thematic alignment, or the quality of the politicians.

Keywords: gender, cooperativeness, politicians, parliament

JEL Classification: J16, D72, D73

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1 Introduction

The share of women in the French parliament has risen from 5% in the 1990s to almost 40% in the late 2010s. This rapid increase has been largely driven by the implementation of financial incentives requiring political parties to nominate an equal number of male and female candidates for parliamentary elections.[1] However, questions remain as to whether this rise in female participation translates into tangible improvements in legislative processes and outcomes. Specifically, does gender diversity enhance cooperation, a vital yet often overlooked dimension of legislative efficiency?

The ability to cooperate is likely to affect the productivity and efficiency of parliamentarians. Cooperativeness is a critical skill in politics but is often underemphasized. Indeed, while legislation can be introduced by individuals, the collaborative work conducted within political parties or between political groups to improve, disseminate, and pass legislation is an essential dimension of parliamentary work. This skill becomes even more important in a polarized political environment (Barber et al. (2015)). More broadly, the literature demonstrates that cooperation is a crucial element of economic efficiency across various contexts.[2]

In this article, we examine the ability of male and female parliamentarians to cooperate by focusing on several dimensions of cooperation. We study gender differences in the propensity to have bills and amendments supported by other parliamentarians—i.e., the ability to recruit cosponsors—and in the propensity to cosponsor bills and amendments authored by other parliamentarians. We also analyze gender differences in voting behavior through indicators such as voting turnout and deviations from the majoritarian vote of the parliamentarian's political group. Parliamentary activity provides a rare non-experimental context in which cooperation can be measured, as cosponsorship constitutes

[1] This bill was voted in 2000 and implemented for the first time for the 2002 parliamentary elections. If less than 50% of a political party's nominees are women, the party's public funding will be reduced proportionally to the gender gap among its nominees.

[2] In organizations, promoting and encouraging teamwork and cooperation enhances group performance (Hamilton et al. (2003); Ichniowski et al. (1997); Lazear (2000)), fosters innovation (Jansen et al. (2006)), and increases worker motivation (Frey and Jegen (2001)). At the macro level, Algan and Cahuc (2010) show that trust, which is closely related to cooperative behavior, influences GDP levels.

a formal, low-cost show of support for other parliamentarians' initiatives and is less binding than a vote.[3]

Many studies have explored gender differences among politicians at various levels. However, most of these approaches focus on final outcomes rather than the underlying processes. Specifically, previous research often examines political decisions, such as budget allocation for public goods, compensation of state workers, or political budget cycles. Another strand of literature focuses on parliamentarians, analyzing gender differences in overall activity, effectiveness, or the topics of bills and amendments. The evidence on gender differences among politicians is mixed.[4] This paper addresses this gap by investigating gender differences in a key aspect of the legislative process: cooperativeness.

Why might male and female parliamentarians exhibit different cooperative behaviors? Behavioral economics provides robust evidence of gender differences in cooperation, with women often demonstrating a higher propensity to collaborate.[5] An increase in the share of female parliamentarians could, therefore, enhance the efficiency of the legislative process by fostering greater cooperation. However, the rapid influx of women into parliament may also have unintended consequences. A

[3]See Balliet et al. (2011) for a meta-analytic review of the experimental literature on gender differences in cooperation.

[4]For instance, women have been shown to increase public expenditures on health and education (Clots-Figueras (2011, 2012)) and infrastructure (Bhalotra and Clots-Figueras (2014)), set higher compensation for state workers (Besley and Case (2000)), and engage more in strategic spending during pre-electoral and electoral years (Accettura and Profeta (2021)). They also provide public goods that better reflect women's preferences (Chattopadhyay and Duflo (2004)). However, Ferreira and Gyourko (2014) find no effect of a mayor's gender on policy outcomes related to the size of local government, with similar findings reported by Bagues and Campa (2021) in Spain, Geys and Sørensen (2019) in Norway, and Baltrunaite et al. (2019) in Italy. Regarding parliamentary effectiveness, results are inconclusive: Anzia and Berry (2011) and Volden and Wiseman (2018) find that female parliamentarians are more effective than their male counterparts in passing bills they author, whereas Jeydel and Taylor (2003) report no significant differences. Frémeaux and Maarek (2024) observe that women are less effective than men in passing bills but more effective in passing amendments. Gender biases in the topics parliamentarians focus on have been documented by Thomas (1991) and Lippmann (2022). Finally, while Besley et al. (2017) and Bo' et al. (2022) explore gender differences in the quality of politicians, they do not examine policy outcomes and find no significant differences, despite the rapid and substantial increase in female political representation.

[5]Croson and Gneezy (2009) review experimental literature on gender differences, showing that women tend to cooperate more than men. Eckel and Grossman (1998) and Cremer and Janssen (2007) report that women make more altruistic and cooperative choices in experimental games. Ortmann and Tichy (1999) highlight women's inclination toward mutual cooperation in prisoner's dilemma experiments, while Niederle and Vesterlund (2007) suggest women prefer cooperative over competitive environments. For broader evidence on gender differences in preferences and attitudes, see Niederle and Vesterlund (2011), Buser (2016), Eber et al. (2021) (attitude toward competition), Kanthak and Woon (2015) (aversion into entering electoral competition), Ellison and Swanson (2018) (feedback attitudes), Eckel and Grossman (1998) (selfishness), Kamas and Preston (2018) (self-confidence), and Buser et al. (2020) (redistributive preferences).

potential selection effect could lower the average quality of parliamentarians, negatively impacting cooperation.[6] Additionally, male and female parliamentarians often differ in terms of experience, policy interests, or legislative priorities, which may influence cosponsorship behaviors. Moreover, women operating in a predominantly male legislative environment may encounter barriers that hinder their ability to cooperate effectively.

Interestingly, one might argue that cosponsorship behaviors should not differ by gender since cosponsorship might be seen as a poor proxy of cooperation as it is relatively low-cost and non-binding. Supporting a bill through cosponsorship does not oblige parliamentarians to act as its spokesperson or even to vote for it. Cosponsorship may also reflect collective party strategies, where members are encouraged to support initiatives within their political group to maximize visibility. Under such circumstances, one might expect little to no gender differences in cosponsorship behaviors.

Few studies have analyzed cooperation through cosponsorship, and most focus on the U.S. Congress. Anzia and Berry (2011) demonstrate that female representatives are more likely to grant cosponsors. Similarly, Gagliarducci and Paserman (2022) find that female legislators tend to recruit more cosponsors for bills than their male counterparts, attributing this gap to "commonality of interest, rather than gender *per se*". However, Bagues et al. (2023), updating this study, argue that gender itself plays a significant role in shaping cooperation. Contrastingly, Lawless et al. (2018) use a composite cooperation index (combining cosponsorships granted and received) and find no significant gender differences among U.S. legislators.

Our study builds on and departs from this literature in several ways. First, we examine a broader set of legislative activities, including bills, amendments, and voting behaviors. As shown in Frémeaux and Maarek (2024), amendments are the primary tool for French parliamentarians to influence legislation, with a threefold higher likelihood of passage compared to bills. Moreover, the volume of authored amendments far exceeds that of bills (450,000 vs. 3,900 between 2012 and 2022).

[6] Selection effects can operate in the opposite direction as well. If women face discrimination in the electoral process, those who succeed in getting elected may be of higher quality than their male counterparts (Anzia and Berry (2011)).

Analyzing voting patterns also allows us to assess gender differences in more consequential forms of support. Second, the institutional context in France differs significantly from that of the U.S. The French parliament has a larger proportion of female representatives—36% on average between 2012 and 2022, compared to 15% in the U.S. House of Representatives (and less than 10% among Republican legislators) and it is a multiparty system. These two apects could mitigate selection effects and amplify peer dynamics, making this a compelling case study.

We collected unique data on all bills and amendments authored by parliamentarians in the Lower House between 2012 and 2022. Using multivariate regressions and regression discontinuity design (RDD), we show that bills authored by women are 7.3 percentage points less likely to be cosponsored, and when they are, they attract 6.4 fewer cosponsors than bills authored by men (compared to an average of 39 cosponsors per bill). This difference mostly arises from within the parliamentarian's own group rather than from other political groups. We also detect a gender gap for amendments, but it is smaller and not statistically significant.

Conversely, women are more likely than men to support other parliamentarians' initiatives, particularly amendments originating from their own political group. This result is confirmed when analyzing voting behavior: female turnout is significantly higher than male turnout. Therefore, women more frequently support their colleagues' initiatives but receive less support for their own. In other words, their support is not reciprocated. These results suggest that women are more likely to engage in altruistic behaviors, consistent with findings from experimental contexts. Our results differ from those of Gagliarducci and Paserman (2022), as we find asymmetric results in cosponsorships received and granted, and from those of Lawless et al. (2018), who report no differences.

Our data enable a more detailed study of the legislative process to better contextualize these results and their implications. To assess the consequences of cosponsorship, we collected detailed data on the voting process, enabling us to measure legislative effectiveness (i.e., the number of bills and amendments passed). We show that the gender gap in cosponsorship directly affects parliamentary

effectiveness, with fewer cosponsors reducing the likelihood of passing bills and amendments and, therefore, the influence of female legislative activities. In light of these findings, the within-group gender gap in cosponsorship can also be interpreted as a strategic move by male politicians to marginalize their female counterparts and maintain parliamentary power. Even though supporting an amendment is not costly, it represents more than a symbolic act. Therefore, while the feminization of parliament is a positive step toward inclusivity, the lack of reciprocity faced by female legislators remains a significant barrier.

Our detailed dataset also allows us to discard several potential mechanisms that could explain gender differences in cooperativeness. First, the results are not driven by gender differences in covariates such as experience, political characteristics, or other factors. Second, other potential mechanisms, such as the quality or topics of bills and amendments or the composition of the political group, do not explain our results. We argue, therefore, that the greater likelihood of women supporting their colleagues' initiatives is probably due to behavioral differences in their ability to cooperate.

The remainder of the article is structured as follows. Section 2 describes the features of the French parliament. Section 3 presents the dataset. Section 4 outlines our empirical strategy. We then investigate how gender affects cooperativeness (Section 5). Section 6 concludes.

2 Context

The activity of French parliamentarians is multidimensional. It can be divided into two main categories: legislative development and government oversight. This analysis of cosponsorship focuses exclusively on the legislative development aspect.

Authoring a *bill* represents the most direct approach to legislative development. However, parliamentarians can also modify, delete, or add articles to bills through *amendments*, regardless of whether the bills are authored by parliamentarians or the government. The cosponsorship process begins as soon as a bill or amendment is registered in the Lower House. The list of cosponsors, if

any, appears on the first page of the bill or amendment following the author's name (for an example, see Figure A.1 in the appendix).[7]

No specific rules govern cosponsorship. Cosponsors may belong to the same political group as the author or to a different one. There is no limit to the number of cosponsors granted or recruited, nor is there a prescribed order for listing them. According to guidelines provided to French parliamentarians, bills and amendments cosponsored, particularly by influential figures such as political group leaders or parliamentary commission presidents, are more likely to pass.[8] Therefore, parliamentarians are encouraged to recruited cosponsors. Thus, recruiting cosponsors is a strategic activity for parliamentarians seeking to influence the legislative process. Similarly, choosing whom to support through cosponsorship is equally strategic, as it shapes the visibility and influence of fellow parliamentarians in a highly competitive environment.

The legislative process differs for bills and amendments. Once a bill is registered, it is first examined by the relevant parliamentary commission. The commission appoints a *rapporteur* to study the bill and draft a report, which may include proposed amendments. Not all bills are voted on, as the government sets the legislative agenda for two weeks each month, while opposition parties control the agenda for one day per month. On these days, opposition groups must prioritize a few bills (typically three to five) for examination. Recruiting cosponsors can increase a bill's chances of selection by a parliamentary group. Conversely, supporting a bill through cosponsorship is also a strategic decision, as parliamentarians compete for their bills to be voted on. Once selected, the Lower (or Upper) House votes on each article of the bill before voting on the bill as a whole. If approved, the bill proceeds to the other House for a similar process. A bill becomes law only if

[7]Unlike amendments, bills can be coauthored by several parliamentarians, although this occurs in fewer than 4% of cases. By definition, the individual contributions of coauthors cannot be measured. However, evidence suggests that some coauthors are included for strategic purposes. For instance, a bill authored jointly by the head of a political group or by members from both the Lower and Upper Houses may aim to promote the bill and increase its probability of passing. The frequency of coauthored bills is similar for men and women. For coauthored bills, we attribute the bill equally to all authors. Additionally, we include a control variable in our analysis to distinguish single-authored bills from coauthored ones. When coauthored bills are excluded, our findings remain unchanged.

[8]These guidelines are accessible here: https://www.senat.fr/fileadmin/Fichiers/Images/relations_internationales/cooperativeness_interparlementaire/Guides_et_recueils/Rediger_la_loi_juin_2007.pdf.

identical versions are approved by both Houses. In cases of disagreement, a joint commission of seven parliamentarians and seven senators drafts a new version, which is then subjected to a final vote in the Lower House.

Unlike bills, all admissible amendments must be examined and be voted on.[9] Parliamentarians may withdraw their own amendments, which can also be dropped if the author is absent during deliberations or if similar amendments have already been accepted or rejected.[10]

3 Data

To construct our dataset, we collected information from the Lower House's open data website on all bills and amendments authored during the last two parliamentary terms: 2012–2017 and 2017–2022. Ultimately, our sample includes 3,898 bills and 450,894 amendments.

