Online Appendix
Child Penalties in Politics*

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Abstract

Women tend to experience a substantial decline in their labour income after their first child is born, while men do not. Do such 'child penalties' also exist in the political arena? Using comprehensive administrative data from Norway, we find that women are less likely than men to secure elected office after their first child is born. The effects manifest already from the nomination stage, where mothers receive less favourable rankings on party lists relative to comparable fathers. This paper broadens our understanding of a fundamental social issue in political representation and demonstrates how motherhood affects even positively selected women.

Keywords: gender gap, child penalties, political selection

JEL Classification: D63, D72, J13, J16

*This online appendix provides supplementary figures and tables for the article published in the *Economic Journal*.

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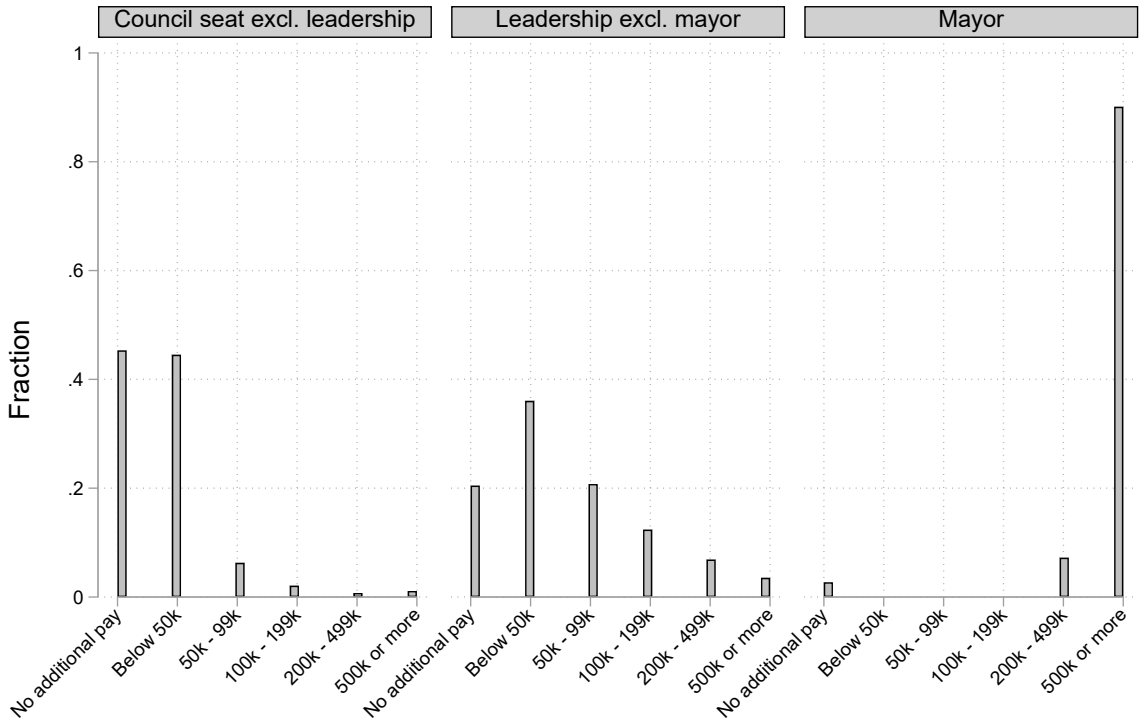
Appendix A: Supplementary figures and tables

