Party incumbency advantage and female exposure effect in French municipal elections

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Outline

Research questions

Party incumbency advantage:

- What is the causal effect of being the incumbent party on vote shares and the probability of reelection in recent French municipal elections?

Female exposure effect:

- Does the election of a female mayor increase the probability that the following mayor will be female? Does it increase the vote share of the top female candidate in the following election?

Motivation

Party incumbency advantage:

- Incumbency advantage could mean a lack of electoral competition (Abramowitz, Alexander and Gunning, 2006)
- Evidence of a party incumbency advantage in the US (local and congressional elections), the UK (parliamentary elections), and France (legislative elections)

Female exposure effect:

- Gender of policy-makers have an impact on outcomes (Chattopadhyay and Duflo, 2004; Brollo and Troiano, 2016; Baskaran and Hessami, 2019)
- Only 16% of female mayors elected in 2014, 20% in 2020

Data

- French municipal elections in 2001, 2008 and 2014
- Towns of over 3500 inhabitants in 2008
- Party incumbency advantage: Link elections based on "political nuance" $\Rightarrow$ Two sets of results (2001-2008 and 2008-2014)
- Female exposure effect: Link elections based on gender of lead candidate (available only for 2008 and 2014)
- Additional control variables (town characteristics in 2007) from Insee

Empirical strategy: Regression discontinuity (RD) design

RD equation

$$Y_{it} = f(V_{i,t-1}) + \gamma D_{it} + \epsilon_{it}$$

- Y_{it}: Vote share for the Left (top female candidate) in t
- V_{it}: Left (female) margin of victory in $t-1$: Difference in the vote share of the Left (top female candidate) and the vote share of the Right (top male candidate)
- D_{it}: Dummy variable equal to one if the incumbent mayor belongs to the Left (is a woman), and zero otherwise

$V_{i,t-1}$ and D_{it} are related

$$D_{it} = \begin{cases} 1, & \text{if } V_{i,t-1} \geq 0 \\ 0, & \text{otherwise} \end{cases}$$

