Gender and Lawmaking in Times of Quotas. Evidence from the French Parliament

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14th February 2019
Motivation

• **Women are underrepresented in politics**
  - Account for 24% of parliament seats worldwide in 2018

• Central argument for equal representation: *gender matters for policymaking*

• Important implications:
  1. Absence of women in politics may bias policymaking in favor of men
  2. Implications beyond the question of gender

• **This article tests this argument**
What We Know: Does Gender Matter for Policymaking?

1. In theory: unclear
   - **Median voter** framework (Downs, 1957) → Policies are determined by voters’ preferences
   - **Citizen-candidate** models (Osborne & Slivinski, 1996 or Besley & Coate, 1997) → Politicians’ preferences determine policymaking

Empirically: mixed evidence
- Conflicting evidence
- Evidence from developing countries that women deliver different types of policies (Chattopadhyay & Duflo, 2004, Bhalotra & Clots-Figueras, 2014, Brollo & Troiano, 2016)
- Difficult to replicate in developed countries (Ferreira and Gyourko, 2014 or Bagues & Campa, 2017)
- Data limitations: does different mean women-related?
- Relies on spending or public goods data
- Rarely include women’s issues
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This Paper

- Investigates the effect of legislators’ gender on policymaking towards women’s issues

- Methods
  - Text analysis to select work related to women’s issues
  - Quasi-experimental variations to identify the impact of legislators’ gender

- Data from the French Parliament during the period 2001-2017
  - Over 300,000 amendments from the Lower and the Upper House
Preview Results

1 Identifying amendments related to women’s issues
   • Dictionary: "women", "sex", "gender"

2 Are female legislators more involved on women’s issues?
   • Twice more likely to initiate amendments related to women’s issues
   • Co-sponsor twice more amendments related to women’s issues

3 Are there gender differences on other topics?
   • Women’s issues constitute the key topic where female legislators are more active
   • Followed by health and child issues while men are more involved on military issues

4 Mechanisms: Is it driven by individual interest?
   • Evidence supporting this hypothesis
   • As we move closer to the individual interest of legislators, gender differences increase

5 Implications for gender quotas?
   • Replicate this analysis in the Upper House exploiting the introduction of a gender quota
   • Obtain similar results
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   - Replicate this analysis in the Upper House exploiting the introduction of a gender quota
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Data

Empirical Strategy

Results

Extensions

Conclusion
Amendments as the Main Form of Initiative and Policymaking

- Work of legislators consist in **producing and voting the law**
  - Amendments, bills and votes

- Amendments as the main form of initiative
  - consist of deletion, modification or addition of articles included in an existing bill
  - An amendment is **inevitably examined** whereas a bill is not
  - Strong party **discipline** on votes

- Scholars have recognized amendments as the main form of parliamentary initiative (Knapp and Wright 2006, Avril and Gicquel 2004)

- **Main outcome**: Initiation of an amendment by a legislator
Motivation

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Sources: Lower House Website

- All the **amendments are recorded from 2002 until 2017**
  - Contains all the information: date, author, co-sponsors, content, bill’s reference, outcome ...

- **Web scraped the data** to build an analyzable dataset
  - 207,559 amendments from the Lower House

- **Matched with information on parliamentarians**: sex, age, political inclination, electoral score, demographic information on the constituency,...
  - Parliamentarians elected in 2002, 2007 and 2012
Identifying Women-Related Amendments: Procedure

- **Problem**: amendments are not classified by topic

- **Hypothesis**: an amendment on women’s issues will effectively mention women

- **Solution**: classify amendments based on the information they contain
  - Build a dictionary containing references to women
    - **Use 3 keywords**: "Wom", "Gender", "Sex"
    - Leads to an exhaustive definition
    - Restrict to "wom" in robustness

- Apply this dictionary on amendments to classify
  - **Use the bill’s title and the motivation**
  - If an amendment contains one of these words, it is classified as related to women

- Classification leads to:
  - 3,744 women-related amendments in the Lower House (1.89%)
Validity of the Classification

- **Manual Screening:** Read the 3,744 amendments classified as women-related in the Lower House
  - 86% directly mention women’s issues
  - About 10% referred to a profession occupied mostly by women such as nurse

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

<table>
<thead>
<tr>
<th>Rank</th>
<th>N</th>
<th>Keywords</th>
<th>N</th>
<th>Keywords</th>
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<td>part time</td>
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<td>delegation rights wom</td>
<td>271</td>
<td>equality professional</td>
</tr>
</tbody>
</table>

Notes: the data comes from all the amendments produced in the Lower House during the period 2002-2017. It is restricted to amendments identified as related to gender issues with a dictionary-based method.
Motivation