Figure A.1: Remuneration for local political roles

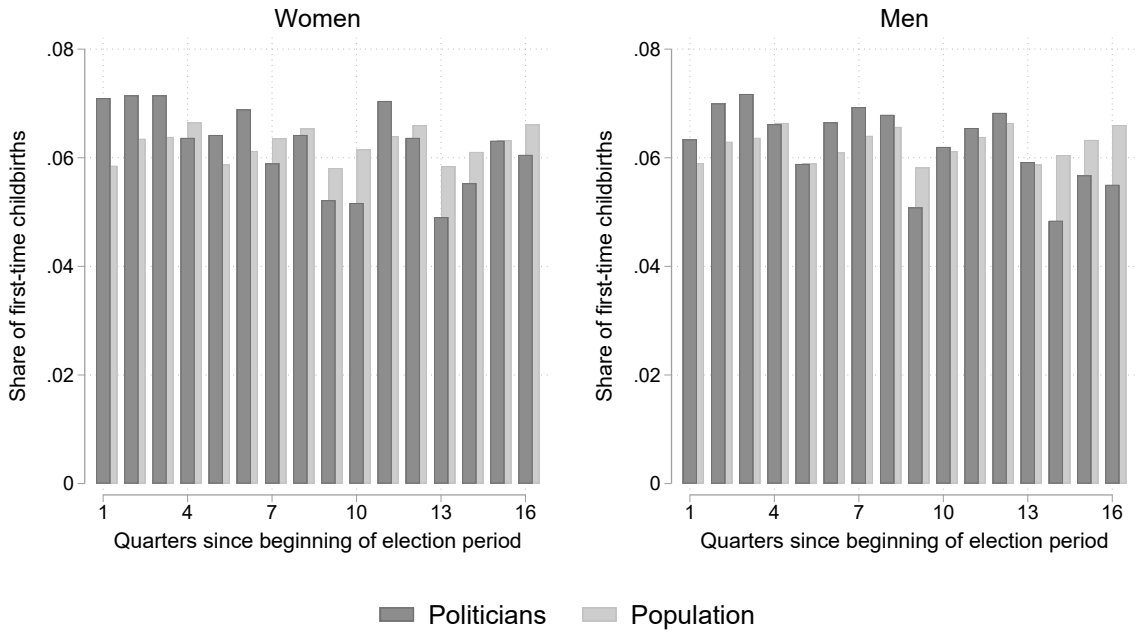


Note: The figure plots survey responses collected from local political office holders in 2011 (N=2,234). The survey question asked (translated from Norwegian): 'What remuneration do you receive as local politician from the municipal government for performing political duties (besides standard meeting compensation)?' Source: Lokalpolitiker- og rådmannsundersøkelsen 2010/2011 (https://www.ssb.no/valg/artikler-og-publikasjoner/lokalpolitiker-og-raadmannsundersokelsen-2010-2011).

Figure A.2: Number of elected candidates by gender and age

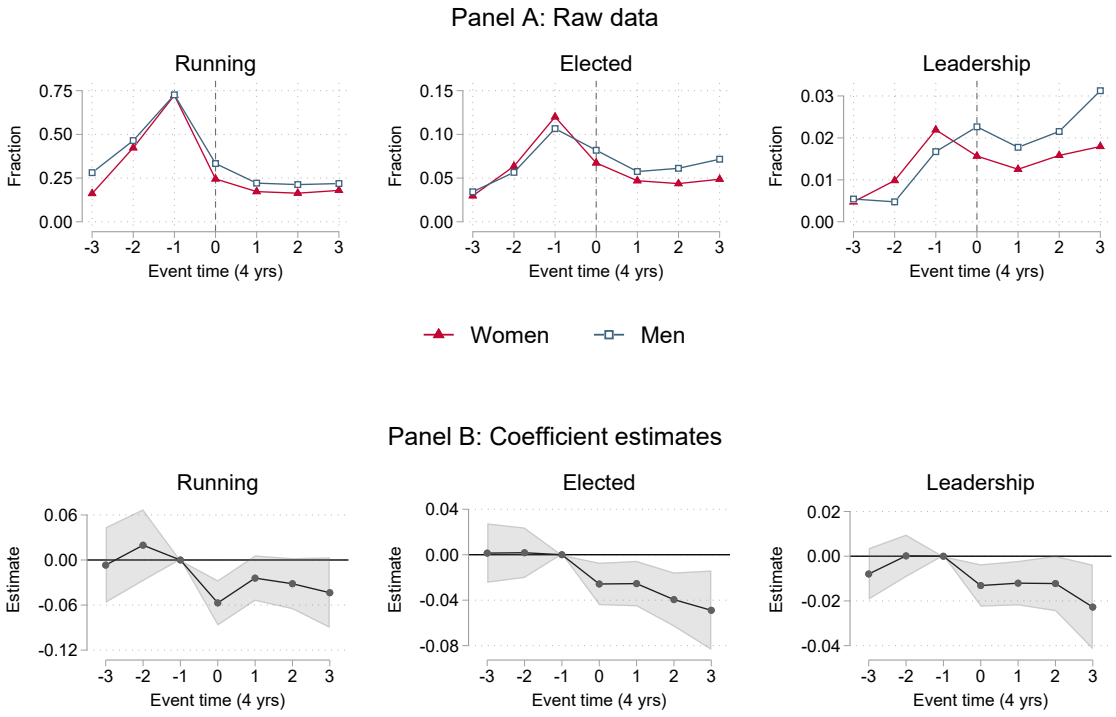
Note: The figure shows the number of elected individuals by gender and age, separately for each election year 2003–2019. In each election year, about 10,000 candidates are elected to the local council. The number is slightly lower in the 2019 election because of the municipal merger reform that reduced the number of municipalities from 428 to 356.