Party incumbency advantage: Results

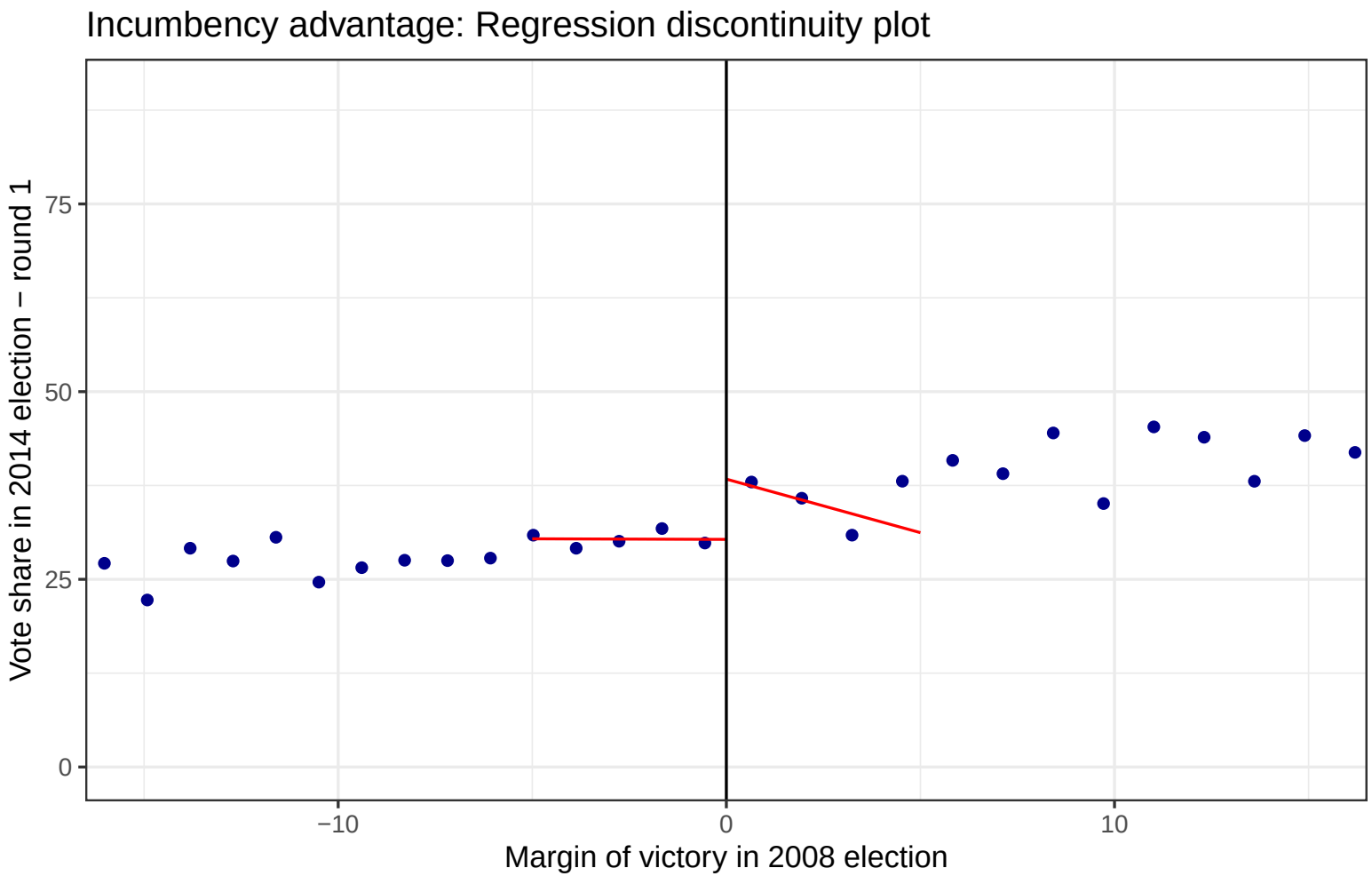

Figure 1: Incumbency advantage: RD plot

Party incumbency advantage: Results

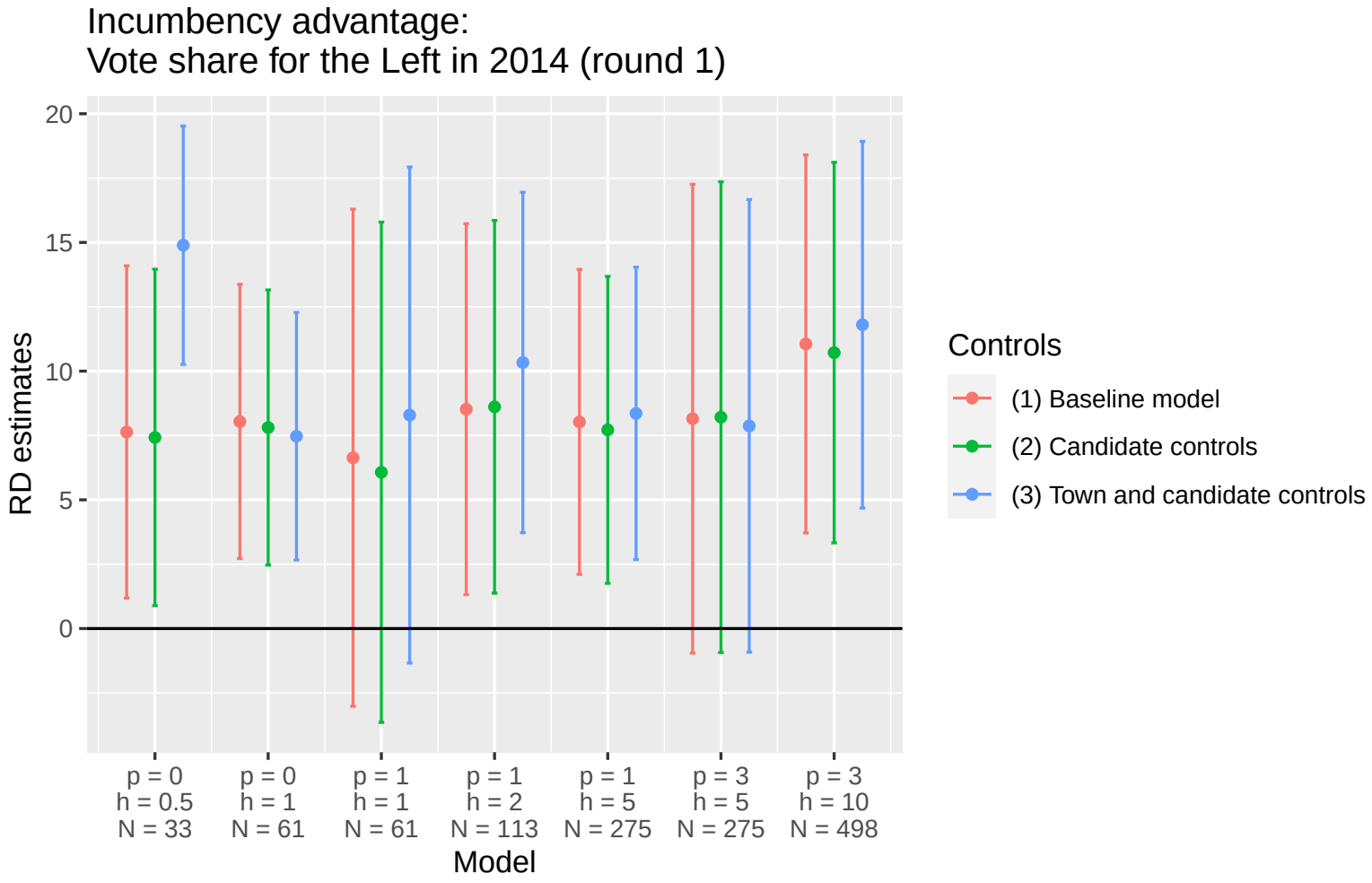

Figure 2: Incumbency advantage: Local polynomial regressions

Party incumbency advantage: Robustness checks

1. Alternative specifications
   - No significant party incumbency advantage for the Right and the 2008 election
   - No significant party incumbency advantage for probability of victory
2. Mechanism: Personal incumbency effect
   - Include a dummy variable for repeat candidates
   - Party incumbency advantage for the Left disappears
   - Repeat candidate: 7-8 percentage points increase in vote share (but not causal)