We compiled three main types of information. First, we identified the author and cosponsors of each bill and amendment and gathered data on various attributes of the parliamentarians, including gender, age, political experience (e.g., number of past terms, local or governmental roles), leadership positions in the Lower House (e.g., president, vice-president or secretary of the Lower House; head of a political group), political affiliation, size of the political group, permanent parliamentary commission membership, previous occupations, and education.[11] Constituency-level data were also collected, such as population size, demographic composition by age and gender, education levels, and employment status. These variables enable us to test whether any observed gender gaps are driven by the author's characteristics.[12]

Second, for each bill and amendment, we recorded their topics based on text summaries and

[9] Amendments may be declared inadmissible for two main reasons. First, amendments cannot be adopted if they would reduce public resources. Second, legal inadmissibility applies when an amendment falls outside the scope of the bill, is filed too late, or does not allow sufficient time for the authors to prepare a response. If deemed inadmissible for any reason, an amendment is not put to a vote.

[10] For example, an amendment proposing to delete an article automatically invalidates subsequent amendments seeking to alter the wording of that article.

[11] Educational attainment data were sourced externally and are available for 72% of parliamentarians. Consequently, this variable is used as a robustness check but not in the main analysis.

[12] Table C.1 provides descriptive statistics on parliamentarians.

collected the filing dates. This allows us to analyze trends in cosponsorship over time, such as whether cosponsorship patterns shifted toward the end of each term or were influenced by remote work during the 2020 lockdown.[13]

Third, to assess the consequences of cosponsorship, we collected detailed data on the voting process, enabling us to measure legislative effectiveness (i.e., the number of bills and amendments passed). For amendments, we also recorded their admissibility status and whether they were defended by their authors in plenary sessions. For bills, we documented their selection by political groups, as not all bills are subjected to a vote (as discussed in section 2). Finally, we gathered data on voting behavior to examine whether the patterns observed in cosponsorship extend to voting—a more active and deliberate form of support.

4 Empirical strategy

To evaluate the influence of a parliamentarian's gender on cooperativeness, we analyze two dimensions: the cosponsors recruited by parliamentarians for their bills and amendments and the cosponsors they granted to others.

For the first dimension, we consider two main outcomes: a binary variable equal to 1 if the bill or amendment is cosponsored (*extensive margin*), and a continuous variable measuring the number of cosponsors recruited (*intensive margin*). This distinction is important, as not recruiting any cosponsors differs fundamentally from attracting more or fewer cosponsors.[14] Additionally, we decompose

[13] Our dataset spans 2012–2022, encompassing the COVID-19 crisis and associated lockdowns. During the main lockdown (March–June 2020), 30 parliamentarians (three per political group) worked onsite at the Palais Bourbon, while the remaining 547 parliamentarians worked remotely. This situation may have affected cosponsorship dynamics. In Table C.2, we analyze the lockdown's effects on cosponsorship, excluding 2020 entirely and focusing on bills and amendments filed during lockdown periods (March–June and November 2020). For bills (Panel A), the lockdown produced mixed effects: the gender gap widened at the extensive margin but narrowed or even reversed at the intensive margin when considering the entire year. For amendments (Panel B), the results were generally insignificant, although women appeared to attract more cosponsors than men during this period. Thus, while the cosponsorship process changed during the lockdown, its impact on gender differences was limited and does not fully explain our results. It is of course complex to distinguish the effect of remote work from the topics of bills and amendments that were discussed during this period.

[14] When we combine the two margins (by setting to zero the number of cosponsors when the bill/amendment is not cosponsored), the results remain similar: negative and statistically significant coefficient for bills and slightly negative but not statistically significant for amendments.

the number of cosponsors by their origin: same political group, other groups, and opposite groups (i.e., majority when the parliamentarian is in the opposition and vice versa). The unit of analysis is at the bill/amendment level, which allows us to examine whether any observed gender gap is influenced by specific characteristics of the legislative initiative. We estimate the following regression model:

$$Y_{dit} = \beta_0 + \beta_1 FemaleParliamentarian_{dit} + \beta_2 X_{dit} + \mu_t + u_{dit} \quad (1)$$

where d denotes the bill or amendment, i refers to the parliamentarian, and t indicates the parliamentary term. We use an OLS model for both extensive and intensive margins.[15] Standard errors are clustered at the parliamentarian level.

The control variables (X_{dit}) include political experience (age, number of past terms, local political roles such as mayor, and governmental experience); political characteristics (leadership roles in the Lower House such as president, vice-president, secretary, quaestor, head of a political group or commission; political orientation such as majority/opposition or left/right, and group size); membership in permanent parliamentary commissions (cultural affairs and education; defense; economic affairs; finance and budgetary control; foreign affairs; law; social affairs; sustainable development); and previous occupation and education.[16] Finally, we include term fixed effects (μ_t) to capture the global evolution of parliamentary activities. We use the characteristics of the legislative initiative (topics, date, etc.) in the analysis of mechanisms (section 5.3).

Controlling for parliamentary experience is crucial, as the recent increase in the share of women has mechanically led to a gender difference in experience, which may influence the ability to recruit cosponsors. Additionally, controlling for previous occupation and education matters because financial incentives have pushed political parties to rapidly increase the number of female candidates, potentially leading to less selective criteria. This might affect the recruitment of cosponsors. We also

[15] In Table C.3, we present results using a logit model for the extensive margin, which yields consistent results.

[16] We classified the previous occupation into 10 categories: executive (private sector), executive (public sector), liberal profession, executive (retired), self-employed, intermediate positions, employee, worker-farmer, and inactive.

control for the characteristics of the constituency: adult population, age, and employment status (separately for men and women).

For the second dimension, we explore another dimension of cooperativeness: the ability to support the legislative initiatives of others. To this end, we analyze gender differences in the number of cosponsors granted by each parliamentarian and the number of votes in which each parliamentarian participated. The regression model is as follows:

$$Y_{it} = \beta_0 + \beta_1 FemaleParliamentarian_{it} + \beta_2 X_{it} + \mu_t + u_{it} \tag{2}$$

where i refers to the parliamentarian and t indicates the term. Y_{it} corresponds to the number of cosponsors granted or the number of votes participated in by a parliamentarian. X_{it} includes the same set of control variables presented earlier, and μ_t represents term fixed effects. We use OLS models.

To mitigate potential biases from omitted variables in both analyses, we use a complementary specification that approximates the random assignment of male and female parliamentarians. For both cosponsorship received and granted, we apply a regression discontinuity design (RDD), exploiting close mixed-gender elections, following Lee (2008) (and Ferreira and Gyourko (2014); Bagues and Campa (2021); Lippmann (2022) for applications of gender effects in politics).[17] In this type of election, the gender of the elected parliamentarian can be considered as random. The RDD specification is as follows:

$$Y_{dit} = \beta_0 + \beta_1 D_{dit} + \beta_2 f(X_{dit}) + u_{dit} \tag{3}$$

where d refers to the bill/amendment, i denotes the parliamentarian, and t indicates the term.

[17]The parliamentary election (for the Lower House) follows a two-round plurality voting system. To win in the first round, a candidate must secure over 50% of the votes from at least 25% of registered voters. If this threshold is not met, a second round is held, where a relative majority is sufficient, and the candidate with the highest vote share wins. All parliamentary election data is provided by the official records of the *Ministère de l'Intérieur*.

X_{dit} is the running variable, and D_{dit} is equal to 1 if the bill/amendment is authored by a woman. $f(X_{dit})$ is a polynomial function interacting with D_{dit}. The parameter β_1 represents the local average treatment effect (LATE) of electing a woman instead of a man following a close election. This equation is estimated using data from close elections. In our preferred specification, we follow Cattaneo et al. (2020) by nonparametrically estimating this coefficient with a local linear function and a triangular kernel, and we use their robust bias-correction method for inference. For defining the reference bandwidth, we follow the methodology in Calonico et al. (2014).[18] All validity and robustness tests (alternative bandwidths and kernels) are presented in Appendix B.

5 Results

5.1 How many cosponsors male and female parliamentarians recruit?

Descriptive statistics Figure 1 illustrates the gender differences in cosponsorship for bills and amendments. Figure 1a shows that the share of bills with at least one recruited cosponsor (75%) exceeds that of amendments (53%). At the extensive margin, the gender gap is not visually evident. However, at the intensive margin, a substantial gender gap appears at the intensive margin for bills (Figure 1b), as bills authored by male parliamentarians attract more cosponsors (40 on average) than those authored by female parliamentarians (35). For amendments, the average number of cosponsors is smaller (17), and no gender gap is detected.[19] Finally, Figure 1c depicts the type of cosponsors. Approximately 80% of cosponsors belong to the parliamentarian's political group, regardless of whether the legislation is a bill or amendment. Among cosponsors from other groups than that of the author, those with a different political orientation (e.g., majority when the parliamentarian is in opposition) represent a higher share for amendments (10%) compared to bills (5%). This share is slightly higher for women than for men.

[18] The bandwidths are selected using the Stata package *rdrobust* (Calonico et al. (2017)).

[19] Figure C.1 presents the kernel density for the number of cosponsors. For bills authored by women, most data points cluster at the lower end of the distribution, whereas no visual difference is observed for amendments.

Multivariate regressions Table 1 reports the results of multivariate regressions for bills (Panel A) and amendments (Panel B). We analyze the extensive margin (column 1) and the intensive margin (column 2). We then examine the type of cosponsors: from the parliamentarian's political group (column 3), from other groups (column 4), and from opposing groups (column 5).[20] We control for parliamentarian and constituency characteristics.

Female parliamentarians are significantly less likely to have their bills cosponsored, with a marginal effect of -7.9 percentage points (pp), compared to a cosponsorship rate of 75%. When cosponsored, bills authored by female parliamentarians attract fewer cosponsors (-6.4), aligning with the findings in Figure 1b. This effect is both statistically significant and again substantial, as the average number of cosponsors is 38.8, corresponding to a relative decrease of 16.4%. The gender gap is primarily attributed to cosponsors from the parliamentarian's own group rather than other political groups (-3.9 vs. -2.5, respectively). This pattern persists when examining cosponsors from opposing groups, although the relative gap remains significant due to the smaller number of cosponsors from other groups (5.6 on average versus 33.1 from the parliamentarian's own group).

No significant differences are observed for amendments (Panel B). Female parliamentarians are slightly more likely to have their amendments cosponsored, but the effect is minor (1.8 pp) compared to an average of 53%. The number of cosponsors is lower for women (-0.48), but the gap is also small relative to an average of 16.9 cosponsors. Women are less likely to attract cosponsors from other political groups and opposing groups. However, no significant gender gap exists within their own group, although the relative gaps are large (25% and 37%, respectively).

RDD Table 2 presents the RDD estimates. For bills (Panel A), the results are consistent with those of the full sample, except for the number of cosponsors from opposite groups (column 5). The gender gap is larger for all other coefficients but remains statistically insignificant at the extensive margin.

[20] This breakdown differs slightly from that in Figure 1c, where cosponsors from other political groups are categorized by political orientation (same or different). The descriptive analysis ensures the origin of cosponsors sums to 100%, while the econometric analysis first considers all cosponsors from other groups, and then focuses on those with a different political orientation.

Specifically, the share of cosponsored bills is 22 pp. lower for women, and bills authored by women attract approximately 20 fewer cosponsors compared to those authored by men. For amendments (Panel B), the estimates align with Table 1. Although some coefficients change sign (columns 1, 4, and 5), the gender gap remains small and statistically insignificant. Supplementary results with alternative specifications are provided in the appendix (Table B.1).

Covariates To understand these findings, we analyze the effect of observable characteristics in Table 3. We progressively add control variables, focusing on the likelihood of recruiting cosponsors and the total number of cosponsors.[21] For bills, the estimated gender gap in the number of cosponsors consistently ranges between -4 and -6, regardless of specification, suggesting it does not stem from observable differences. However, this is not the case for the likelihood of recruiting cosponsors (Panel A): the coefficient turns negative when controlling for experience and becomes statistically significant when constituency characteristics are included. Political characteristics and parliamentary commissions have little impact. For amendments, changes in coefficients are limited, and none are statistically different from zero across specifications.

We replicate this analysis for RDD estimates in Table B.1 (Panels A and C). For bills, the conclusions mirror those from the full sample (sign change at the extensive margin, no effect at the intensive margin). Female parliamentarians consistently attract fewer cosponsors, irrespective of control variables. However, the likelihood of recruiting cosponsors increases (though not significantly) without control variables. For amendments, coefficients grow larger with the inclusion of control variables.

Robustness tests Table C.5 summarizes robustness tests. First, we exclude parliamentarians in influential positions likely to attract more cosponsors (*bureau* members, political group leaders,

[21] In Appendix Table C.4, we replicate this analysis for cosponsor types. For both bills and amendments, estimates for cosponsors from the parliamentarian's own group remain stable across specifications. For other outcomes, such as cosponsors from other groups or opposing groups, including political characteristics or, to a lesser extent, parliamentary commission assignments tends to increase the gender gap.

parliamentary commission chairs, and former ministers). Second, we exclude the top 5% most active authors, whose support may erode over time. We also exclude unaffiliated parliamentarians (*non-inscrits*), who are less connected politically. Finally, we control for the term duration, as some parliamentarians do not complete their full term. The gender gap estimates remain consistent with our main specification.[22] Third, in Table C.6, we compute alternative measures: the share of cosponsors from the parliamentarian's group and the share from other groups. Results confirm prior findings.