Figure A.3: Distribution of first-time childbirths, by gender



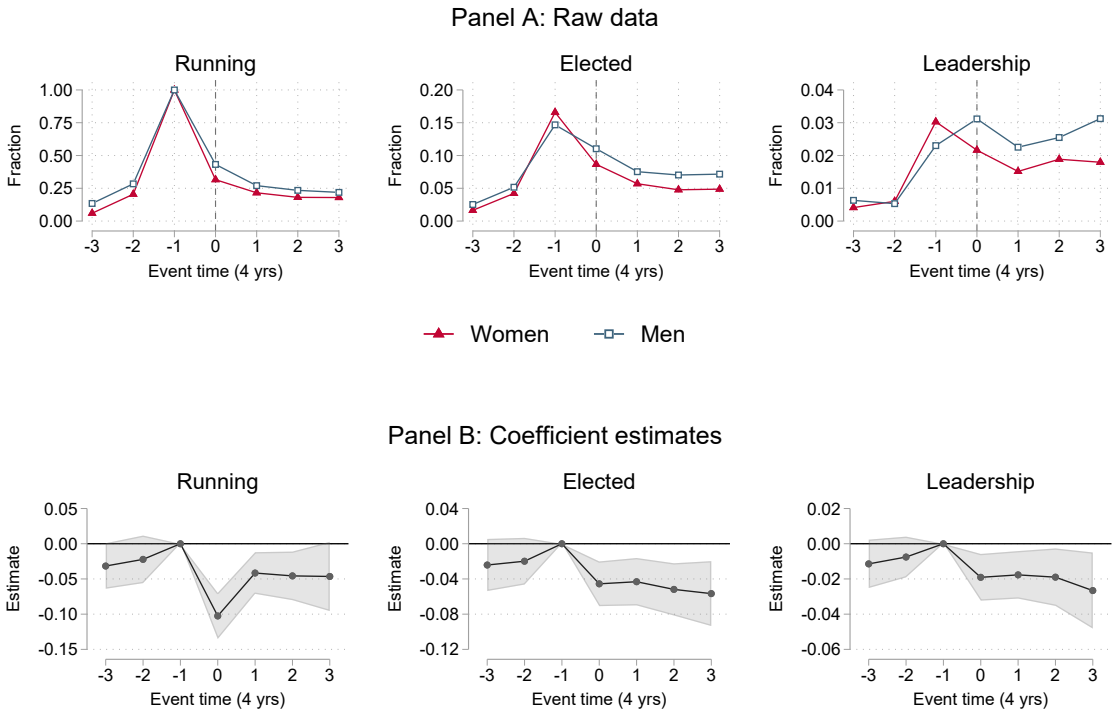
Note: The figure shows the distribution of first-time childbirths for male and female candidates in our main sample over the 16-quarter period starting with October-December in each election year to July-September four years later (observations are stacked across periods). The distributions for population first-time parents during the same periods are shown in the background. Each bar indicates the fraction of candidates (among each gender) who received their first child during that quarter.

Figure A.4: The child penalty in local political outcomes, candidate fixed effects



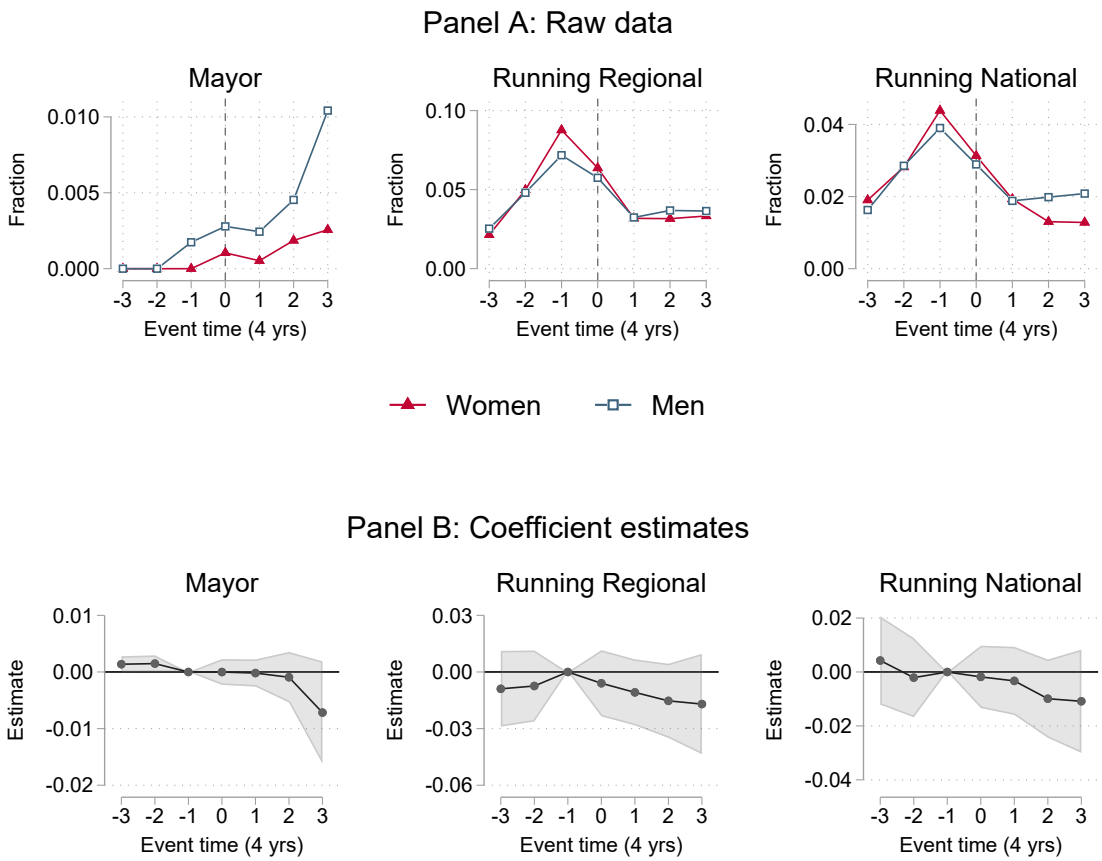
Note: Panel A plots the fraction of men (blue squares) and women (red circles) for whom the outcome variable is equal to one at each election period t. Panel B contains estimates of the parameters of interest, β_j, in Equation (1) together with 95% confidence intervals. These specifications also include candidate fixed effects. Standard errors are clustered at the individual level. The sample consists of all politicians who ran for office prior to election period $t = 0$ (23,935 observations from 4,787 individuals).