Female exposure effect: Results

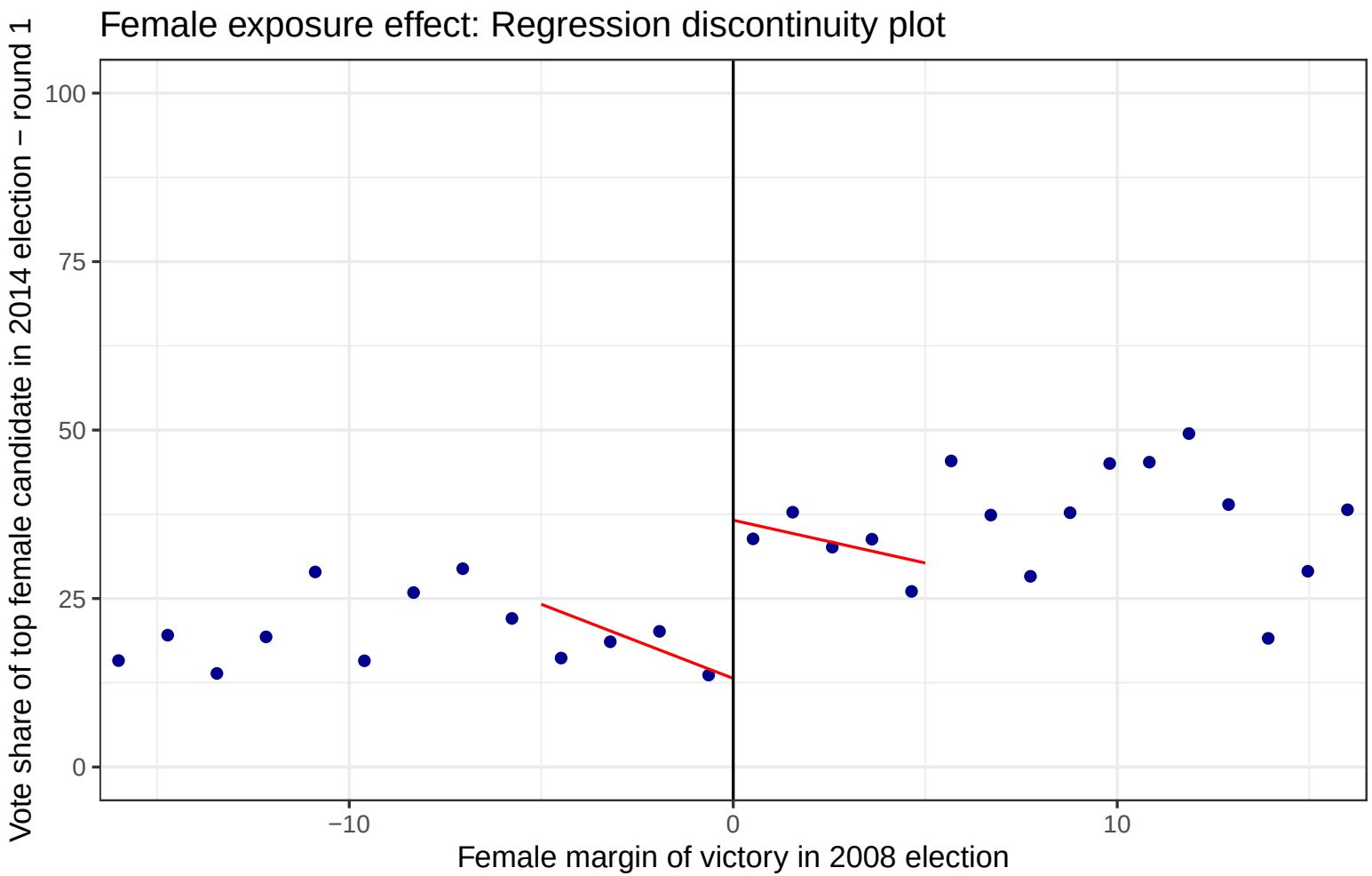

Figure 3: Female exposure effect: RD plot

Female exposure effect: Results

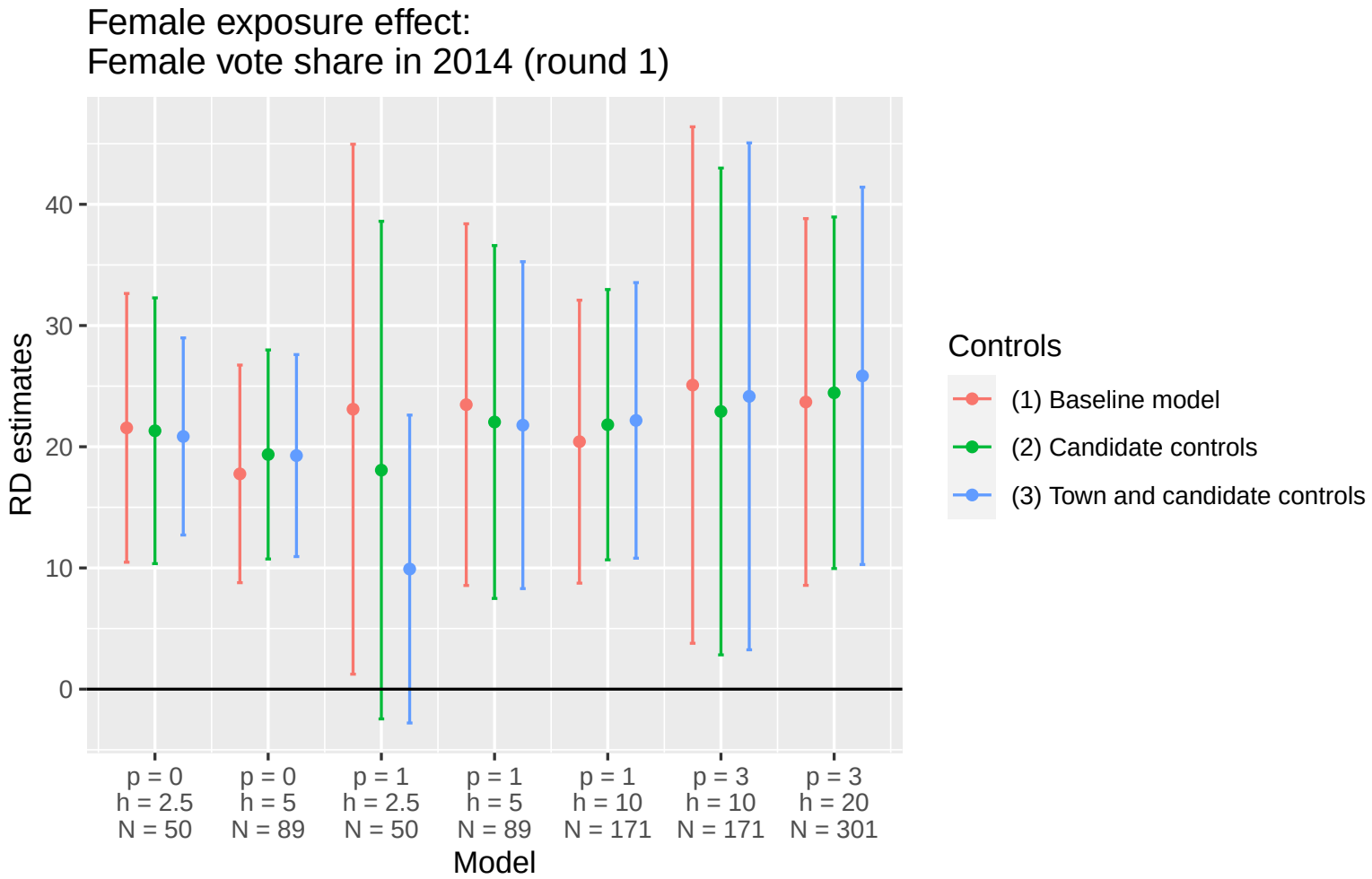

Figure 4: Female exposure effect: Local polynomial regressions

Female exposure effect: Robustness checks

1. Alternative specifications
   - No conclusive evidence of female exposure effect on probability of victory in first round
   - Positive effect for final-round results (for both probability of victory and vote shares)
   - Positive and significant effect on proportion of female candidates
2. Mechanism: Personal incumbency effect
   - Include a dummy variable for repeat candidates
   - Female exposure effect becomes insignificant (although point estimate $\geq$ 14 percentage points)
   - Repeat candidate: 31 percentage points increase in vote share (but not causal)

Conclusion

1. Party incumbency advantage
   - Party incumbency advantage in first-round vote share for the Left in 2014 (about 8 percentage points)
   - No clear evidence of an effect for the Right, the 2008 election, or probability of victory
2. Female exposure effect
   - Female exposure effect of 22 percentage points in first-round vote shares, but no significant effect on probability of victory
   - Positive effect for both vote shares and probability of victory in final-round results
3. Mechanism: Personal incumbency advantage
   - Controlling for repeat candidates
   - Party incumbency advantage disappears
   - Female exposure effect becomes insignificant, but still economically significant ($\geq$ 14 percentage points)

References I

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Appendix A: Tables

Incumbency advantage: Literature review

Table 1: Incumbency advantage: Summary of the literature

Study	Context	Findings
Lee (2008)	US House of Representative elections, 1946-1998	Vote share: +8 percentage points
Eggers and Spirling (2017)	British parliamentary elections, 1950-2010	Vote share: +2 percentage points (Conservative vs Labour), up to +7 percentage points (Conservative vs Liberal)
Ferlenga and Galasso (2019)	French legislative elections, 1958-2012	First-round vote share: +5 percentage points. Probability of winning: No effect
Trounstine (2011)	US local elections, 1915-1985	Vote share: +22 percentage points
Klasnja and Titiunik (2017)	Brazilian mayoral elections, 1996-2012	Probability of winning: -15 percentage points