Institutional Setting

Data

Empirical Strategy

Results

Extensions

Conclusion
Lower House Elections in France

- Elections occur every 5 years
- Single member constituency $\Rightarrow$ Each legislator represents different voters
  - 577 legislators are elected in 577 constituencies
- Two round plurality voting round system
  - Only the most popular is elected
Identifying the Effect of Legislators’ Gender

• **Main Outcome**: Dummy that equals 1 if the legislator has initiated at least one women-related amendment

• **Pooled OLS specification**:

\[ Y_{ict} = \alpha + \beta Woman_{ict} + \gamma X_{ict} + \epsilon_{ict} \]  

(1)

- i, c and t correspond resp. to the legislator, constituency and time level
- X contains controls at the individual (age, incumbency status, electoral score, party affiliation) and constituency level (female labor force participation)

• **Identification Issue**: women are more likely to be elected in more gender-friendly constituencies
Disentangling Identity from Constituents’ Preferences

1. **Fixed-Effect** specification

\[ Y_{ict} = \alpha + \beta \text{Woman}_{ict} + \gamma X_{ict} + \mu_c + \epsilon_{ict} \]  

- i is the subscript for the legislator level and c for a constituency
- But unobservables could vary over time undermining the causal interpretation

2. **Regression-Discontinuity** specification

- **Focus on close race** between top male and female candidates
  - Victory within a small margin can be considered as random

- **Build running variable** \( X_i \): female’s score - male’s score
  - Defined at the constituency level
  - Positive if a woman wins
  - Negative if a woman loses

\[ Y_i = \alpha + \beta 1\{X_i > 0\} + \gamma f(X_i) + \epsilon_i \]  

- \( 1\{X_i > 0\} \) is a dummy that equals 1 if a woman wins
Internal Validity Tests

1. No evidence of vote share manipulation

2. Supporting evidence that confounders are continuous at the threshold

   - 3 sets of characteristics: demographics, elections, preferences for politicians’ gender
Motivation

Institutional Setting

Data

Empirical Strategy

Results

Extensions

Conclusion
# Results

## Limited Gender Differences in Overall Parliamentarian Activity

<table>
<thead>
<tr>
<th>Specification</th>
<th>(1) Pooled OLS</th>
<th>(2) Fixed Effects</th>
<th>(3) Regression Discontinuity</th>
<th>(4) LLR Polynomial</th>
<th>(5) LLR IK</th>
<th>(6) LLR CCT</th>
<th>(7) LLR CCT/2</th>
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</thead>
<tbody>
<tr>
<td>Panel A - Dep. Variable: N Authored</td>
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<td>Constituencies</td>
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<td>597</td>
<td>469</td>
<td>328</td>
<td>221</td>
<td>136</td>
<td></td>
</tr>
</tbody>
</table>

| Panel B - Dep. Variable: At Least One Authored (1=Yes) |
| Woman (1=Yes)           | 0.01           | 0.04              | 0.09**                       | 0.08                | 0.07     | 0.09       |
|                        | (0.02)         | (0.04)            | (0.04)                       | (0.07)              | (0.08)   | (0.11)     |
| Bandwidth Restriction   | None           | 16.8              | 11.7                         | 5.8                 |
| Observations            | 1663           | 1663              | 791                          | 400                 | 283      | 147        |
| Constituencies          | 597            | 597               | 469                          | 281                 | 216      | 129        |

Notes: * p < 0.1, ** p < 0.05, *** p < 0.01. The data comes from the French Lower House during the period 2002-2017. Standard errors clustered at the constituency level are given in parentheses. The "Control Mean" line designates the outcome mean for the sample of male legislators. The "Scaled Effect" line designates the impact of female legislators scaled to the mean of male legislators (Treatment Effect/Control Mean).
Women Are Twice More Likely to Initiate Women-Related Amendments

Notes: The data comes from the French Lower House during the period 2002-2017. There are 10 bins on each side of the cutoff.
## Results

**Women Are Twice More Likely to Initiate Women-Related Amendments**

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<th>LLR CCT/2</th>
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<tr>
<td>Woman (1=Yes)</td>
<td>0.17*** (0.03)</td>
<td>0.20*** (0.05)</td>
<td>0.25*** (0.06)</td>
<td>0.25*** (0.08)</td>
<td>0.22** (0.09)</td>
<td>0.32** (0.13)</td>
<td></td>
</tr>
<tr>
<td>Control Mean</td>
<td>0.22</td>
<td>0.22</td>
<td>0.19</td>
<td>0.21</td>
<td>0.20</td>
<td>0.19</td>
<td></td>
</tr>
<tr>
<td>Scaled Effect</td>
<td>76.4</td>
<td>89.9</td>
<td>128.0</td>
<td>120.0</td>
<td>109.5</td>
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<tr>
<td>Bandwidth Restriction</td>
<td>None</td>
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<tr>
<td>Observations</td>
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<td>1663</td>
<td>791</td>
<td>452</td>
<td>341</td>
<td>183</td>
<td></td>
</tr>
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<td>Constituencies</td>
<td>597</td>
<td>597</td>
<td>469</td>
<td>307</td>
<td>249</td>
<td>156</td>
<td></td>
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Notes: * p < 0.1, ** p < 0.05, *** p < 0.01. The data comes from the French Lower House during the period 2002-2017. Standard errors clustered at the constituency level are given in parentheses. The "Control Mean" line designates the outcome mean for the sample of male legislators. The "Scaled Effect" line designates the impact of female legislators scaled to the mean of male legislators (Treatment Effect/Control Mean).
Extension to Other Topics