Figure A.5: The child penalty in local political outcomes, conditional on running at $t = -1$



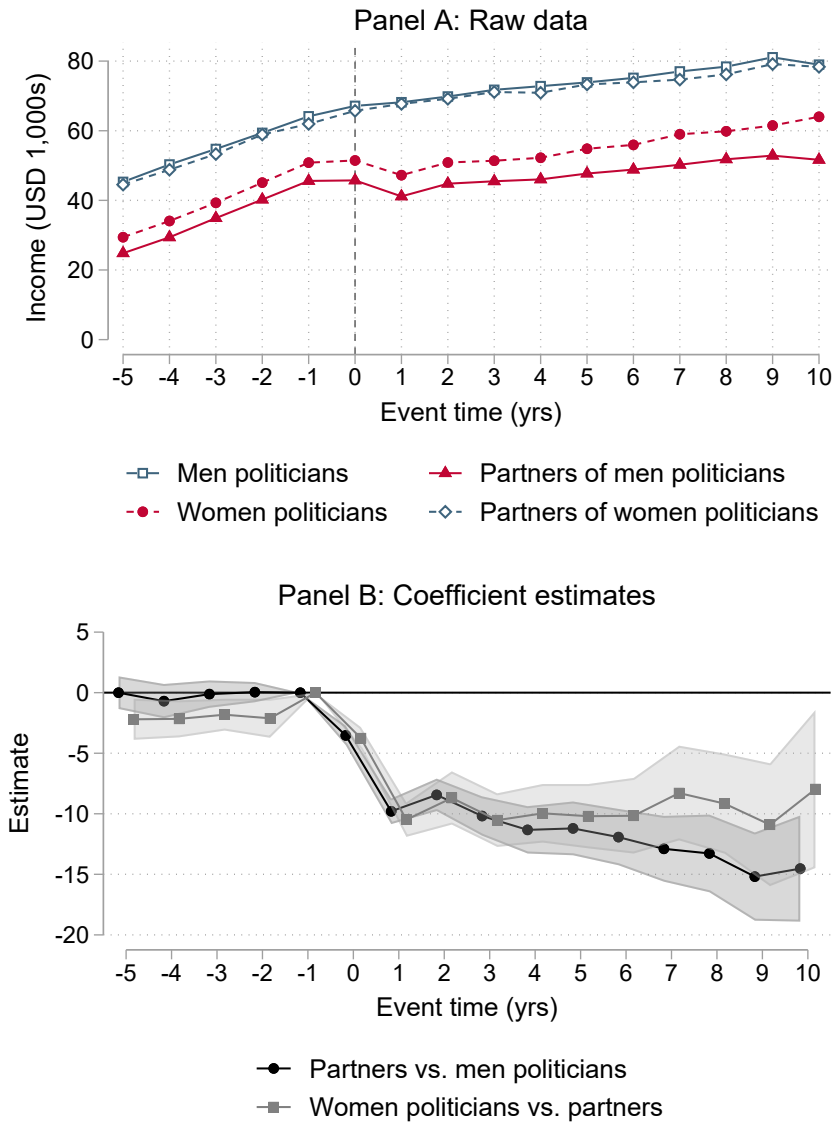
Note: Panel A plots the fraction of men (blue squares) and women (red circles) for whom the outcome variable is equal to one at each election period t. Panel B contains estimates of the parameters of interest, β_j, in Equation (1) together with 95% confidence intervals. Standard errors are clustered at the individual level. The sample consists of the subset of candidates in our main sample who ran for office at $t = -1$ (16,236 observations from 3,471 individuals).