Female exposure effect: Literature review

Table 2: Female exposure effect: Summary of the literature

Study	Context	Findings
Beaman et al. (2009)	Indian village councils, 2008	Positive female exposure effect
Baskaran and Hessami (2018)	German local councils, 2001-2016	Positive female exposure effect
Bhalotra, Clots-Figueras and Iyer (2017)	Indian state legislative assemblies, 1980-2007	Decrease or no effect in entry of new female candidates
Ferreira and Gyourko (2014)	US mayoral elections, 1950-2005	Female mayors are more likely to be reelected, but no spillover effects to other women
Brollo and Troiano (2016)	Brazilian mayoral elections, 2001-2005	Female mayors are less likely to be reelected
Lippmann (2019)	French municipal elections (in small towns), 2014	Female candidates less likely to be elected after a female incumbent (who cannot run again)

Incumbency advantage: Mechanism

Table 3: Incumbency advantage - Mechanism: Personal incumbency advantage (vote share)

	(1)	(2)	(3)	(4)
Incumbent party	5.74*	1.02	−0.08	0.12
	(2.96)	(3.39)	(3.37)	(3.47)
Margin of victory (MOV)	0.47	0.19	0.04	−0.11
	(0.70)	(0.68)	(0.70)	(0.70)
Repeat candidate		7.13***	7.57***	7.75***
		(2.04)	(2.03)	(2.00)
Victory in 2001			0.01	−0.43
			(2.20)	(2.21)
Vote share in 2001			0.16*	0.18**
			(0.09)	(0.08)
Incumbent party × MOV	−0.95	−0.53	−0.23	−0.21
	(1.04)	(0.99)	(1.05)	(1.07)
Incumbent party × Repeat candidate		4.98	5.59*	6.12*
		(3.18)	(3.11)	(3.27)
Constant	31.12***	28.14***	21.29***	22.85
	(2.02)	(2.17)	(4.21)	(31.56)
Town controls	No	No	No	Yes
Bandwidth	5.00	5.00	5.00	5.00
Observations	275	275	275	275
R^2	0.04	0.17	0.20	0.26

Female exposure effect: Mechanism

Table 4: Female exposure effect - Mechanism: Personal incumbency advantage (vote share)

	(1)	(2)	(3)	(4)
Female incumbent	20.58***	18.14**	14.09	15.28
	(7.92)	(8.79)	(9.81)	(11.21)
Margin of victory (MOV)	−0.41	−0.89	−0.38	−0.59
	(2.05)	(1.51)	(1.71)	(2.04)
Repeat candidate		31.74***	31.12***	30.75***
		(3.37)	(3.61)	(4.83)
Female incumbent × MOV	−1.01	0.18	0.13	−0.09
	(2.79)	(2.41)	(2.53)	(3.15)
Female incumbent × Repeat candidate		−11.02	−10.11	−11.13
		(6.80)	(7.09)	(8.66)
Constant	16.28***	4.97	3.55	−5.73
	(5.98)	(4.76)	(9.09)	(84.15)
Party controls	No	No	Yes	Yes
Town controls	No	No	No	Yes
Bandwidth	5.00	5.00	5.00	5.00
Observations	89	89	89	89
R^2	0.15	0.49	0.51	0.54