5.2 How many cosponsors male and female parliamentarians grant?

Cooperativeness can also be analyzed from the other angle, as parliamentarians contribute to their colleagues' bills and amendments through cosponsorship. One possible explanation for the gender gap in the number of cosponsors recruited could lie in differences in cosponsorship behavior, with women potentially lending less frequent support to bills or amendments authored by their peers. Our results suggest that this potential mechanism is not valid.

Cosponsors granted We begin by examining the number of cosponsors granted by parliamentarians (Figure 2). Women appear to grant more cosponsors than men for amendments (3,250 versus 3,166) but fewer for bills (79 versus 97). Additionally, there is a slight difference in the type of authorship: female parliamentarians grant a smaller share of cosponsors to members of their own group compared to their male counterparts.

In Table 4, we examine whether these differences persist when including covariates. For bills, the gender gap disappears after accounting for these controls, as women slightly exceed men in the number of cosponsored bills (+1.6), though this difference is not statistically significant. Similarly, no gender disparity is observed when restricting the analysis to parliamentarians who authored at least one bill (column 2). These findings are corroborated by the RDD estimates (column 3). The

[22] Excluding the top 5% most active authors affects the extensive margin: no gap is detected for bills, while the coefficient increases for amendments.

same conclusion applies when analyzing the cosponsors granted within the parliamentarian's own group versus other groups.

For amendments, the gap follows a similar trend but is larger (+324) and statistically significant at the 5% level, both in the full sample and among authors. The difference between men and women is substantial, with a relative gap of over 10%. Once again, this effect is validated by the RDD estimates (column 3). This overall gender effect is driven by all categories of authors, though it is statistically significant only for cosponsors within the parliamentarians' own group.

In Appendix (Table C.7), we explore the impact of covariates on these estimates. For bills, the gross gender gap vanishes when controlling for variables such as experience and political characteristics. However, for amendments, the gross gap becomes more pronounced and statistically significant once political characteristics are included as controls.

Consistent with the analysis of cosponsors recruited, several robustness tests were conducted. First, we excluded parliamentarians with influential positions that might increase their likelihood of granting cosponsorships, such as those in the bureau of the Lower House, leaders of political groups, or heads of parliamentary commissions. We also excluded the most active cosponsors (top 5%) to prevent their activity from skewing the results and masking gender disparities. As shown in Table C.8, these restrictions did not affect the estimates.

Bilateral analysis A more direct way to analyze reciprocity is to examine the relationships between parliamentarians. Using the available information on the identities of authors and cosponsors, we summarize all interactions between parliamentarians. Among those who authored and cosponsored at least one bill or amendment, relationships can be categorized as reciprocal (both parties cosponsored each other), altruistic (one party cosponsored the other without reciprocity), or selfish (one party received cosponsorship without providing it in return). We also assess the intensity of these relationships by measuring the share of a parliamentarian's bills or amendments that were

cosponsored by a specific colleague.

Table 5 presents the results. For bills, we do not find any statistically significant gender differences, though female parliamentarians tend to engage in more reciprocal relationships (+2.4 pp) and fewer selfish relationships (-1.7 pp) compared to male parliamentarians. Similar patterns emerge for amendments (+2.5 pp for reciprocity), and these differences are statistically significant.

Additionally, women tend to support their colleagues with greater intensity (column 4). For instance, when a parliamentarian cosponsors a colleague, they typically do so for 25% of that colleague's bills and 10% of their amendments. For female parliamentarians, this share is higher by 2.1 pp. for bills and 1.1 pp. for amendments compared to male parliamentarians, suggesting a greater intensity of reciprocity among women. However, the coefficients are statistically significant only for amendments.

5.3 Alternative mechanisms

In this section, we present alternative mechanisms. None of them explain the gender gap in terms of cooperativeness.

Quality If the bills authored by women were considered to be of lower quality, it could explain why they recruit fewer cosponsors. However, measuring quality is subjective and complex. Thus, we rely on indirect tests. First, we assume that the quality of bills is at least partially related to the quality of parliamentarians. Following Besley et al. (2011), Besley et al. (2017), and Bo' et al. (2022), we use education (highest diploma and a dummy variable for the National School of Administration (ENA)) and occupation as proxies for the quality of politicians (Table C.10). The results remain unchanged once we include these controls.

Second, Frémeaux and Maarek (2024) demonstrate that female parliamentarians are more effective than men in passing their amendments. Women are more likely to author admissible amendments

and to defend them in plenary sessions.[23] This suggests that the quality of amendments authored by women is higher than that of men. Although there are no equivalent indicators for bills, assuming a positive correlation between the quality of amendments and bills, we could infer that the bills authored by women are not of lower quality than those authored by men.

Topics Certain topics may be perceived as more consensual, making it easier to recruit cosponsors. Gagliarducci and Paserman (2022) suggest that gender differences in cooperativeness may stem from "commonality of interest" rather than gender per se. However, this conclusion is challenged by Bagues et al. (2023).

Using a dictionary-based method from Lippmann (2022), we identify the topics of bills and amendments. Consistent with Lippmann (2022), we observe that women author more amendments than men on topics such as women, children, and health issues.[24] Our approach differs from Gagliarducci and Paserman (2022), who classify women's issues broadly to include health, labor/employment/immigration, education, law/crime/family, or social welfare.[25]

When focusing on topics more prevalent among female parliamentarians (Table C.11), the results align with those observed in the overall sample, except at the extensive margin for bills. However, the estimates are less precise due to reduced sample size. Therefore, differences in cooperativeness among French parliamentarians do not seem to be driven by topic-specific variations.

[23] Amendments can be declared inadmissible for two main reasons. First, amendments authored by parliamentarians are not admissible if their adoption would reduce public resources. Second, amendments can be deemed inadmissible for legal reasons, such as being outside the scope of the law, filed too late, or preventing the authors of the bill from preparing a response. If deemed inadmissible (regardless of the motive), the amendment is not put to a vote.

[24] To classify a bill/amendment, we search for keywords in the text summary. For women's issues, we use terms such as women, gender, pregnancy, domestic abuse, violence. For health, we use health, care, hospital, disease, physician, patient, COVID-19, drugs. For children, we use child, childhood, kindergarten.

[25] To align with Gagliarducci and Paserman (2022)'s method, we use the permanent parliamentary commission as a proxy for parliamentarians' areas of focus. As shown in Table C.1, women are overrepresented in commissions such as Culture and Education and underrepresented in Defence. We detect no clear link between the proportion of women in commissions and the average number of cosponsors for bills/amendments from these commissions. Additionally, we find that our estimates remain stable when controlling for commissions (Table 3). Nonetheless, commissions may be an imperfect proxy for expertise, as parliamentarians can author bills/amendments on other topics.

Characteristics of cosponsors Beyond individual characteristics, gender differences in cooperativeness may arise from peer effects.

If parliamentarians tend to cooperate more within their own gender, male parliamentarians would naturally recruit more cosponsors, given that men constituted 65% of parliamentarians between 2012 and 2022. In Table C.12, we show that female authors tend to have a higher share of female cosponsors compared to male authors (+3.9 pp for amendments and +1.8 pp for bills). Then, to test this composition effect, we include the number of women in the parliamentarian's political group as a control variable (columns 2-4).[26] This adjustment does not affect the results, and the gender gap in cosponsorship remains slightly larger for bills than in Table 1. Similarly, controlling for the number of women in the parliamentary commission yields unchanged estimates.

In addition to gender, we assess the quality of cosponsors by considering those who hold influential positions in the Lower House. One could hypothesize that fewer cosponsors might be offset by higher quality. However, Table C.13 shows no significant difference between male and female parliamentarians in the type of cosponsors recruited. Moreover, including the share of cosponsors holding influential positions does not affect the results.

Learning effect Political experience does not appear to drive the observed results. Indeed, controlling for political experience only slightly alters the gender gap, which persists among both male and female newcomers (Table C.14).

However, one might hypothesize a gender-differentiated learning effect over the course of the parliamentary term. This could include disparities in how men and women develop networks among colleagues. To investigate this, we examine the gender gap among newcomers at the beginning (first 18 months), middle, and end of the term (last 18 months).

Whether analyzing cosponsors recruited (Table C.15) or granted (Table C.16), we find no evidence of a significant change over the term. Interestingly, newcomers, regardless of their gender, tend to

[26] Replacing the number of women with the share of women does not change the estimates.

grant a higher number of cosponsors than more experienced parliamentarians. This suggests that supporting colleagues may serve as a strategy for building networks.

Collective strategy Political behaviors may reflect collective strategies dictated by political parties, and cosponsorship may not be exempt from this logic. However, it is challenging to disentangle individual initiatives from broader collective dynamics.

One approach to testing this mechanism is to differentiate amendments based on the origin of the text being amended. For instance, amendments criticizing governmental bills may be more politically motivated and subject to collective strategies (e.g., automatic support for amendments authored by members of the same political group). Conversely, amendments addressing bills authored by parliamentarians may reflect more individual initiatives.

We provide estimates for both cosponsors recruited (Table C.17) and cosponsors granted (Table C.18). The results do not vary based on the origin of the bill.

5.4 Votes and effectiveness

So far, we showed that female parliamentarians exhibit greater altruistic and cooperative behaviors, by cosponsoring colleagues' initiatives, but receive less reciprocal support from their peers. This asymmetry differs from the results of Gagliarducci and Paserman (2022), where women both give and receive more cosponsors, and from those of Lawless et al. (2018), who report no differences.

These findings on the gender gap in cosponsorship raise two questions. First, are these gender differences in cosponsorship also observed in more binding decisions, such as voting? If men are more likely to consider cosponsorship as inconsequential, they may be less inclined to lend their cosponsorship. Second, does cosponsorship influence the effectiveness of bills and amendments? As discussed in section 2, parliamentarians are encouraged to secure cosponsorship to increase the likelihood of their bills and amendments passing.

5.4.1 Voting behavior

Information on voting behavior is limited to open ballots (*scrutins publics*), as individual information is not collected for votes conducted by show of hands, which is the most frequent type of vote. Open ballots are held when requested by the government, the session chairperson, or the president of a parliamentary commission or political group. During our study period, there were 5,799 open ballots (1,380 in 2012–2017 and 4,419 in 2017–2022). Consequently, the sample is not representative of all votes, which is why we avoid studying the votes "received" by parliamentarians on their bills and amendments. Such an analysis would rely on a limited and unrepresentative sample, making it difficult to compare with cosponsorship estimates, which cover all bills and amendments.

To analyze voting behavior, we consider two aspects: turnout and deviation from the political group's majority vote.[27] Table 6 shows that women participate in more votes than men. The gap is substantial (+41 votes compared to an average of 436 votes) and statistically significant. However, the RDD estimate is negative and not statistically significant. We do not observe any gender differences in deviations from the political group's majority vote. Such deviations are rare (approximately 5% of all votes), and our model's predictive power is low. Similarly, no gender differences emerge when focusing on marked deviations (e.g., voting "for" while the group votes "against", and vice versa) or considering the type of author (government vs. other parliamentarians).

This result aligns with findings on the number of cosponsors granted, suggesting that women are more present at voting time than men, indicating differences in cooperativeness. Notably, since open ballots are more formal and often requested for close decisions, this result could even underestimate the true effect that we could find of all votes.

[27] Votes can take four values: for, against, not voting, or abstention. A deviation occurs when a parliamentarian's vote differs from the group's majority vote.

5.4.2 Effectiveness

Fewer than 2% of all bills authored by parliamentarians are passed, compared to 14% for amendments. Effectiveness strongly depends on the parliamentarian's political orientation. For bills, the likelihood of passage is nearly zero for opposition parliamentarians but reaches 11% for those in the majority. This gap is similarly significant for amendments: 3.4% of amendments authored by opposition members pass, compared to 39% for those from the majority.[28]

To evaluate the impact of cosponsorship on effectiveness, it is necessary to understand each stage of the voting process. As noted in section 2, not all bills are voted on, as parliamentary groups control the agenda only one day per month (each time a different group), discussing three to five bills. As a result, groups must select a few bills among all those authored by their members.

In Table 7 (columns 1–3), we show that having cosponsors significantly increases the likelihood of a bill being selected for a vote (by 14 pp.). Consequently, 94% of bills selected by groups have at least one cosponsor. This effect is consistent across genders (column 2). Additionally, the number of cosponsors significantly increases the likelihood of selection, while the type of cosponsors has a limited effect. Therefore, women's lower ability to recruit cosponsors significantly reduces their likelihood of selection.

In Panel B, we examine amendments.[29] Selection criteria differ for amendments, as all admissible amendments are voted on unless rejected beforehand. Reasons for rejection include inadmissibility, absence of the author during defense, or redundancy with already-passed or rejected amendments.[30] We consider an amendment as "put to a vote" if it is not rejected for any of these reasons. Approximately 43% of all amendments are voted on.[31] Results are consistent with those for bills: cosponsorship significantly increases the likelihood of a vote (by 17 pp.), with similar effects across

[28] For a detailed analysis of effectiveness, see Frémeaux and Maarek (2024).

[29] This analysis excludes amendments authored by *rapporteurs* of bills, as their amendments are less likely to be cosponsored but more likely to pass (44% compared to 10% for non-*rapporteurs*). Including *rapporteur* amendments does not alter the coefficient signs.