Figure A.6: The child penalty in higher-level political outcomes



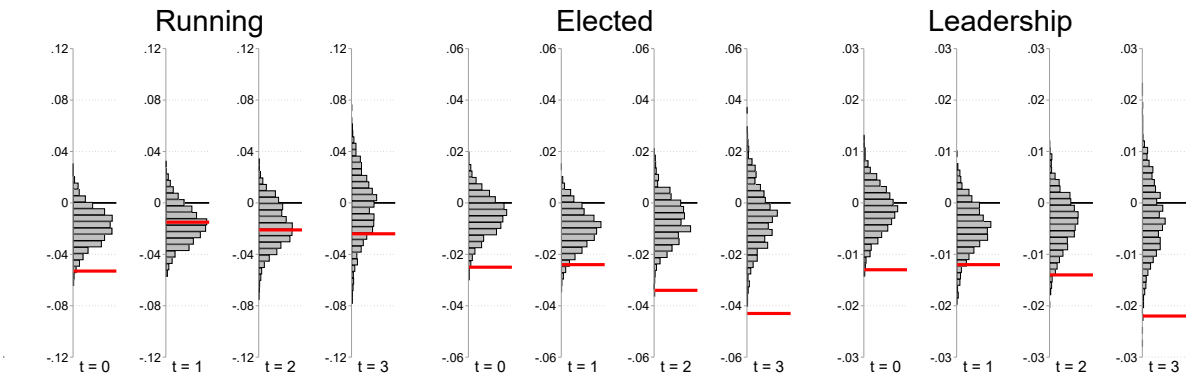
Note: Panel A plots the fraction of men (blue squares) and women (red circles) for whom the outcome variable is equal to one at each election period t. Panel B contains estimates of the parameters of interest, β_j, in Equation (1) together with 95% confidence intervals. Standard errors are clustered at the individual level. The sample consists of all politicians who ran for local *office prior to election period $t = 0$ (23,935 observations from 4,787 individuals).*

Figure A.7: The child penalty in income for politicians and their partners



Note: Results from our labour market analysis using all male politicians in our main sample versus their partners (solid lines), and all female politicians in our main sample versus their partners (dashed lines). Panel A plots the mean income in 1000s of constant (2015) USD for men (blue squares/diamonds) and women (red circles/triangles) at each event-year k. Panel B contains estimates of the parameters of interest, β_j, in Equation (1) together with 95% confidence intervals. The reference category is event period $k = -1$. The male politician-partner sample consists of $55,054$ observations from $2,458$ individuals while the female politician-partner sample consists of $34,428$ observations from $1,600$ individuals.

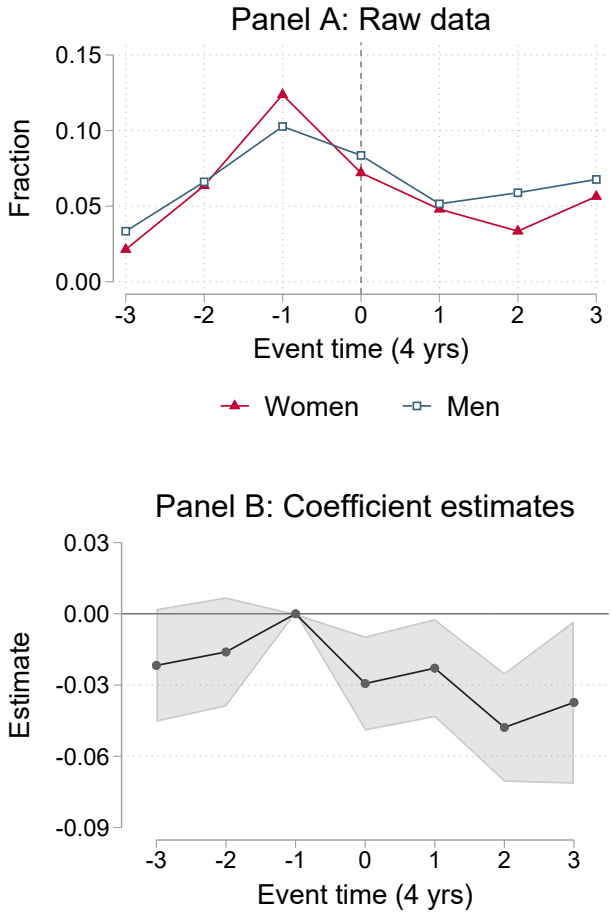
Figure A.8: Distributions of placebo estimates



Note: Results from our placebo analyses where childbirths are assigned randomly to politicians in the placebo sample using a uniform distribution of within-sample years. Each subplot shows the distribution of estimates of the parameters of interest, β_j, in Equation (1), at each election period from $t = 0$, after 1000 repeated iterations. The red lines show the actual estimates from Figure 1. Regressions are run on a pooled sample of, on average, 24,475 observations from 5,362 individuals (the number of observations vary slightly in each iteration depending on the random assignment of childbirths).