Appendix B: Figures

Incumbency advantage: McCrary density plot

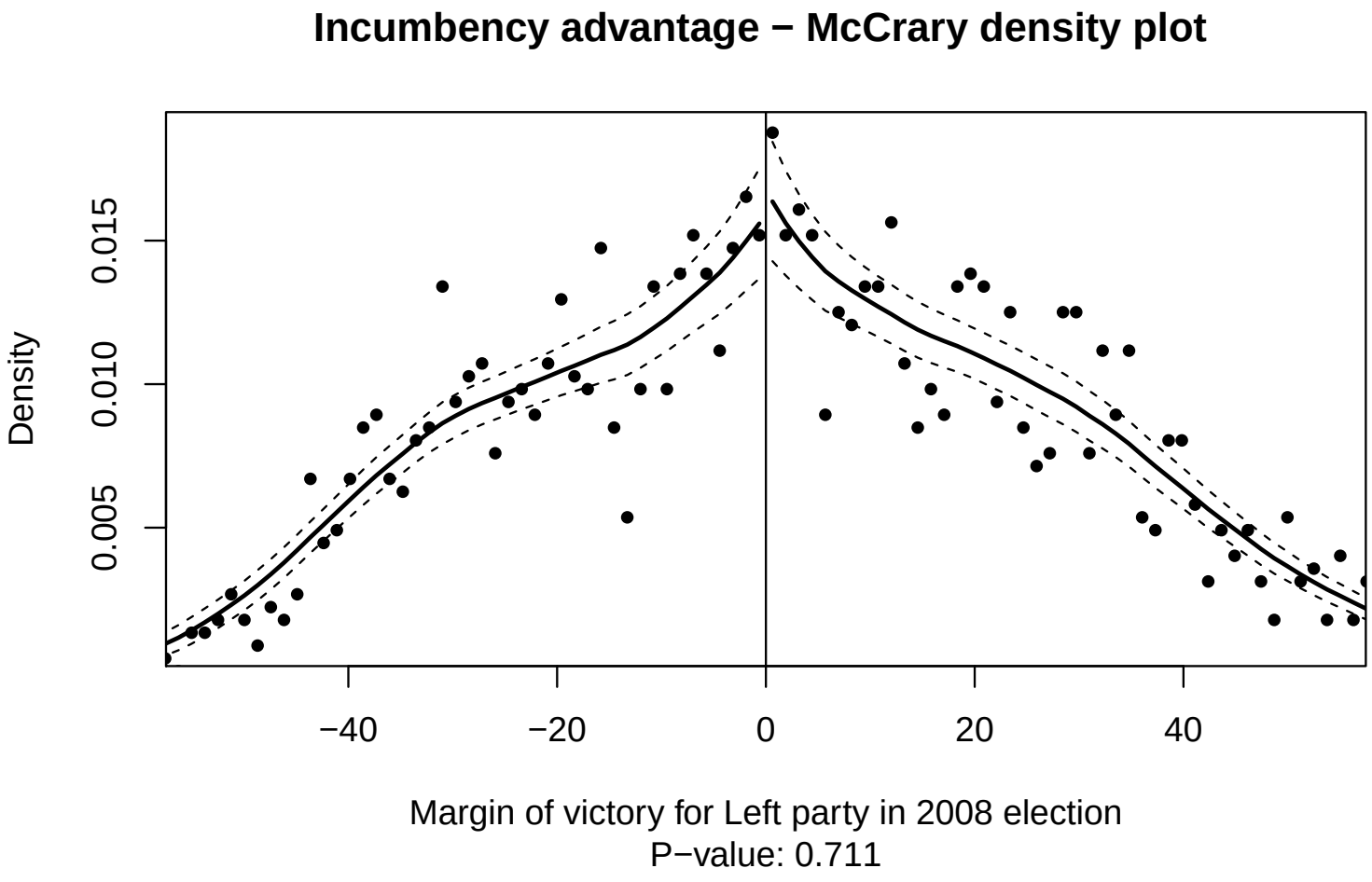

Figure 5: Incumbency advantage: McCrary density plot

Female exposure effect: McCrary density plot

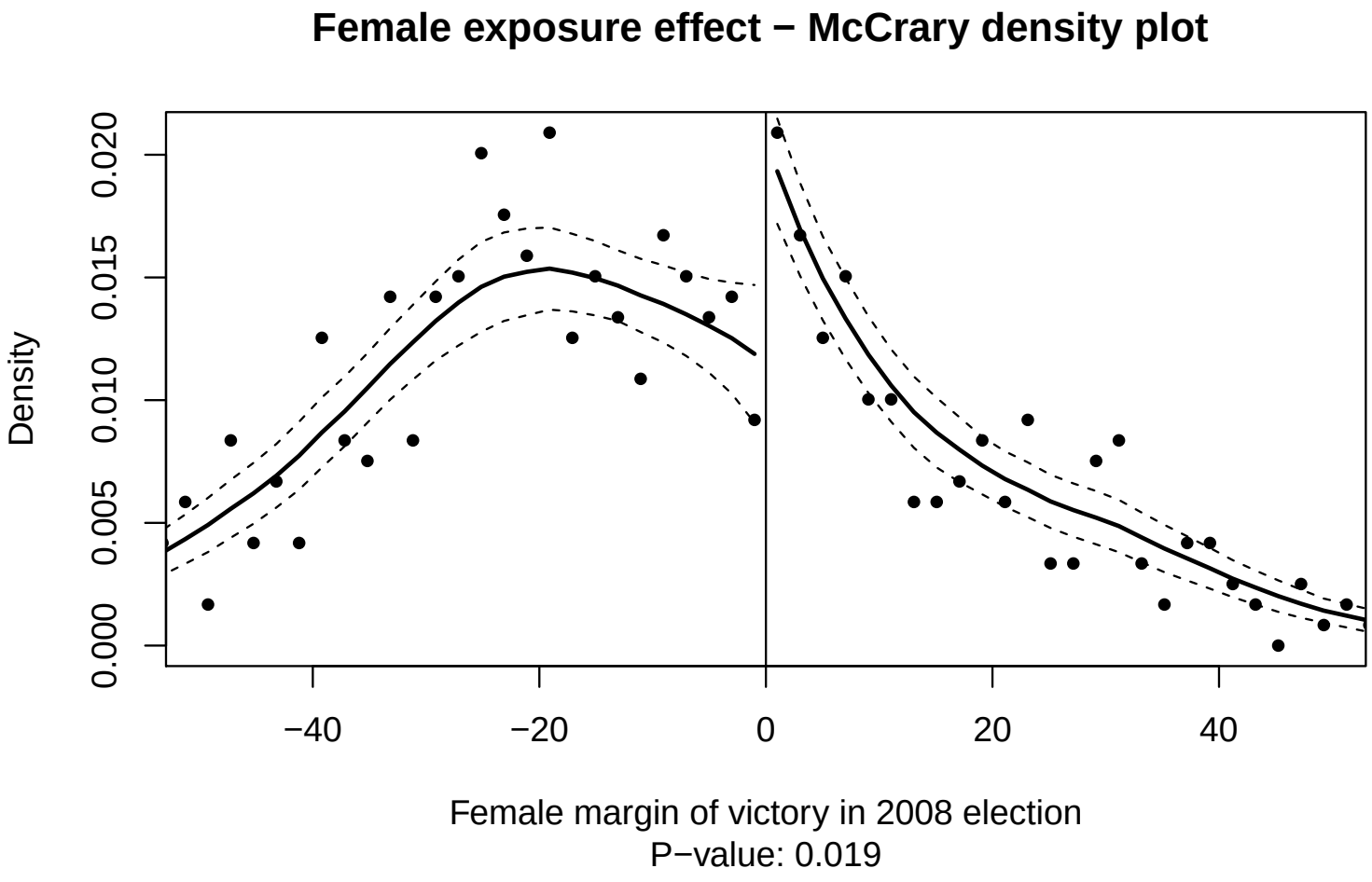

Figure 6: Female exposure effect: McCrary density plot

Female exposure effect: McCrary density plot (donut)

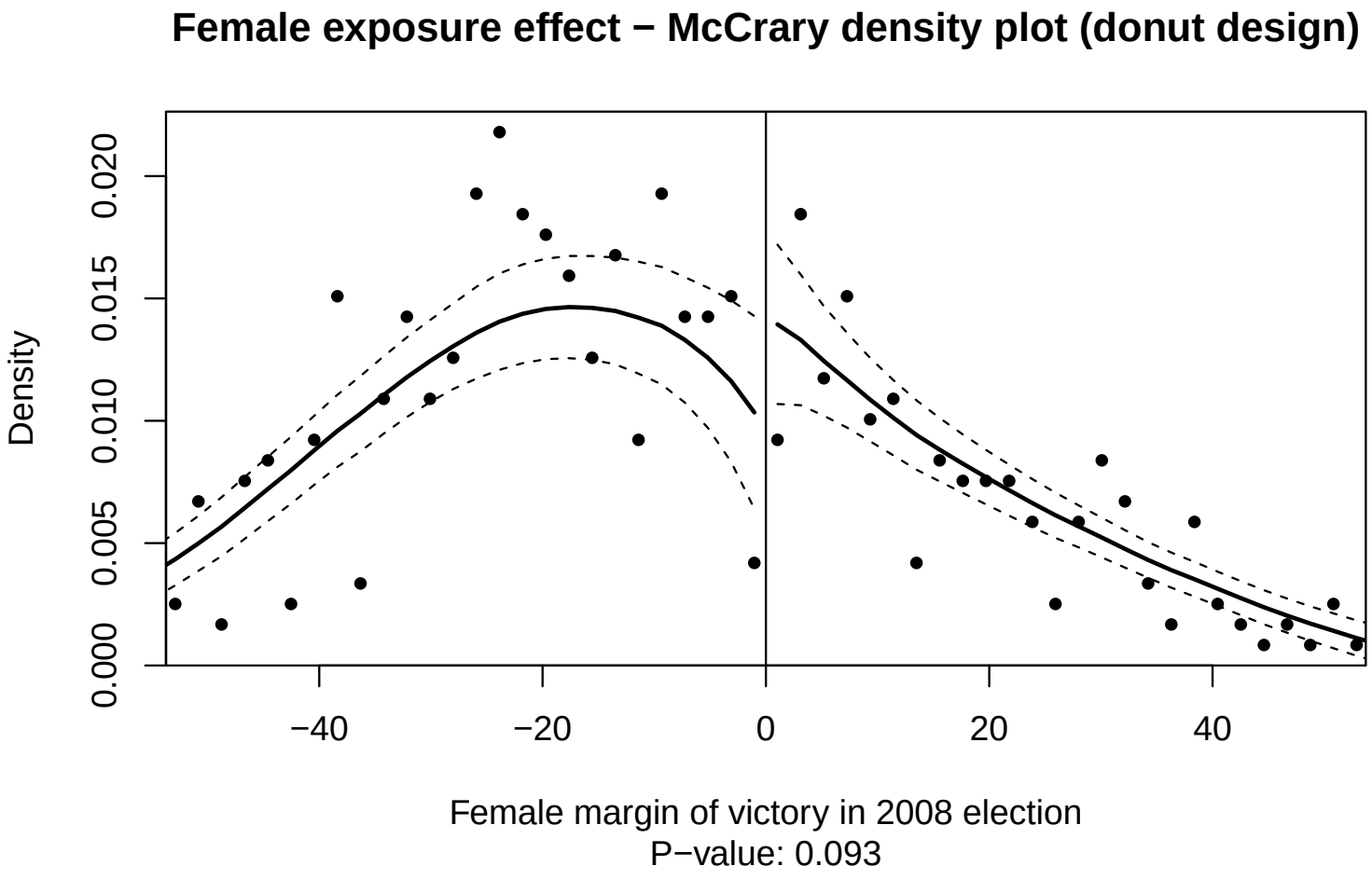

Figure 7: Female exposure effect: McCrary density plot (donut)

Appendix C: Mathematical appendix

Nadaraya-Watson estimator

- General nonparametric estimator:

$$\hat{m}_h(x) = \sum_{i=1}^{n} w_{ni}(x) y_i$$

- Nadaraya-Watson estimator: $w_{ni} = \frac{K(\frac{x_i - x}{h})}{\sum_{j=1}^{n} K(\frac{x_j - x}{h})}$
- Nadaraya-Watson minimizes

$$\sum_{i=1}^{n} [y_i - b_0(x)]^2 K\left(\frac{x_i - x}{h}\right)$$

- K is a kernel function (triangular, uniform, etc.)