[30] For example, voting to delete an article invalidates subsequent amendments modifying the article's wording.

[31] The main reasons for non-selection are inadmissibility or lack of defense.

genders. The number of cosponsors also positively affects selection likelihood. However, the type of cosponsors—specifically, the share belonging to the parliamentarian's own group—does not have an effect.

In columns 4–6, we analyze the likelihood of bills and amendments passing (among those selected). For bills, having cosponsors increases the probability of passage by nearly 1.2 pp., a substantial effect given the average passage rate. The number of cosponsors also has a positive effect, with the influence slightly larger for men than women, though not significantly. For amendments (Panel B), having at least one cosponsor reduces the probability of passage by 3.8 pp., an effect primarily observed among majority-group members. This reflects that some amendments, directly supported by the government, do not require additional support. However, for opposition members, the relationship between cosponsorship and passage likelihood is positive. Among cosponsored amendments, the number of cosponsors positively influences passage probability, consistent with bills. Unlike bills, cosponsorship has a similar effect for male and female parliamentarians.

Overall, these findings suggest that women are more penalized than men in competitive scenarios, such as party selection processes, due to receiving less support from colleagues. Conversely, in non-competitive situations (e.g., amendments), no gender gap is observed.

6 Conclusion

This paper examines gender-based differences in cooperativeness among French parliamentarians, offering a novel perspective on how gender dynamics shape legislative processes. Our findings highlight a pronounced asymmetry: female parliamentarians exhibit greater altruistic and cooperative behaviors, such as cosponsoring colleagues' initiatives and participating in votes, but receive less reciprocal support from their peers. This imbalance underscores a critical challenge: while increased female representation enhances the cooperative fabric of legislatures, systemic barriers persist.

The observation of such pronounced gender differences using cosponsorship as our primary mea-

sure is striking. Cosponsorship might be perceived as a visible and low-cost way to demonstrate cooperation and could easily align with collective party strategies. From this perspective, one might have expected little to no gender-based variation. However, our findings suggest that in more discrete, costly, or engaging forms of cooperation, these behavioral differences between men and women could be even more pronounced. This conclusion is further supported by our analysis of voting behavior, where we focus on a subset of the most formal and solemn votes.

These results have significant implications for policymaking and institutional design. From a broader perspective, the increasing feminization of parliament represents a positive development for political parties, as it brings into their ranks parliamentarians who are more likely to support their colleagues. For women, however, the picture is less encouraging. While quotas have successfully increased female representation, the lack of reciprocity faced by female legislators remains a significant barrier that limits their influence.

Finally, this study raises important questions for future research. How do these gendered patterns of cooperation affect broader legislative effectiveness and policy outcomes? Are similar dynamics observed in other political contexts, such as executive decision-making or local governance? Addressing these questions will be essential for understanding and leveraging the full potential of gender diversity in political institutions.

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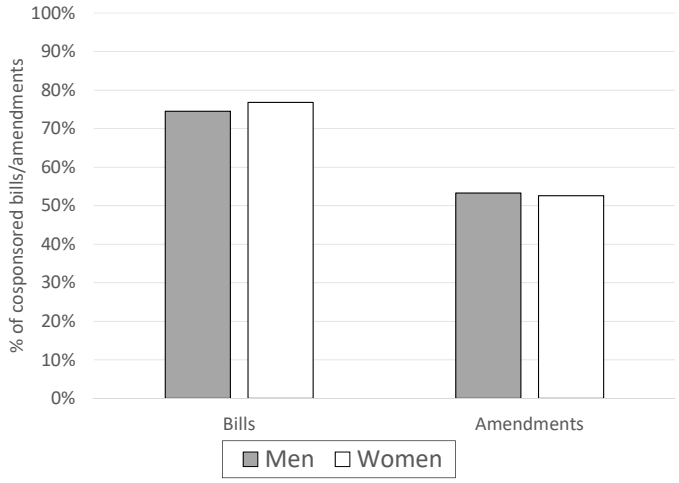
Table 1: Effect of gender on the number of cosponsors recruited

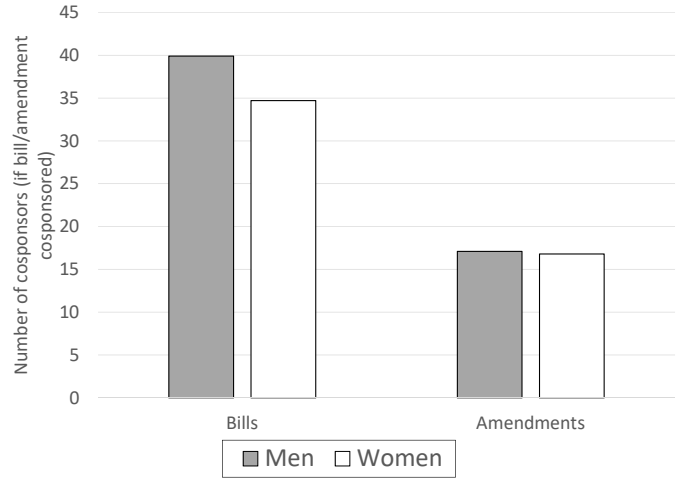
	(1) Cosponsored (=1)	(2) Total number of cosponsors	(3) Nb of cosponsors from own group	(4) Nb of cosponsors from other groups	(5) Nb of cosponsors from opposite group
			Panel A: Bills		
Female parl.	-0.079**	-6.387**	-3.902	-2.485**	-0.707
	(0.040)	(3.002)	(2.603)	(1.250)	(0.467)
N	3904	2966	2966	2966	2966
Mean dep. var.	0.75	38.8	33.1	5.6	1.7
Relative effect	-10.5%	-16.4%	-11.7%	-44.4%	-41.6%
			Panel B: Amendments		
Female parl.	0.018	-0.479	-0.069	-0.409	-0.488*
	(0.028)	(0.879)	(0.856)	(0.280)	(0.250)
N	450969	238204	238204	238204	238204
Mean dep. var.	0.53	16.9	15.4	1.6	1.3
Relative effect	3.4%	-2.8%	-0.4%	-25.6%	-37.5%
Spec.	OLS	OLS	OLS	OLS	OLS
Controls:					
Term f.e.	Yes	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes	Yes
Constituency	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. "Other groups" means than the cosponsors come from a group other than that of the parliamentarian. "Opposite group" means than the cosponsor' group does not have the same political orientation (i.e. it belongs to the majority if the parliamentarian is in the opposition group and vice-versa). Control variables about individual characteristics include: experience, political characteristics, parliamentary commission and occupation. Relative effect is defined as ratio coefficient/mean of dependent variable.

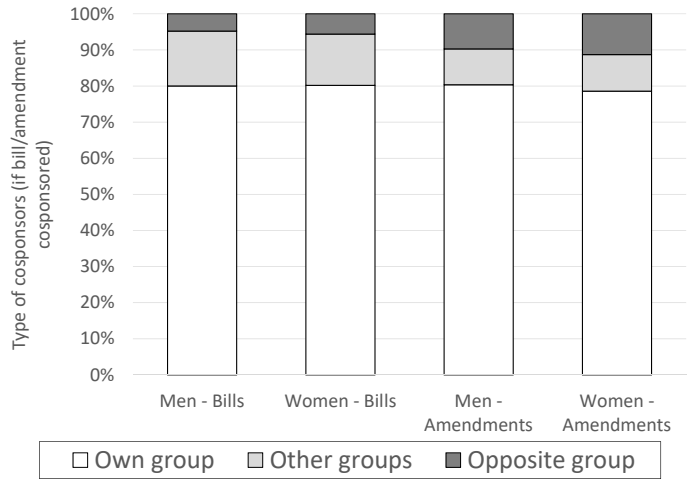
Figure 1: Differences in cosponsors recruited across gender



(a) Share of bills/amendments cosponsored



(b) Number of cosponsors recruited



(c) Type of cosponsors recruited

Note: In Figures 1b and 1c, we restrict the sample to bills and amendments with at least one cosponsor.

Table 2: RDD - Effect of gender on the number and origin of cosponsors recruited

	(1) Cosponsored (=1)	(2) Total number of cosponsors	(3) Nb of cosponsors from own group	(4) Nb of cosponsors from other groups	(5) Nb of cosponsors from opposite group
			Panel A: Bills		
Female parl.	-0.222**	-19.721***	-20.537***	-2.568**	1.662
	(0.097)	(7.224)	(7.179)	(1.226)	(1.017)
N bills	392	231	231	298	347
N parliamentarians	275	252	252	252	252
			Panel B: Amendments		
Female parl.	-0.091	-2.346	-2.390	0.604	0.923
	(0.065)	(3.209)	(2.871)	(1.286)	(1.250)
N amendments	13,005	15,432	10,667	7,397	7,397
N parliamentarians	512	501	501	501	501
Spec.	OLS	OLS	OLS	OLS	OLS
Controls:					
Term f.e.	Yes	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes	Yes

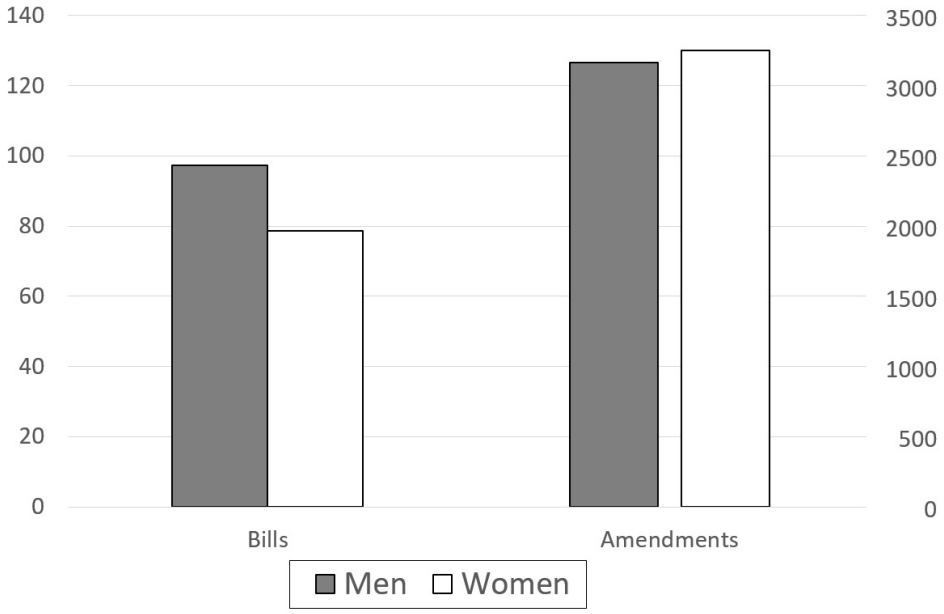
Notes: standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. "Other groups" means than the cosponsors come from a group other than that of the parliamentarian. "Opposite group" means than the cosponsor' group does not have the same political orientation (i.e. it belongs to the majority if the parliamentarian is in the opposition group and vice-versa). Control variables about individual characteristics include: experience, political characteristics, parliamentary commission and occupation.

Table 3: Effect of observables on the number of cosponsors recruited

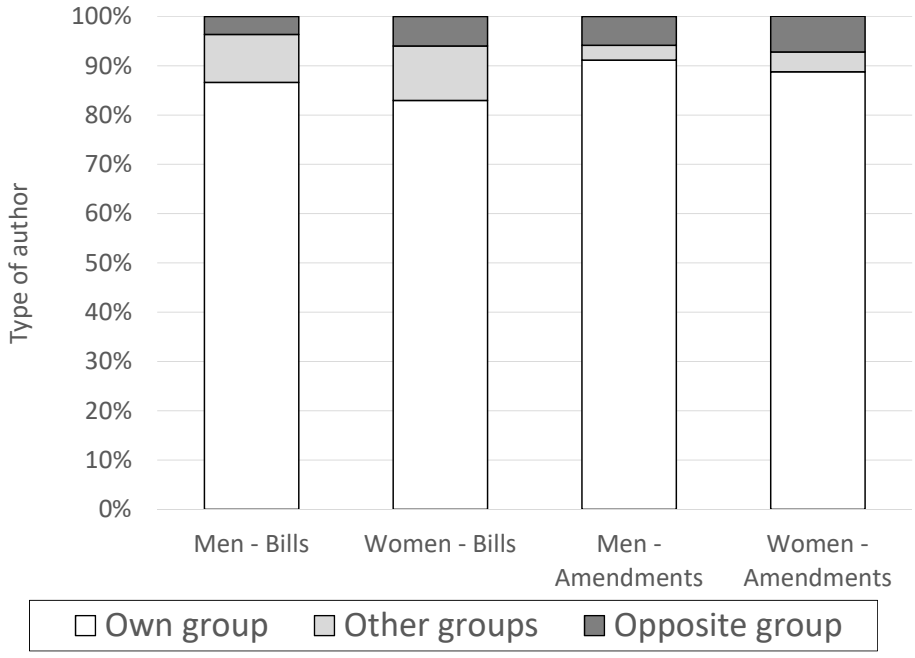
	(1) Spec. 1	(2) Spec. 2	(3) Spec. 3	(4) Spec. 4	(5) Spec. 5	(6) Spec. 6	(7) Spec. 7
Panel A: Bills - Cosponsored (=1)							
Female parl.	0.009	-0.016	-0.054	-0.057	-0.068*	-0.066	-0.079**
	(0.054)	(0.054)	(0.046)	(0.043)	(0.039)	(0.041)	(0.040)
N	3904	3904	3904	3904	3904	3904	3904
Panel B: Bills - Total nb of cosponsors							
Female parl.	-5.403	-3.912	-4.581	-5.717**	-5.828**	-5.727**	-6.387**
	(5.050)	(4.165)	(3.794)	(2.764)	(2.726)	(2.885)	(3.002)
N	2966	2966	2966	2966	2966	2966	2966
Panel C: Amendments - Cosponsored (=1)							
Female parl.	-0.005	-0.009	0.007	0.016	0.016	0.017	0.018
	(0.039)	(0.039)	(0.037)	(0.030)	(0.030)	(0.030)	(0.028)
N	450969	461940	450969	450969	450969	450969	450969
Panel D: Amendments - Total nb of cosponsors							
Female parl.	-0.476	-0.708	-0.608	0.0006	0.069	0.005	-0.479
	(0.970)	(0.916)	(0.885)	(0.829)	(0.824)	(0.856)	(0.879)
N	238204	238204	238204	238204	238204	238204	238204
Controls:							
Term f.e.	No	Yes	Yes	Yes	Yes	Yes	Yes
Experience	No	No	Yes	Yes	Yes	Yes	Yes
Political	No	No	No	Yes	Yes	Yes	Yes
Parl. comm.	No	No	No	No	Yes	Yes	Yes
Occupation	No	No	No	No	No	Yes	Yes
Constituency	No	No	No	No	No	No	Yes

Notes: standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. "Other groups" means than the cosponsors come from a group other than that of the parliamentarian. "Opposite group" means than the cosponsor' group does not have the same political orientation (i.e. it belongs to the majority if the parliamentarian is in the opposition group and vice-versa).