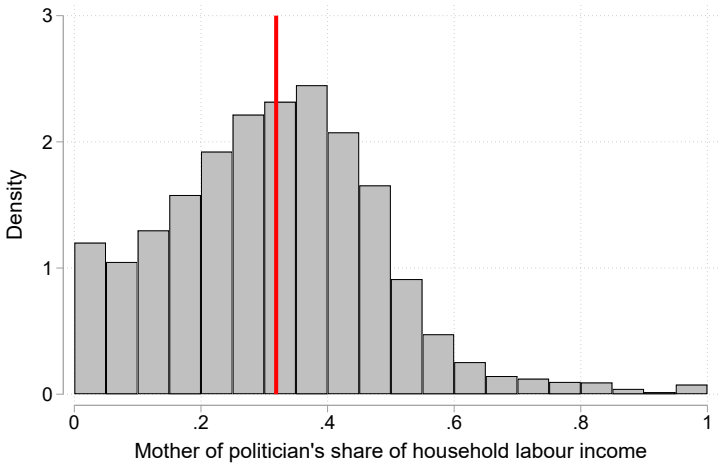
To construct the placebo sample, we only include candidates who are either (i) old enough for us to observe their complete fertility history, or (ii) whose background characteristics suggest they are most likely to remain childless *in the future. We follow Kleven* et al. *(2019b) and place all childless candidates who are 40 or older in 2021 in the placebo sample automatically. For younger cohorts, candidates are assigned to the placebo sample so that their zero-fertility distribution equals that of the older cohorts (where fertility is observed). Specifically, we use the universe of political candidates born between 1950 and 1981 to estimate $P_i = \boldsymbol{\lambda}'\mathbf{X_i}$, where P_i is a dummy variable indicating zero fertility for individual i in 2021, and X_i contains the following set of dummy variables: cohort-specific income quartile at age 25, maximum level of education obtained, municipality of birth, and the decades of birth of each individual's mother and father. We then use these estimates to predict the probability of zero lifetime fertility ($\hat{P}_i$) for childless politicians born after 1981, and keep those n_c candidates with the highest $\hat{P}_i$ such that $\frac{n_c}{N_c} = P_{1950-1981}$, where N_c is the total number of politicians in cohort c and $P_{1950-1981}$ is the average probability for zero lifetime fertility among politicians born between 1950 and 1981.*

Figure A.9: Closed-list hypothetical election outcomes



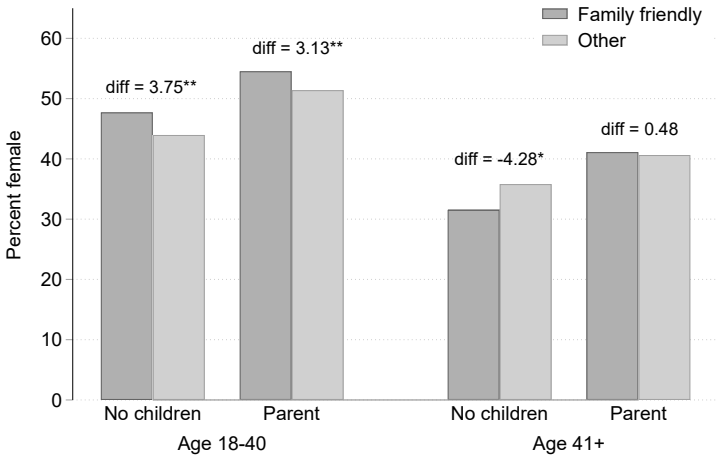
Panel A plots the fraction of men (blue squares) and women (red circles) who would have been elected in a closed-list counterfactual scenario (i.e. without taking personal votes into account) at each election period t. This outcome takes a value equal to one if the candidate's rank position on the ballot is higher than or equal to the number of seats awarded to the candidate's list. Panel B contains estimates of the parameters of interest, β_j, in Equation (1) together with 95% confidence intervals. Standard errors are clustered at the individual level. The sample consists of all politicians who ran for office prior to election period $t = 0$ (23,935 observations from 4,787 individuals).