• **Twofold objective**

  1. Are women’s issues the key topic on which women are more active?
  2. Are there gender differences in involvement on other topics?

• **Dictionary-Based Methods**

  • Define a **list of 27 topics**: usual government ministries
  • **Manually Classify the 10,000 most recurring words** into 27 topics
Extension to Other Topics: Authorship Analysis

(a) Specification: Pooled OLS

Notes: the data comes from the French Lower House during the period 2002-2017. Each row corresponds to a topic. The outcome is a dummy that equals 1 if the legislator initiates at least one amendment on the topic considered. Each dot represents the coefficient associated to the variable Women divided by the average of male legislators (scaled effect). Confidence intervals are represented at the 95% level. Graph (a) and (b) respectively represent estimates from the pooled OLS specification and the RDD mixed-gender close race with the CCT bandwidth.
Extension to Other Topics: Authorship Analysis

(c) Specification: Pooled OLS
(d) Specification: RDD mixed-gender close races

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

Conclusion
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1 Investigate the mechanisms
   • Constituents’ preferences: does not appear to drive the results
   • Political Parties’ strategies vs Individual Interest: Restrict the sample to cases more likely to represent individual interest and find that gender differences increase when we move closer to individual interest

2 Implications for gender quotas?
   • Exploit the introduction of a gender quota in the Upper House
   • Obtain similar results
   • Suggest that gender quotas increase the prevalence of women’s issues
Conclusion

• **Main results**
  • As compared to their male counterparts, female legislators
    • initiate and co-sponsor twice more amendments related to women’s issues
  • **Women’s issues constitute the key topic** where women are more active relatively to men
    • Followed by health and child issues whereas men are more active on military issues
  • Evidence that this is driven by *individual interest*
  • Evidence that *gender quotas increase the prevalence of women’s issues*

• **From a public policy perspective**
  • Suggest that the underrepresentation of women in politics biases policymaking
  • Suggest that gender quotas lead to a shift in policymaking

• **Future research**
  • Simple method that can be extended to alternative settings and alternative dimensions of identity
Limited Gender Differences in Overall Parliamentarian Activity

Notes: The data comes from the French Lower House during the period 2002-2017. There are 10 bins on each side of the cutoff.
Identifying Women-Related Amendments

- Problem: Amendments are not classified by topic
- Information available: bill’s title, content and motivation

Example of Amendment on the Lower House website

Notes: This figure comes from the Lower House website at http://www.assemblee-nationale.fr/14/amendements/2043/AN/58.asp.
Women Co-Sponsor Twice More Women-Related Amendments

(e) Outcome: N Co-Sponsored per Year  
(f) Outcome: Share Co-Sponsored

Notes: The data comes from French Lower House during the period 2002-2017. There are 10 bins on each side of the cutoff.
### Panel A

**Dep Variable: N Women-Related Amendments Co-Sponsored**

<table>
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<tr>
<th>Specification</th>
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<th>(2) Fixed Effects</th>
<th>(3) Regression Discontinuity Polynomial</th>
<th>(4) LLR</th>
<th>(5) LLR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woman (1=Yes)</td>
<td>5.25*** (0.75)</td>
<td>6.81*** (1.05)</td>
<td>7.96*** (1.56)</td>
<td>5.53*** (2.10)</td>
<td>5.62** (2.45)</td>
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</table>

### Panel B

**Dep Variable: Share Women-Related Amendments Co-Sponsored**

<table>
<thead>
<tr>
<th>Specification</th>
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<th>(2) Fixed Effects</th>
<th>(3) Regression Discontinuity Polynomial</th>
<th>(4) LLR</th>
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</table>

*Notes:* * p < 0.1, ** p < 0.05, *** p < 0.01. The data comes from the French Lower House during the period 2002-2017.
Internal Validity Test: No Evidence of Manipulation

Internal Validity Test: Continuity Assumption

- 4 sets of confounders

1. **Preferences for the gender** of politicians (female vote share)

2. **Demographic** characteristics (share of women working and total share of women in the population)

3. **Election** characteristics (N Registered voters, Abstention rate, invalid vote rate)