Local polynomial regressions

- Local linear regression minimizes

$$\sum_{i=1}^{n}[y_i - b_0(x) - b_1(x)(x_i - x)]^2 K\left(\frac{x_i - x}{h}\right)$$

- Local polynomial regression minimizes

$$\sum_{i=1}^{n}[y_i - b_0(x) - b_1(x)(x_i - x) - \ldots - b_p(x_i - x)^p]^2 K\left(\frac{x_i - x}{h}\right)$$

- K is a kernel function (triangular, uniform, etc.)

Optimal bandwidth selection

- Selection procedure by Calonico, Cattaneo and Titiunik (2014)
- Trade-off between variance and bias
- Bandwidth choice to minimize mean square error (MSE)
- Allows for the inclusion of covariates

Appendix D: Additional information

Incumbency advantage: Validity tests

1. Difference in pre-treatment characteristics: Use $h = 5\%$
2. McCrary (2008) density plot: No sign of manipulation at the threshold (see fig 5)
3. Probability of winning (close) elections by incumbency status: Use $h = 5\%$
4. Placebo regressions
   - Estimate the "effect" of a victory in 2014 on 2008 vote shares
   - Insignificant coefficient $\Rightarrow$ RD approach not invalid

Female exposure effect: Validity tests

1. Difference in pre-treatment characteristics: Use $h \leq 20\%$
2. McCrary (2008) density plot: Bunching at the threshold, but evidence of chance effect (see fig 6)
3. Probability of winning (close) elections by incumbency status: Use $h \leq 10\%$
4. Placebo regressions
   - Estimate the "effect" of a female victory in 2014 on 2008 vote shares
   - Insignificant coefficient $\Rightarrow$ RD approach not invalid

Related literature: Abramowitz et al. (2006)

- Declining competition in US House of Representatives (based on incumbent reelection rates and percentage of close race)
- Substantial increase in the number of house districts that are safe for one party (but not caused by redistricting)
- Even in the remaining marginal districts, most challengers lack the financial resources needed to wag competitive campaigns

Why is there an effect for the Left and not the Right?

- The 2008 election was a victory for the Left, but the 2014 election was a defeat for them
- Incumbency advantage only in loss domain?

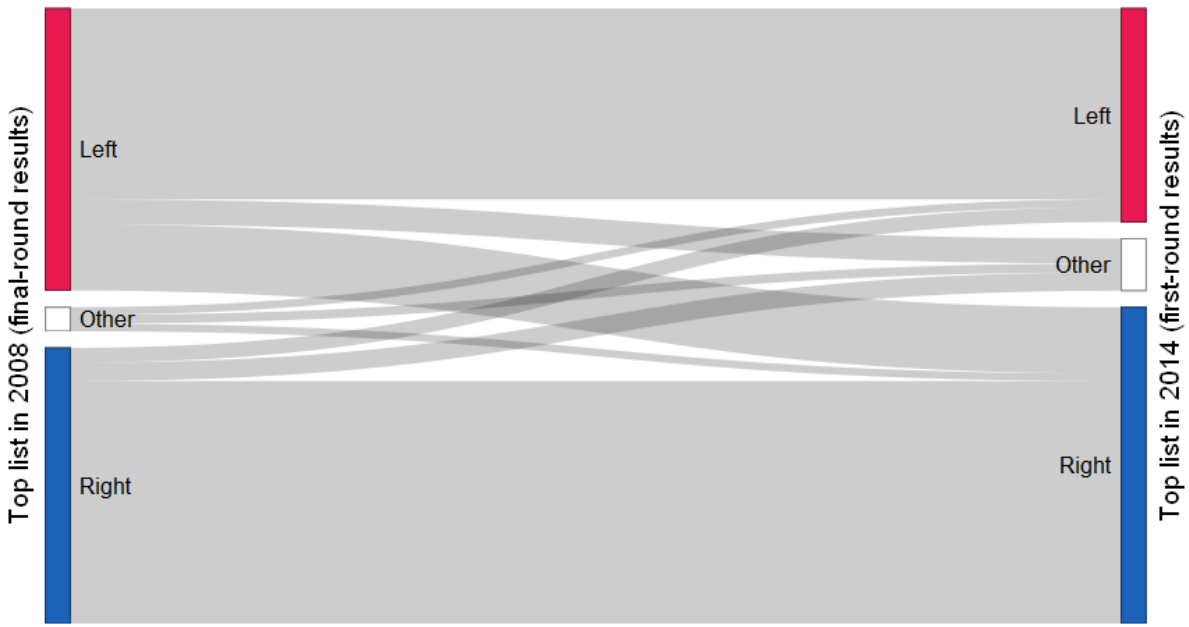

Figure 8: Top parties in large municipalities