Figure 2: Differences in cosponsors granted across gender



(a) Number of cosponsors granted



(b) Type of author

Note: for Figure 2a, values for bills can be read on the left-hand axis, for amendments on the right-hand axis

Table 4: Effect of gender on the cosponsors granted

	(1) Number of cosponsors granted All parl.	(2) Number of cosponsors granted Authors only	(3) Number of cosponsors granted RDD	(4) Nb of cosponsors granted to own gp	(5) Nb of cosponsors granted to other gp	(6) Nb of cosponsors granted to opposite gp
			Panel A: Bills			
Female parl.	1.641	-0.837	-3.989	2.127	-0.486	0.081
	(5.300)	(9.757)	(20.029)	(4.805)	(1.065)	(0.512)
N	1139	606	213	1139	1139	1139
Mean dep. var.	91	127		78	13	4
Relative effect	1.8%	-0.7%		2.7%	-3.7%	2.3%
			Panel B: Amendments			
Female parl.	320.1**	324.4**	341.43	298.9**	21.25	6.193
	(144.711)	(149.058)	(592.98)	(140.368)	(35.564)	(31.299)
N	1140	1101	313	1140	1140	1140
Mean dep. var.	3085	3195		2789	298	194
Relative effect	10.4%	10.2%		10.4%	7.1%	3.2%
Controls:						
Term f.e.	Yes	Yes	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes	Yes	Yes
Constituency	Yes	Yes	Yes	Yes	Yes	Yes

Notes: standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. "Other groups" means than the cosponsors come from a group other than that of the parliamentarian. "Opposite group" means than the cosponsor' group does not have the same political orientation (i.e. it belongs to the majority if the parliamentarian is in the opposition group and vice-versa). Control variables about individual characteristics include: experience, political characteristics, parliamentary commission and occupation. In column 2, we restrict the sample to parliamentarians who authored/cosponsored at least one bill (Panel A) or one amendment (Panel B). Relative effect is defined as ratio coefficient/mean of dependent variable.

Table 5: Effect of gender on the relationship between parliamentarians

	(1)	(2)	(3)	(4)
	Interactions with other parliamentarians:			% of author's
	Reciprocal	Selfish	Altruistic	initiatives cosponsored
			Panel A: Bills	
Female parl.	0.024	-0.017	-0.006	0.021
	(0.017)	(0.021)	(0.028)	(0.013)
N	606	606	606	606
Mean dep. var.	0.30	0.27	0.43	0.25
			Panel B: Amendments	
Female parl.	0.025**	-0.004	-0.021	0.011***
	(0.012)	(0.011)	(0.017)	(0.003)
N	1091	1091	1091	1091
Mean dep. var.	0.42	0.24	0.34	0.11
Controls:				
Term f.e.	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes
Constituency	Yes	Yes	Yes	Yes

Notes: standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Control variables about individual characteristics include: experience, political characteristics, parliamentary commission and occupation. We restrict the sample to parliamentarians who authored at least one bill (Panel A) or one amendment (Panel B)

Table 6: Effect of gender on votes

	(1) Number of votes All	(2) Number of votes RDD	(3) Deviation from group's majority (%) All votes	(4) Deviation from group's majority (%) Serious deviations	(5) Deviation from group's majority (%) Government
Female parl.	41.16**	-31.59	0.002	-0.0008	0.0002
	(16.556)	(44.993)	(0.005)	(0.002)	(0.004)
N	1158	228	1158	1158	1156
Mean dep. var.	436		0.052	0.023	0.039
Spec.	OLS	OLS	OLS	OLS	OLS
Controls:					
Term f.e.	Yes	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes	Yes
Constituency	Yes	Yes	Yes	Yes	Yes

Notes: standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. In column 4, we focus on serious deviations (i.e., vote "for" while the group votes "against"). and vice-versa. In column 5, we focus on the bills initiated by the government. Control variables about individual characteristics include: experience, political characteristics, parliamentary commission and occupation.

Table 7: Effect of gender on effectiveness

	(1) Voted on (=1)	(2) Voted on (=1)	(3) Voted on (=1)	(4) Passed (=1)	(5) Passed (=1)	(6) Passed (=1)
			Panel A: Bills			
Cosponsored (=1)	0.096***			0.016**		
	(0.012)			(0.006)		
Male × NoCosponsored		Ref.			Ref.	
Female × NoCosponsored		-0.009			-0.005	
		(0.019)			(0.013)	
Male × Cosponsored		0.096***			0.017**	
		(0.014)			(0.007)	
Female × Cosponsored		0.089***			0.004	
		(0.020)			(0.008)	
Nb cosponsors			0.002***			0.0004***
			(0.000)			(0.000)
Female parliamentarian	-0.008		0.002	-0.011*		-0.009
	(0.015)		(0.017)	(0.006)		(0.006)
N	3904	3904	2966	3544	3544	2473
Mean dep. var.		9.7%			1.9%	
			Panel B: Amendments			
Cosponsored (=1)	0.173***			-0.045***		
	(0.017)			(0.009)		
Male × NoCosponsored		Ref.			Ref.	
Female × NoCosponsored		0.011			-0.007	
		(0.029)			(0.019)	
Male × Cosponsored		0.181***			-0.045***	
		(0.020)			(0.011)	
Female × Cosponsored		0.167***			-0.053***	
		(0.021)			(0.015)	
Nb cosponsors			0.002***			0.0009***
			(0.000)			(0.000)
Female parliamentarian	-0.002		-0.008	-0.008		0.005
	(0.014)		(0.012)	(0.013)		(0.010)
N	407448	407448	219473	407448	407448	219473
Mean dep. var.		43.4%			13.7%	
Spec.	OLS	OLS	OLS	OLS	OLS	OLS
Controls:						
Term f.e.	Yes	Yes	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes	Yes	Yes
Constituency	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Control variables about individual characteristics include: experience, political characteristics, parliamentary commission and occupation. In columns 3 and 6, we restrict the sample to bills/amendments that are cosponsored. In Panel B, we drop the amendments authored by the *rapporteur* of the bill.

A Example of a bill

Figure A.1: Example of a bill with cosponsors on the Lower House website

N° 2997

ASSEMBLÉE NATIONALE

CONSTITUTION DU 4 OCTOBRE 1958

QUINZIÈME LÉGISLATURE

Enregistré à la Présidence de l'Assemblée nationale le 26 mai 2020.

Date

PROPOSITION DE LOI

instaurant un **droit** *à des* **modalités** *d'***accès non dématérialisées** *aux* **démarches administratives**,

Bill's title

(Renvoyée à la commission des lois constitutionnelles, de la législation et de l'administration générale de la République, à défaut de constitution d'une commission spéciale dans les délais prévus par les articles 30 et 31 du Règlement.)

Author Cosponsor 1 Cosponsor 2

présentée par Mesdames et Messieurs

Laurent FURST, Jean-Marie SERMIER, Michèle TABAROT, Jean-Pierre VIGIER, Arnaud VIALA, Robin REDA, Jean-Pierre DOOR, Bernard PERRUT, Marie-Christine DALLOZ, Nathalie BASSIRE, Éric CIOTTI, Nicolas FORISSIER, Patrick HETZEL, Daniel FASQUELLE, Éric STRAUMANN, Gérard CHERPION, Julien AUBERT, Pierre VATIN, Martial SADDIER, Marc LE FUR, Stéphane VIRY, Frédéric REISS, Bérengère POLETTI, Michel HERBILLON,

Note: when there is more than one author (less than 4% of all bills), it is explicitly mentioned in the file collected.

B RDD - Internal validity tests and supplementary results

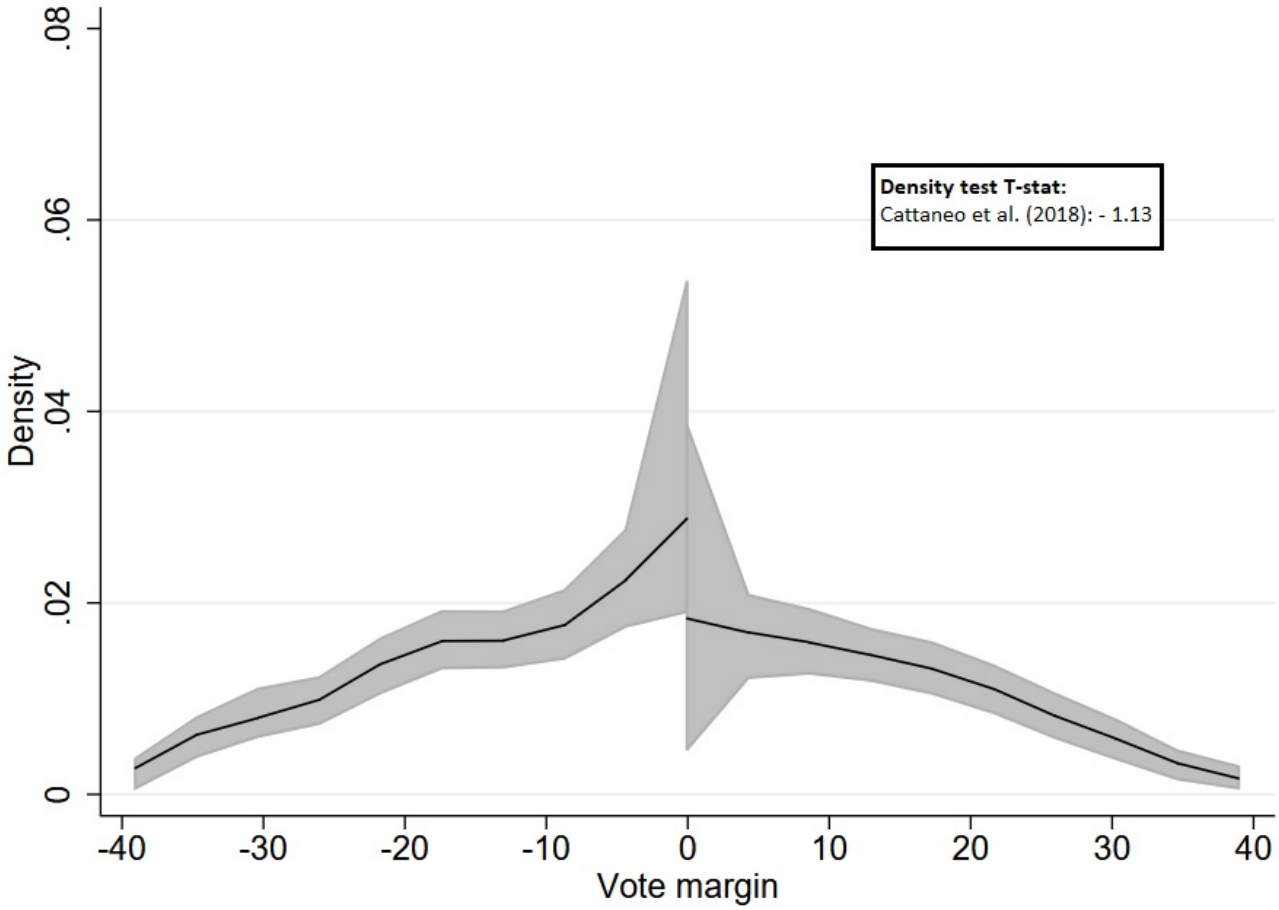
The elections for the Lower House of the French parliament occur every 5 years. A total of 577 representatives in 577 constituencies are elected by direct universal suffrage. The parliamentary election (for the Lower House) follows a two-round plurality voting rule system. To be elected in the first round, an individual must obtain more than 50% of the votes from 25% of the registered citizens. If this is not the case, a second round is organized. Candidates qualify only if their first-round vote share was higher than 12.5% of the registered 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.