4. Characteristics of the **pool of candidates** (Political inclination and share of women among the candidates)
Testing the Continuity Assumption

Notes: The data comes from the French Lower House during the period 2002-2017.
Placebo Test - Random Sample of Amendments

Notes: The data comes from the French Lower House during the period 2002-2017. The histograms represent the T-statistic associated to the coefficient $Woman$ in a mixed-gender close race elections using the CCT bandwidth to compute the bandwidth. The outcome is respectively the share of co-sponsored amendments (a) and a dummy equals to 1 if the legislator has initiated at least one amendment related to the random sample of amendment drawn. There are 500 samples constituted of 4,421 randomly drawn amendments.
### Dep. Var.: At Least one Gender-Related Amendment Initiated (1=Yes)

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<th>(2) Fixed Effects</th>
<th>(3) Cross-Section</th>
<th>(4) Fixed Effects</th>
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</thead>
<tbody>
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<td>0.26 (0.24)</td>
<td>0.25*** (0.05)</td>
<td>0.28*** (0.08)</td>
<td>0.14*** (0.04)</td>
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<td>-0.00 (0.00)</td>
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<td>Woman*Left</td>
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<td>-0.13** (0.07)</td>
<td>-0.13 (0.10)</td>
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<td>Woman*Incumbent</td>
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<td>-0.00** (0.00)</td>
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<td>0.05* (0.03)</td>
<td>0.04 (0.05)</td>
<td>0.02 (0.02)</td>
<td>0.02 (0.04)</td>
</tr>
<tr>
<td>Incumbent (1=Yes)</td>
<td>-0.01 (0.02)</td>
<td>-0.00 (0.03)</td>
<td>-0.01 (0.02)</td>
<td>-0.01 (0.03)</td>
<td>-0.03 (0.02)</td>
<td>-0.03 (0.03)</td>
</tr>
<tr>
<td>Observations</td>
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<td>1663</td>
<td>1663</td>
<td>1663</td>
<td>1663</td>
<td>1663</td>
</tr>
<tr>
<td>Constituencies</td>
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<td>597</td>
<td>597</td>
<td>597</td>
<td>597</td>
<td>597</td>
</tr>
</tbody>
</table>

Notes: * p < 0.1, ** p < 0.05, *** p < 0.01. The data comes from the French Lower House during the period 2002-2017. Standard errors clustered at the constituency level are given in parentheses. The "Control Mean" line designates the outcome mean for the sample of male legislators. The "Scaled Effect" line designates the impact of female legislators scaled to the mean of male legislators (Treatment Effect/Control Mean).
### Dictionary-Based Methods: Examples

**Details on Topic Classification**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Top 10 Keywords</th>
<th>5 Most Frequent Bigrams</th>
<th>5 Most Frequent Trigrams</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>health, care, doctor, diseas, patient, sanitar, medical, medica, handicap, medico (130)</td>
<td>health instit, public health, social securit, professional health, insuranc diseas</td>
<td>financ social securit, health private instit, person situat handicap, public servic hospital, care follow readapt stay foreign right, stay residence foreign, foreign right asylum, temporary residence permit, country origin safe civil right statute, local civil right, day defense citizenship, armed force, action day defense</td>
</tr>
<tr>
<td>Migration</td>
<td>asylum, immigr, border, OFPRA, refugee, stateless, migrant, naturalize, migr, migrator</td>
<td>asylum seeker, right asylum, ask asylum, waiting area, residence permit</td>
<td></td>
</tr>
<tr>
<td>Military</td>
<td>militar, war, army, combat, weapon, soldier, armament, ONAC</td>
<td>veteran, armed force, penal constraint, civil right, civil statute</td>
<td></td>
</tr>
</tbody>
</table>

*Notes: the data comes from all the amendments produced in the Lower House during the period 2002-2017.*
Notes: The data comes from French Lower House during the period 2002-2017. The outcome is a dummy that equals 1 if the legislator initiates at least one gender-related amendment. Each dot represents the coefficient associated to the variable *Woman* divided by the average of male legislators (scaled effect). Confidence intervals are represented at the 95% level.
Women are elected in more gender-friendly constituencies

(i) Female Labor Force Participation

(j) Attitudes

Notes: The data comes from French Lower House during the period 2002-2017. There are 10 bins on each side of the cutoff.
Validity of the Classification: Predictive

- Positive correlation between the attitudes of constituents and the share of gender-related amendments the parliamentarians produces.

Notes: The data comes from French Lower House during the period 2002-2017. There are 10 bins on each side of the cutoff.

- Hold for both male and female legislators and across years.
Descriptive Statistics on Topics Prevalence

The data comes from the French Lower House during the 2002-2017 period. Each bar corresponds to a topic and represents the share of amendments associated to this topic. An amendment can be associated to several topics.