Figure A.10: Distribution of politicians' parents' labour division index



Note: Histogram of the index I, which captures politicians' mothers' share of household income when each politician was 0-18 years old. Each bin is five percentage points wide. The red line denotes the median of the distribution.

Figure A.11: Share of women among running candidates, by parental status, age and municipality type



*Note: This figure shows the share of female candidates in the 2015 election by parental status, age and municipality type. Municipalities are classified as 'family friendly' if all local council meetings in 2018 were held during standard business hours. The labels above each pair of bars report the differences between bars, together with the degree of statistical significance. Standard errors are clustered at the municipality level. * denotes 10% statistical significance, ** 5% and *** 1%.*

Table A.1: Differences in political selection by level of government and gender

	Years of educ.					Income				
	Women		Men			Women		Men		
Level	Mean (1)	Diff. (2)	Mean (3)	Diff. (4)	DiD (5)	Mean (6)	Diff. (7)	Mean (8)	Diff. (9)	DiD (10)
National level										
Cabinet (N = 528)	16.3	3.3***	15.9	3.2***	0.1	113.4	77.6***	112.8	62.4***	15.2***
Parliament (N = 845)	15.4	2.4***	14.7	2.0***	0.4**	103.5	67.7***	104.5	54.2***	13.5***
Candidate (N = 18,316)	14.2	1.2***	13.8	1.1***	0.1***	50.4	14.6***	57.4	7.0***	7.5***
Regional level										
Council (N = 3,373)	14.4	1.4***	14.1	1.4***	-0.0	64.7	28.8***	75.5	25.2***	3.6***
Candidate (N = 33,423)	14.1	1.1***	13.6	0.9***	0.1***	45.3	9.5***	53.7	3.3***	6.1***
Local level										
Mayor (N = 2,060)	14.8	1.8***	13.9	1.2***	0.6***	80.7	44.8***	86.3	35.9***	8.9***
Executive board (N = 15,141)	14.4	1.4***	13.8	1.1***	0.4***	59.6	23.7***	74.0	23.6***	0.1
Council (N = 51,799)	14.2	1.2***	13.5	0.8***	0.4***	52.0	16.1***	65.7	15.3***	0.8***
Candidate (N = 292,590)	13.6	0.6***	13.1	0.4***	0.2***	40.0	4.2***	52.9	2.5***	1.6***
Population (N = 4,218,917)	13.0		12.7			35.9		50.4		

*Notes: Columns (1) and (3) show average years of education, for men and women, respectively, as in Table 1. Columns (6) and (8) show average yearly income in 1000's of constant (2015) USD, for men and women, respectively, as in Table 1. Columns (2) and (4) show differences in politicians' education relative to the population (reported in the bottom row), by gender. Corresponding differences for income are shown in columns (7) and (9). Columns (5) and (10) show differential effects between genders (DiD). Significance stars reflect conventional t-tests of equal effects. * denotes 10% statistical significance, ** 5% and *** 1%.*

Table A.2: Summary statistics by sample

Panel A: Politicians	Full sample		Women		Men	
	Mean	SD	Mean	SD	Mean	SD
Event-time $k = -1$						
Female (percent)	40.03	49.00				
Age	31.07	5.52	29.17	4.17	32.33	5.93
Income, constant (2015) USD 1000s	58.81	30.35	50.45	23.90	64.39	32.82
Years of education	14.59	2.78	15.33	2.52	14.10	2.84
Number of children (as of 2021)	1.91	0.73	1.89	0.68	1.93	0.76
N	4,787		1,916		2,871	

Panel B: Population	Full sample		Women		Men	
	Mean	SD	Mean	SD	Mean	SD
Event-time $k = -1$						
Female (percent)	49.75	50.00				
Age	28.98	5.50	27.78	4.99	30.16	5.72
Income, constant (2015) USD 1000s	49.11	32.50	41.57	25.28	56.57	36.84
Years of education	13.57	3.20	13.95	3.18	13.19	3.17
Number of children (as of 2021)	1.97	0.77	1.98	0.76	1.96	0.78
N	796,471		396,271		400,200	

Notes: Summary statistics for our main politicians sample (Panel A) and the population of Norwegian parents during our sample period (Panel B). Each parent is observed one year before the birth of their first child (event-time $k = -1$*).*