In approximately half of all parliamentary elections, the second round opposes a male and a female candidate (272 elections in 2012-2017 and 293 elections in 2017-2022). The number of close elections depends on the bandwidth chosen. Among the elections with a second round opposing a male and a female candidate, 212 (resp. 111) present a gap of less than 10 points (resp. 5 points) between the winner and the contestant.

Our empirical strategy is valid as long as there is no manipulation around the threshold. Figure B.1 shows that male candidates are slightly more likely to win against female candidates. However, following Cattaneo et al. (2020), we test whether there is a manipulation: we do not reject the null hypothesis of no manipulation. Moreover, to be valid, we also need to test the continuity of the main confounders to check whether male and female parliamentarians close to each side of the threshold are comparable.[32] In Figure B.2, we report the outcomes of a local linear regression, estimated separately on each side of the threshold. We find a statistically significant gap for the parliamentary experience (number of terms served) and for political characteristics (belonging to the majority group and to a left party). For parliamentary experience, the gap is not affected by the distance to the threshold, as a difference is also found for the parliamentarians elected by a wider margin. Therefore, the parliamentarians close to the cutoff do not differ from those of the full sample, which is crucial when interpreting the results. To solve this issue, we thus include control variables about experience and political characteristics in our RDD analysis. For all the other characteristics depicted (size of the political group, occupation and top positions in the Lower House), we do not detect any statistically significant difference around the threshold. The absence of difference in past occupation seems to suggest that there is no selection effect linked to the massive entry of women into the profession.

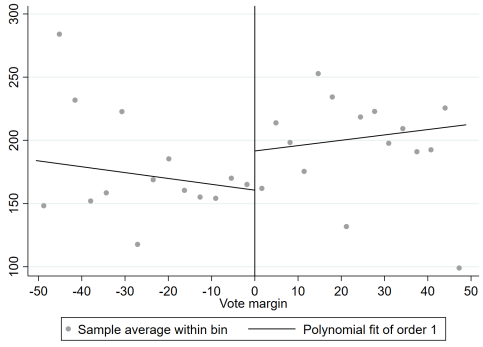
[32] We focus on characteristics that are significantly correctly to cosponsorship.

Figure B.1: Manipulation test

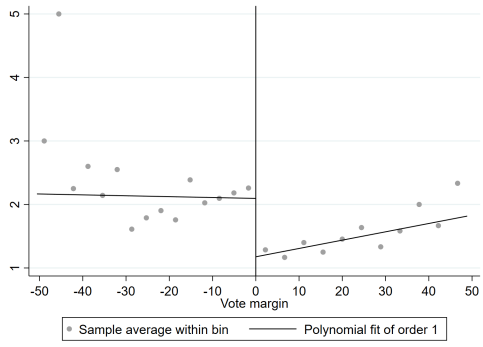


Note: We restrict the sample to elections for which a second round between a male and a female candidate has been organized. The x-axis represents the vote margin for the female candidate. On the right-hand side of the vertical line, a woman is elected, and on the left-hand side, a man is elected.

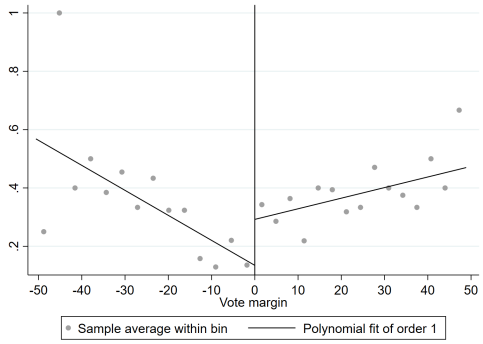
Figure B.2: RDD plots - Continuity assumption



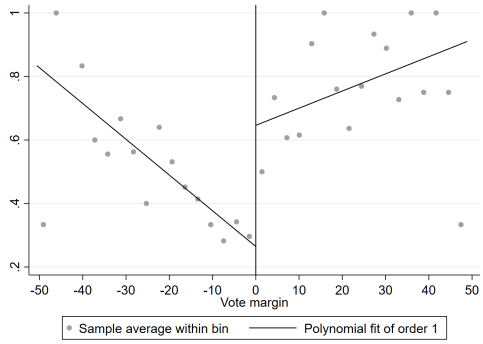
(a) Group size



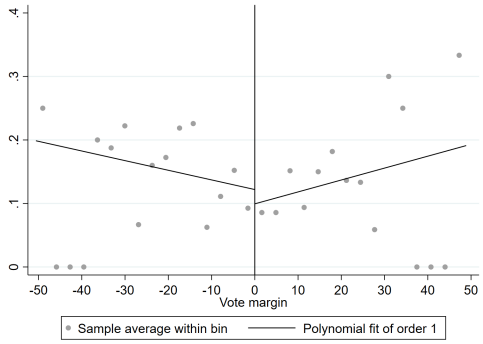
(b) Parl. experience (number of terms)



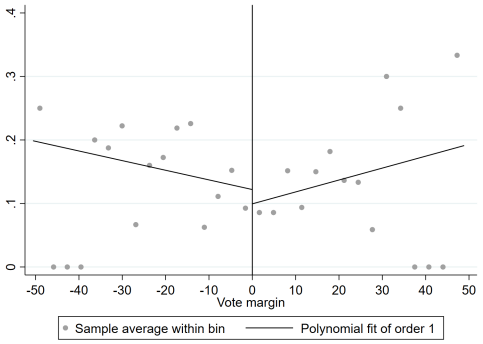
(c) Left parties (%)



(d) Majority group



(e) Influential positions (%)



(f) High-skilled occupations (%)

Note: We restrict the sample to elections for which a second round between a male and a female candidate has been organized. The solid lines represent a first-order polynomial. The vertical lines capture the discontinuity point at zero. The x-axis represents the vote margin for the female candidate. On the right-hand side of the vertical line, a woman is elected, and on the left-hand side, a man is elected. High-skilled occupation = former or current liberal professions and executives (from the public or private sectors). Influential positions = president/vice-president/secretary/quaestor of the Lower House, head of political group, head of parliamentary commission.

C Supplementary results

Table B.1: RDD - Alternative specifications for cosponsors recruited

	(1) Cosponsored (=1)	(2) Total number of cosponsors	(3) Nb of cosponsors from own group	(4) Nb of cosponsors from other groups	(5) Nb of cosponsors from opposite group
			Panel A: Bills - Without control variables; kernel = triangular		
Female parl.	0.178	-32.582**	-32.574**	-2.925	0.298
	(0.212)	(13.651)	(13.389)	(2.342)	(0.884)
N bills	554	231	231	298	347
N parliamentarians	275	252	252	252	252
			Panel B: Bills - With control variables; kernel = uniform		
Female parl.	-0.309***	-0.677	-17.387**	0.251	1.057**
	(0.099)	(7.881)	(8.010)	(0.826)	(0.508)
N amendments	376	202	212	212	212
N parliamentarians	275	252	252	252	252
			Panel C: Amendments - Without control variables; kernel = triangular		
Female parl.	-0.249**	-5.718*	-5.631*	-0.092	-0.199
	(0.127)	(3.297)	(3.246)	(1.667)	(1.629)
N amendments	6,176	13,005	12,291	9,422	5,383
N parliamentarians	512	501	501	501	501
			Panel D: Amendments - With control variables; kernel = uniform		
Female parl.	-0.089	-3.271	-2.932	-0.105	3.398**
	(0.072)	(3.935)	(3.531)	(1.508)	(1.562)
N amendments	16,311	15,432	16,196	11,917	6,451
N parliamentarians	512	501	501	501	501

Notes: standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. "Other groups" means than the cosponsors come from a group other than that of the parliamentarian. "Opposite group" means than the cosponsor' group does not have the same political orientation (i.e. it belongs to the majority if the parliamentarian is in the opposition group and vice-versa).

Table C.1: Characteristics of parliamentarians

	(1) All parl.	(2) Women	(3) Men	(4) = (2) - (3) Difference
Age	55.8	54.0	56.7	-2.7***
Nb of terms served	0.87	0.39	1.12	-0.73***
1st term (%)	0.60	0.76	0.52	0.24***
Governmental experience (%)	0.04	0.02	0.04	-0.02**
Influential positions (%)	0.12	0.11	0.12	-0.01
Left (%)	0.32	0.34	0.31	0.02
Neutral (%)	0.06	0.08	0.05	0.03**
Majority (%)	0.55	0.67	0.50	0.17***
Group size	182	190	178	12*
Parliamentary comm. (%):				
Culture-education	0.12	0.16	0.09	0.06***
Defence	0.12	0.10	0.13	-0.03
Foreign affairs	0.12	0.10	0.13	-0.03
Economy	0.12	0.12	0.12	0.00
Public finances	0.12	0.08	0.13	-0.05***
Environment	0.11	0.11	0.12	-0.01
Social affairs	0.12	0.16	0.09	0.06***
Law	0.12	0.10	0.13	-0.02
Occupation (%):				
Farmer-worker	0.03	0.02	0.03	-0.02*
Self-employed	0.08	0.06	0.09	-0.03*
Executive (private)	0.24	0.24	0.24	0.00
Executive (public)	0.29	0.28	0.30	-0.02
Liberal profession	0.15	0.12	0.17	-0.04**
Executive (retired)	0.07	0.07	0.07	0.00
Intermediate prof.	0.06	0.08	0.05	0.03**
Employee	0.03	0.05	0.02	0.03***
Inactive	0.06	0.09	0.04	0.04
Parliamentary activity (per term):				
N bills authored	2.93	1.80	3.52	-1.71***
N amendments authored	389.1	355.9	406.0	-50.2
N	1,310	446 (34%)	864 (66%)	
incl. authors of bills	644	185 (29%)	459 (71%)	
incl. authors of amendments	1,230	417 (34%)	813 (66%)	

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. % 1st term represents the share of parliamentarians for whom the current term is their first term. Governmental experience represents the share of parliamentarians who have been either minister or secretary of state. Influential positions include president/vice-president/secretary/quaestor of the Lower House as well as president of the parliamentary group/commission.

Table C.2: Cosponsors recruited - Lockdowns and remote work

	(1) Excluding 2020 Cosponsored (=1)	(2) 2020 only Cosponsored (=1)	(3) Lockdowns only Cosponsored (=1)	(4) Excluding 2020 Nb cosponsors	(5) 2020 only Nb cosponsors	(6) Lockdowns only Nb cosponsors
Panel A: Bills						
Female parl.	-0.073*	-0.091**	-0.106**	-9.407***	3.445	-2.348
	(0.043)	(0.035)	(0.053)	(3.240)	(6.542)	(7.803)
N	3342	535	225	2477	489	240
Mean dep. var.	0.73	0.88	0.85	39.4	35.7	35.8
Panel B: Amendments						
Female parl.	-0.006	0.057*	0.059	-0.519	0.389	0.698
	(0.026)	(0.030)	(0.046)	(0.895)	(1.290)	(1.922)
N	344244	106725	16368	204748	33456	10925
Mean dep. var.	0.60	0.32	0.69	16.6	19.1	20.5
Controls:						
Term f.e.	Yes	Yes	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes	Yes	Yes
Constituency	Yes	Yes	Yes	Yes	Yes	Yes

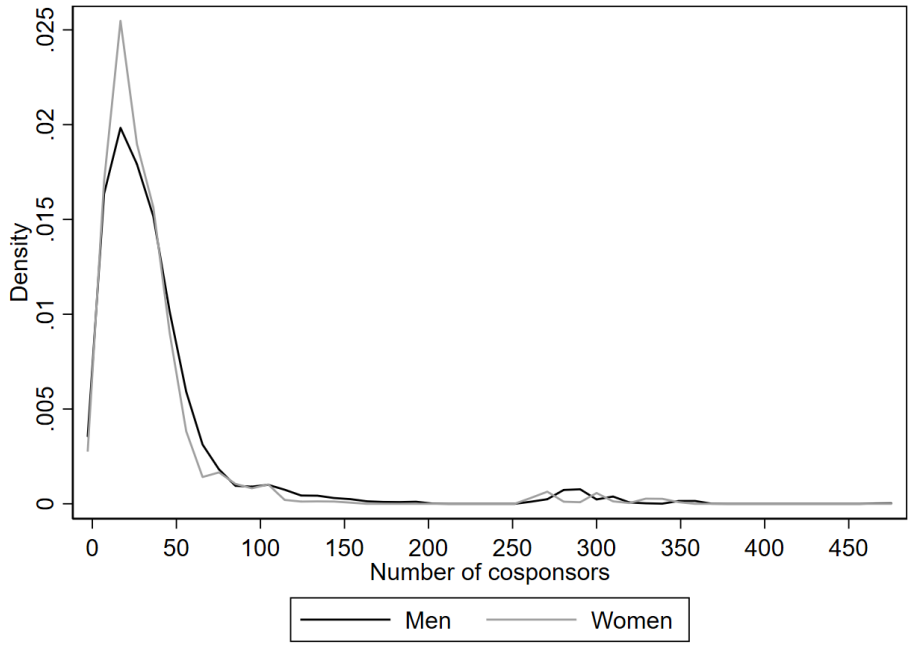
Notes: standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. "Lockdown only" include the bills/amendments registered during the lockdown periods: March-June 2020 and November 2020.

Table C.3: Cosponsors recruited - Logit instead of OLS

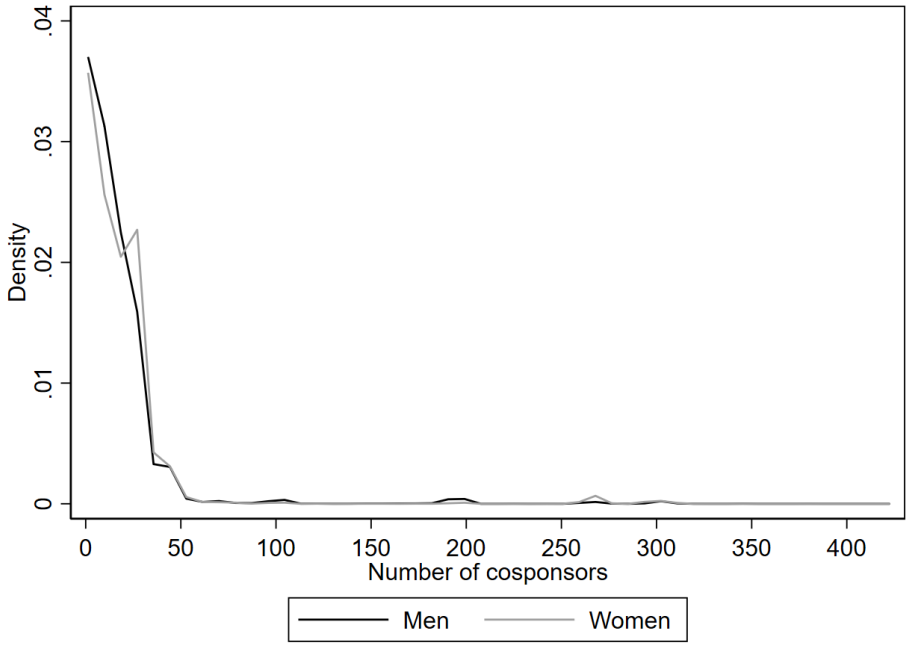
	(1) Spec. 1	(2) Spec. 2	(3) Spec. 3	(4) Spec. 4	(5) Spec. 5	(6) Spec. 6	(7) Spec. 7
	Panel A: Bills - Cosponsored (=1)						
Female parl.	0.0507	-0.092	-0.343	-0.398	-0.430*	-0.395	-0.517**
	(0.301)	(0.311)	(0.273)	(0.284)	(0.246)	(0.271)	(0.261)
	[0.009]	[-0.016]	[-0.057]	[-0.061]	[-0.063]	[-0.057]	[-0.073]
N	3904	3904	3904	3898	3898	3898	3898
	Panel B: Amendments - Cosponsored (=1)						
Female parl.	-0.005	-0.007	0.007	0.016	0.016	0.017	0.018
	(0.039)	(0.039)	(0.037)	(0.030)	(0.030)	(0.030)	(0.028)
	[-0.005]	[-0.007]	[0.007]	[0.015]	[0.016]	[0.017]	[0.017]
N	450969	450969	450969	450969	450969	450969	450969
Controls:							
Term f.e.	No	Yes	Yes	Yes	Yes	Yes	Yes
Experience	No	No	Yes	Yes	Yes	Yes	Yes
Political	No	No	No	Yes	Yes	Yes	Yes
Parl. comm.	No	No	No	No	Yes	Yes	Yes
Occupation	No	No	No	No	No	Yes	Yes
Constituency	No	No	No	No	No	No	Yes

Notes: standard errors clustered at parliamentarian level in parentheses; marginal effects in brackets; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Figure C.1: Differences in cosponsors recruited across gender (kernel density)



(a) Bills



(b) Amendments

Note: We restrict the sample to bills and amendments with at least one cosponsor.

Table C.4: Cosponsors recruited - Effect of observables (continued)

	(1) Spec. 1	(2) Spec. 2	(3) Spec. 3	(4) Spec. 4	(5) Spec. 5	(6) Spec. 6	(7) Spec. 7
Panel A: Bills - Nb of cosponsors from own group							
Female parl.	-5.247	-3.056	-3.418	-4.045	-3.637	-3.287	-3.902
	(5.033)	(4.110)	(3.672)	(2.582)	(2.562)	(2.628)	(2.603)
N	2966	2966	2966	2966	2966	2966	2966
Panel B: Bills - Nb of cosponsors from other groups							
Female parl.	-0.157	-0.855	-1.164	-1.672	-2.191*	-2.440*	-2.485**
	(1.260)	(1.332)	(1.381)	(1.057)	(1.128)	(1.247)	(1.250)
N	2966	2966	2966	2966	2966	2966	2966
Panel C: Bills - Nb of cosponsors from opposite group							
Female parl.	0.0348	-0.213	-0.229	-0.477	-0.480	-0.662	-0.707
	(0.453)	(0.473)	(0.474)	(0.349)	(0.411)	(0.463)	(0.467)
N	2966	2966	2966	2966	2966	2966	2966
Panel D: Amendments - Nb of cosponsors from own group							
Female parl.	-0.722	-0.850	-0.807	0.361	0.479	0.375	-0.069
	(1.035)	(0.985)	(0.926)	(0.817)	(0.814)	(0.849)	(0.856)
N	238204	238204	238204	238204	238204	238204	238204
Panel E: Amendments - Nb of cosponsors from other groups							
Female parl.	0.246	0.142	0.198	-0.361	-0.410	-0.370	-0.409
	(0.346)	(0.363)	(0.307)	(0.241)	(0.254)	(0.269)	(0.280)
N	238204	238204	238204	238204	238204	238204	238204
Panel F: Amendments - Nb of cosponsors from opposite group							
Female parl.	0.194	0.113	0.127	-0.371*	-0.427*	-0.440*	-0.488*
	(0.318)	(0.336)	(0.271)	(0.220)	(0.235)	(0.249)	(0.250)
N	238204	238204	238204	238204	238204	238204	238204
Controls:							
Term f.e.	No	Yes	Yes	Yes	Yes	Yes	Yes
Experience	No	No	Yes	Yes	Yes	Yes	Yes
Political	No	No	No	Yes	Yes	Yes	Yes
Parl. comm.	No	No	No	No	Yes	Yes	Yes
Occupation	No	No	No	No	No	Yes	Yes
Constituency	No	No	No	No	No	No	Yes

Notes: standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. "Other groups" means than the cosponsors come from a group other than that of the parliamentarian. "Opposite group" means than the cosponsor' group does not have the same political orientation (i.e. it belongs to the majority if the parliamentarian is in the opposition group and vice-versa).

Table C.5: Cosponsors recruited - Estimates without outliers

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Without top 5% authors		Without presidents of pol. gp		Without influential positions		Without influential positions and former ministers	
	Cosponsored (=1)	Total number of cosponsors	Cosponsored (=1)	Total number of cosponsors	Cosponsored (=1)	Total number of cosponsors	Cosponsored (=1)	Total number of cosponsors
Panel A: Bills								
Female parl.	0.0174	-4.969	-0.0806**	-5.643*	-0.0850**	-5.992**	-0.0875**	-6.032*
	(0.028)	(3.390)	(0.040)	(3.099)	(0.042)	(2.988)	(0.043)	(3.170)
N	2809	2224	3780	2860	3286	2489	3228	2442
Panel B: Amendments								
Female parl.	0.0693***	-0.845	0.0106	-0.919	0.0200	-0.612	0.0194	-0.625
	(0.024)	(1.017)	(0.028)	(0.891)	(0.029)	(0.956)	(0.029)	(0.975)
N	297385	171322	438953	230871	380339	195107	372015	190989
Spec.	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Controls:								
Term f.e.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constituency	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. "Other groups" means than the cosponsors come from a group other than that of the parliamentarian. "Opposite group" means than the cosponsor' group does not have the same political orientation (i.e. it belongs to the majority if the parliamentarian is in the opposition group and vice-versa). Control variables about individual characteristics include: experience, political characteristics, parliamentary commission and occupation.

Table C.6: Cosponsors recruited - Share (%) instead of nb of parliamentarians

	(1)	(2)	(3)	(4)
	All bills/amend.	Cosponsored bills/amend.		
	% of own gp having cosponsored	% of own gp having cosponsored	% of other gp among cosp.	% of opposite gp among cosp.
	Panel A: Bills			
Female parl.	-0.045**	-0.031*	-0.015	-0.0099
	(0.021)	(0.018)	(0.016)	(0.011)
N	3517	2752	2752	2752
adj. R^2	0.379	0.433	0.428	0.313
Mean dep. var.	0.28	0.36	0.12	0.05
	Panel B: Amendments			
Female parl.	0.007	-0.004	-0.028**	-0.029**
	(0.016)	(0.013)	(0.012)	(0.012)
N	419683	223158	223158	223158
adj. R^2	0.231	0.603	0.261	0.282
Mean dep. var.	0.17	0.32	0.08	0.09
Spec.	OLS	OLS	OLS	OLS
Controls:				
Term f.e.	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes
Constituency	Yes	Yes	Yes	Yes

Notes: standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, ***. $p < 0.01$. We exclude parliamentarians who do not belong to any political group (*non-inscrits*). In columns 2, 3 and 4, we restrict the sample to bills and amendments that are cosponsored.

Table C.7: Cosponsors granted - Effect of observables on cosponsors granted

	(1) Spec. 1	(2) Spec. 2	(3) Spec. 3	(4) Spec. 4	(5) Spec. 5	(6) Spec. 6	(7) Spec. 7
				Panel A: Bills			
Female parl.	-18.07***	-22.96***	-8.983	1.804	0.633	0.862	1.641
	(6.552)	(6.568)	(6.596)	(5.174)	(5.256)	(5.319)	(5.300)
N	1139	1139	1139	1139	1139	1139	1139
				Panel B: Amendments			
Female parl.	158.3	-280.5	-36.21	333.8**	298.0**	334.3**	320.1**
	(213.016)	(198.696)	(202.200)	(140.702)	(142.407)	(143.942)	(144.711)
N	1140	1140	1140	1140	1140	1140	1140
Controls:							
Term f.e.	No	Yes	Yes	Yes	Yes	Yes	Yes
Experience	No	No	Yes	Yes	Yes	Yes	Yes
Political	No	No	No	Yes	Yes	Yes	Yes
Parl. comm.	No	No	No	No	Yes	Yes	Yes
Occupation	No	No	No	No	No	Yes	Yes
Constituency	No	No	No	No	No	No	Yes

Notes: standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table C.8: Cosponsors granted - Estimates without outliers

	(1) With most active cosponsors (top 5%)	(2) Without presidents of pol. gp.	(3) Without influential positions
		Panel A: Bills	
Female parl.	0.138	2.336	2.681
	(3.204)	(5.315)	(5.649)
N	1076	1125	989
adj. R^2	0.460	0.463	0.444
Mean dep. var.	75	95	95
		Panel B: Amendments	
Female parl.	218.6**	314.2**	367.0**
	(107.985)	(144.823)	(156.347)
N	1076	1126	990
adj. R^2	0.649	0.614	0.607
Mean dep. var.	2713	3169	3167
Spec.	OLS	OLS	OLS
Controls:			
Term f.e.	Yes	Yes	Yes
Individual	Yes	Yes	Yes
Constituency	Yes	Yes	Yes

Notes: standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, ***. $p < 0.01$. In columns 3 and 4, we restrict the sample to bills and amendments that are cosponsored.

Table C.9: Cosponsors recruited - Majority and opposition groups

	(1) Cosponsored (=1)	(2) Total number of cosponsors	(3) Nb of cosponsors from own group	(4) Nb of cosponsors from other groups	(5) Nb of cosponsors from opposite group
			Panel A: Bills		
Male × Opposition	Ref.	Ref.	Ref.	Ref.	Ref.
Male × Majority	-0.058	28.90***	7.904	21.00***	5.163***
	(0.071)	(9.916)	(6.787)	(6.313)	(1.713)
Female × Opposition	-0.103**	-3.519	-2.695	-0.824	0.115
	(0.045)	(2.328)	(2.106)	(1.009)	(0.356)
Female × Majority	-0.028	8.982	-1.463	10.44*	0.376
	(0.080)	(10.185)	(7.971)	(5.342)	(2.045)
Diff female - male majority	*0.030*	*-19.918*	*-9.367*	*-10.560***	*-4.787***
N	3904	2966	2966	2966	2966
			Panel B: Amendments		
Male × Opposition	Ref.	Ref.	Ref.	Ref.	Ref.
Male × Majority	0.063*	1.420	-1.618	3.039***	3.119***
	(0.034)	(1.320)	(1.368)	(0.706)	(0.689)
Male × Opposition	-0.006	-2.483**	-3.086**	0.603*	0.518
	(0.039)	(1.211)	(1.263)	(0.360)	(0.326)
Female × Majority	0.123***	2.285	0.332	1.953***	1.773***
	(0.138)	(1.447)	(1.511)	(0.456)	(0.362)
Diff female - male majority	*0.059**	*0.865*	*1.950*	-1.806*	*-1.346***
N	450969	238204	238204	238204	238204
Spec.	OLS	OLS	OLS	OLS	OLS
Controls:					
Term f.e.	Yes	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes	Yes
Constituency	Yes	Yes	Yes	Yes	Yes

Notes: standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. "Other groups" means than the cosponsors come from a group other than that of the parliamentarian. "Opposite group" means than the cosponsor' group does not have the same political orientation (i.e. it belongs to the majority if the parliamentarian is in the opposition group and vice-versa). Control variables about individual characteristics include: experience, political characteristics, parliamentary commission and occupation.

Table C.10: Cosponsors recruited - Control for parliamentarians' occupation and education

	(1) Baseline w/o occupation	(2) Baseline with occupation	(3) Baseline with education	(4) Baseline with occ. and educ.
	Panel A: Bills - Cosponsored (=1)			
Female parl.	-0.0773**	-0.0797**	-0.0858**	-0.0905**
	(0.037)	(0.040)	(0.039)	(0.042)
N	3904	3904	3904	3904
	Panel B: Bills - Total nb of cosponsors			
Female parl.	-6.300**	-6.387**	-5.648*	-5.963*
	(2.861)	(3.002)	(2.908)	(3.036)
N	2966	2966	2966	2966
	Panel C: Amendments - Cosponsored (=1)			
Female parl. 0.0146	0.0175	0.0114	0.0138	
	(0.029)	(0.028)	(0.028)	(0.027)
N	450969	450969	449560	449560
	Panel D: Amendments - Total nb of cosponsors			
Female parl.	-0.372	-0.479	-0.168	-0.371
	(0.849)	(0.879)	(0.828)	(0.857)
N	238204	238204	238128	238128
Controls:				
Term f.e.	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes
Constituency	Yes	Yes	Yes	Yes

Notes: standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Control variables about individual characteristics include: experience, political characteristics and parliamentary commission.

Table C.11: Cosponsors recruited - Bills and amendments about women, health and child issues

	(1) Cosponsored (=1)	(2) Total number of cosponsors	(3) Nb of cosponsors from own group	(4) Nb of cosponsors from other groups	(5) Nb of cosponsors from opposite group
			Panel A: Bills		
Female parl.	-0.009	-9.574	-5.937	-3.636*	-1.043
	(0.053)	(7.476)	(6.688)	(2.060)	(0.745)
N	445	356	356	356	356
			Panel B: Amendments		
Female parl.	0.017	-0.705	-0.588	-0.117	-0.369
	(0.031)	(1.042)	(1.001)	(0.315)	(0.228)
N	96902	52744	52744	52744	52744
Spec.	OLS	OLS	OLS	OLS	OLS
Controls:					
Term f.e.	Yes	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes	Yes
Constituency	Yes	Yes	Yes	Yes	Yes

Notes: standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. "Other groups" means than the cosponsors come from a group other than that of the parliamentarian. "Opposite group" means than the cosponsor' group does not have the same political orientation (i.e. it belongs to the majority if the parliamentarian is in the opposition group and vice-versa). Control variables about individual characteristics include: experience, political characteristics, parliamentary commission and occupation.

Table C.12: Cosponsors recruited - Number of women in the political group

	(1) Share of women among cosponsors	(2) Cosponsored (=1)	(3) Total number of cosponsors	(4) Nb of cosponsors from own group
		Panel A: Bills		
Female parl.	0.0181*	-0.0770*	-7.065**	-4.771*
	(0.010)	(0.041)	(3.000)	(2.636)
Nb women in political group		-0.002*	0.275**	0.353***
		(0.001)	(0.133)	(0.099)
N	2966	3904	2966	2966
Mean dep. var.	0.26			
		Panel B: Amendments		
Female parl.	0.039***	0.019	-0.496	-0.118
	(0.010)	(0.027)	(0.873)	(0.843)
Nb women in political group		0.004***	0.0228	0.067*
		(0.001)	(0.042)	(0.040)
N	238204	450969	238204	238204
Mean dep. var.	0.38			
Spec.	OLS	OLS	OLS	OLS
Controls:				
Term f.e.	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes
Constituency	Yes	Yes	Yes	Yes

Notes: standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Control variables about individual characteristics include: experience, political characteristics, parliamentary commission and occupation.

Table C.13: Cosponsors recruited - Share of cosponsors holding influential positions

	(1) Share of top pos. among cosponsors	(2) Share of top pos. among cosponsors	(3) Total number of cosponsors	(4) Nb of cosponsors from own group
		Panel A: Bills		
Female parl.	0.006	0.002	-6.353**	-3.881
	(0.008)	(0.009)	(3.016)	(2.601)
% of cosponsors			-0.203*	-0.125
from top positions			(0.122)	(0.107)
N	3021	2966	2966	2966
Mean dep. var.	0.13			
		Panel B: Amendments		
Female parl.	0.001	0.004	-0.485	-0.064
	(0.008)	(0.007)	(0.878)	(0.856)
% of cosponsors			0.013	-0.015
from top positions			(0.026)	(0.025)
N	245151	238204	238204	238204
Mean dep. var.	0.13			
Spec.	OLS	OLS	OLS	OLS
Controls:				
Term f.e.	Yes	Yes	Yes	Yes
Individual	No	Yes	Yes	Yes
Constituency	No	Yes	Yes	Yes

Notes: standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. We restrict the sample to bills/amendments cosponsored. Control variables about individual characteristics include: experience, political characteristics, parliamentary commission and occupation.

Table C.14: Cosponsors recruited - Newcomer and experienced parliamentarians

	(1) Cosponsored (=1)	(2) Total number of cosponsors	(3) Nb of cosponsors from own group	(4) Nb of cosponsors from other groups	(5) Nb of cosponsors from opposite group
			Panel A: Bills		
Male × Experienced	Ref.	Ref.	Ref.	Ref.	Ref.
Male × Newcomer	0.021	-6.391	-6.442	0.0508	-0.975**
	(0.042)	(4.344)	(4.191)	(1.174)	(0.451)
Female × Experienced	-0.045	-8.446*	-6.684*	-1.762	-1.090*
	(0.079)	(4.539)	(3.704)	(2.103)	(0.555)
Female × Newcomer	-0.008	-11.47**	-8.421*	-3.052**	-1.450**
	(0.057)	(4.591)	(4.412)	(1.306)	(0.684)
Female - male newcomer	*-0.029*	*-5.079*	*-1.979*	*-3.103***	*-0.475*
N	3904	2966	2966	2966	2966
			Panel B: Amendments		
Male × Experienced	Ref.	Ref.	Ref.	Ref.	Ref.
Male × Newcomer	0.025	1.279	1.999	-0.720**	-0.567
	(0.034)	(1.311)	(1.281)	(0.356)	(0.350)
Male × Experienced	0.121**	1.033	1.759	-0.727**	-0.749**
	(0.051)	(1.702)	(1.666)	(0.341)	(0.356)
Female × Newcomer	0.003	0.307	1.398	-1.091**	-1.012*
	(0.036)	(1.356)	(1.301)	(0.540)	(0.528)
Female - male newcomer	*-0.022*	*-0.972*	*-0.601*	*-0.371*	*-0.445*
N	450969	238204	238204	238204	238204
Spec.	OLS	OLS	OLS	OLS	OLS
Controls:					
Term f.e.	Yes	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes	Yes
Constituency	Yes	Yes	Yes	Yes	Yes

Standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. "Other groups" means than the cosponsors come from a group other than that of the parliamentarian. "Opposite group" means than the cosponsor' group does not have the same political orientation (i.e. it belongs to the majority if the parliamentarian is in the opposition group and vice-versa). Control variables about individual characteristics include: experience, political characteristics, parliamentary commission and occupation.

Table C.15: Cosponsors recruited - Newcomer and experienced parliamentarians (by sub-periods)

	(1) Beginning Cosponsored (=1)	(2) Middle Cosponsored (=1)	(3) End Cosponsored (=1)	(4) Beginning Total nb of cosponsors	(5) Middle Total nb of cosponsors	(6) End Total nb of cosponsors
			Panel A: Bills			
Male × Experienced	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Male × Newcomer	0.118**	0.009	-0.027	3.385	-9.190*	-11.66
	(0.059)	(0.040)	(0.056)	(4.203)	(5.488)	(8.386)
Female × Experienced	-0.017	-0.027	-0.068	-0.468	-13.66***	-6.311
	(0.085)	(0.075)	(0.107)	(4.924)	(5.061)	(9.513)
Female × Newcomer	0.109	-0.050	-0.058	-4.400	-12.85**	-18.53**
	(0.089)	(0.057)	(0.077)	(4.626)	(6.306)	(9.234)
Female - male newcomer	*-0.009*	*-0.059*	*-0.031*	*-7.785*	*-3.660*	*-6.87*
N	1343	1516	1045	969	1242	755
			Panel B: Amendments			
Male × Experienced	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Male × Newcomer	0.115***	0.002	0.026	1.810	0.176	2.496
	(0.034)	(0.038)	(0.038)	(1.874)	(1.509)	(2.021)
Male × Experienced	0.035	0.135**	0.055	1.637	0.857	0.824
	(0.050)	(0.057)	(0.056)	(1.654)	(1.918)	(2.404)
Female × Newcomer	0.088**	0.006	0.007	-0.623	-1.120	2.235
	(0.039)	(0.041)	(0.043)	(2.027)	(1.610)	(1.860)
Female - male newcomer	*-0.027*	*0.004*	*-0.019*	*-2.433*	*-1.296*	*-0.261*
N	112856	234506	103602	66535	110788	60881
Spec.	OLS	OLS	OLS	OLS	OLS	OLS
Controls:						
Term f.e.	Yes	Yes	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes	Yes	Yes
Constituency	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. "Beginning" refers to the first 18 months of the term, "end" to the last 18 months of the term and "Middle" to the 2 years between the beginning and the end. Control variables about individual characteristics include: political characteristics, parliamentary commission and occupation.

Table C.16: Cosponsors granted - Newcomer and experienced parliamentarians (by sub-periods)

	(1) Beginning Cosponsors granted	(2) Middle Cosponsors granted	(3) End Cosponsors granted
	Panel A: Bills		
Male × Experienced	Ref.	Ref.	Ref.
Male × Newcomer	-1.009	-3.602	1.118
	(2.608)	(3.370)	(1.665)
Female × Experienced	1.244	-3.430	-0.963
	(3.535)	(4.568)	(2.256)
Female × Newcomer	-2.760	-2.136	3.617*
	(2.901)	(3.749)	(1.852)
Female - male newcomer	*-1.751*	*1.466*	*2.499**
N	1139	1139	1139
	Panel B: Amendments		
Male × Experienced	Ref.	Ref.	Ref.
Male × Newcomer	51.37**	176.6***	53.66***
	(24.557)	(48.414)	(18.344)
Male × Experienced	-3.278	-47.30	4.823
	(33.289)	(65.627)	(24.867)
Female × Newcomer	74.19***	234.3***	81.87***
	(27.317)	(53.855)	(20.406)
Female - male newcomer	*22.8*	*57.7*	*28.2*
N	1140	1140	1140
Spec.	OLS	OLS	OLS
Controls:			
Term f.e.	Yes	Yes	Yes
Individual	Yes	Yes	Yes
Constituency	Yes	Yes	Yes

Standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. 'Beginning" refers to the first 18 months of the term, "end" to the last 18 months of the term and "Middle" to the 2 years between the beginning and the end. Control variables about individual characteristics include: political characteristics, parliamentary commission and occupation.

Table C.17: Cosponsors recruited - Amendments by type of bills/authors

	(1) Cosponsored (=1)	(2) Total number of cosponsors	(3) Nb of cosponsors from own group	(4) Nb of cosponsors from other groups	(5) Nb of cosponsors from opposite group
			Panel A: Amendments about bills authored by parliamentarians		
Female parl.	-0.002	0.960	0.819	0.142	-0.135
	(0.029)	(1.963)	(1.827)	(0.506)	(0.199)
N	48249	23189	23189	23189	23189
Mean dep. var.	0.48	19.4	18.0	1.4	1.1
			Panel B: Amendments about bills authored by the government		
Female parl.	0.020	-0.861	-0.410	-0.451	-0.518**
	(0.029)	(0.893)	(0.867)	(0.288)	(0.261)
N	400328	213590	213590	213590	213590
Mean dep. var.	0.54	16.7	15.1	1.6	1.3
			Panel C: Amendments not authored by *rapporteurs*		
Female parl.	0.007	-0.850	-0.431	-0.420	-0.474*
	(0.029)	(0.891)	(0.862)	(0.286)	(0.256)
N	407443	219473	219473	219473	219473
Mean dep. var.	0.54	16.9	15.3	1.5	1.2
Spec.	OLS	OLS	OLS	OLS	OLS
Controls:					
Term f.e.	Yes	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes	Yes
Constituency	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. "Other groups" means than the cosponsors come from another political group. "Opposite group" means than the cosponsors come from another political group **and** that this group does not have the same political orientation (i.e. it belongs to the majority if the parliamentarian is in the opposition group and vice-versa). Control variables about individual characteristics include: experience, political characteristics, parliamentary commission and occupation.

Table C.18: Cosponsors granted - Amendments by type of bills/authors

	(1) All types of bills	(2) Bills authored by government	(3) Bills authored by parliamentarians
Female parl.	320.1**	278.0**	41.90***
	(144.708)	(130.273)	(16.013)
N	1140	1140	1140
Mean dep. var.	3200	2819	365
Spec.	OLS	OLS	OLS
Controls:			
Term f.e.	Yes	Yes	Yes
Individual	Yes	Yes	Yes
Constituency	Yes	Yes	Yes

Notes: standard errors clustered at parliamentarian level in parentheses; * $p < 0.10$, ** $p < 0.05$, ***. $p < 0.01$.