Table A.3: Baseline results, political outcomes

		Running		Elected		Leadership	
	n_t	(1)	(2)	(3)	(4)	(5)	(6)
Female $\times$ $t = -3$	1,947	-0.117***	-0.024	-0.018	-0.007	-0.006	-0.006
		(0.025)	(0.022)	(0.012)	(0.012)	(0.005)	(0.005)
Female $\times$ $t = -2$	3,629	-0.039	0.012	-0.006	0.000	-0.000	0.000
		(0.026)	(0.023)	(0.011)	(0.011)	(0.005)	(0.005)
Female $\times$ $t = -1$	4,787	ref.	ref.	ref.	ref.	ref.	ref.
Female $\times$ $t = 0$	4,787	-0.086***	-0.053***	-0.028***	-0.025***	-0.012**	-0.013***
		(0.016)	(0.015)	(0.009)	(0.010)	(0.005)	(0.005)
Female $\times$ $t = 1$	4,787	-0.046***	-0.015	-0.024**	-0.024**	-0.010**	-0.012**
		(0.016)	(0.015)	(0.010)	(0.010)	(0.005)	(0.005)
Female $\times$ $t = 2$	2,840	-0.047**	-0.021	-0.031***	-0.034***	-0.011*	-0.014**
		(0.019)	(0.019)	(0.012)	(0.012)	(0.006)	(0.007)
Female $\times$ $t = 3$	1,158	-0.037	-0.024	-0.036**	-0.043**	-0.019*	-0.022**
		(0.028)	(0.028)	(0.016)	(0.017)	(0.010)	(0.010)
Party FE		No	Yes	No	Yes	No	Yes
Age FE		No	Yes	No	Yes	No	Yes
Year FE		No	Yes	No	Yes	No	Yes
Observations		23,935	23,935	23,935	23,935	23,935	23,935
Clusters		4,787	4,787	4,787	4,787	4,787	4,787
R-squared		0.17	0.27	0.01	0.04	0.00	0.02

*Notes: Each column represents a separate regression of Equation (1), where the dependent variable is a dummy capturing the outcome indicated by the column headers. Level effects are not reported. The number of individuals (clusters) observed at each election period are reported in the second column. The reference category is event period $t = -1$. Standard errors are clustered at the individual level and reported in parentheses. * denotes 10% statistical significance, ** 5% and *** 1%.*

Table A.4: Baseline results by cohorts, political outcomes

	Running			Elected			Leadership		
	(1) 2007	(2) 2011	(3) 2015	(4) 2007	(5) 2011	(6) 2015	(7) 2007	(8) 2011	(9) 2015
Female × $t = -3$			-0.025			-0.003			-0.005
			(0.030)			(0.016)			(0.007)
Female × $t = -2$		-0.056	0.040		-0.007	0.001		-0.005	0.002
		(0.039)	(0.034)		(0.018)	(0.016)		(0.007)	(0.007)
Female × $t = -1$	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Female × $t = 0$	-0.002	-0.118***	-0.062***	-0.024	-0.033**	-0.026*	-0.009	-0.025***	-0.006
	(0.031)	(0.027)	(0.023)	(0.024)	(0.015)	(0.014)	(0.012)	(0.007)	(0.008)
Female × $t = 1$	-0.047*	-0.040	-0.006	-0.033	-0.026	-0.028*	-0.014	-0.017**	-0.007
	(0.028)	(0.028)	(0.024)	(0.025)	(0.017)	(0.015)	(0.013)	(0.007)	(0.008)
Female × $t = 2$	-0.036	-0.059**		-0.061**	-0.032*		-0.010	-0.017**	
	(0.027)	(0.027)		(0.025)	(0.017)		(0.014)	(0.008)	
Female × $t = 3$	-0.030			-0.062**			-0.025*		
	(0.026)			(0.025)			(0.014)		
Party FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,790	8,410	9,735	5,790	8,410	9,735	5,790	8,410	9,735
Clusters	1,158	1,682	1,947	1,158	1,682	1,947	1,158	1,682	1,947
R-squared	0.37	0.25	0.23	0.04	0.04	0.05	0.02	0.02	0.02

*Notes: Each column represents a separate regression of Equation (1) on individual cohorts, where the dependent variable is a dummy capturing the outcome indicated by the column group headers. Level effects are not reported. The reference category is event period $t = -1$. Standard errors are clustered at the individual level and reported in parentheses. * denotes 10% statistical significance, ** 5% and *** 1%.*

Table A.5: Relationship between parenthood and vote shares

	Women			Men		
	(1)	(2)	(3)	(4)	(5)	(6)
No children	ref.	ref.	ref.	ref.	ref.	ref.
Children	0.18**	0.17**	0.19***	0.60***	0.52***	0.42***
	(0.073)	(0.070)	(0.045)	(0.068)	(0.062)	(0.040)
Incumbent	No	Yes	Yes	No	Yes	Yes
Rank FE	No	No	Yes	No	No	Yes
Party bonus	No	No	Yes	No	No	Yes
Observations	94,431	94,431	94,431	129,233	129,233	129,233
Clusters	1,563	1,563	1,563	1,563	1,563	1,563
R-squared	0.39	0.46	0.77	0.37	0.48	0.77

*Notes: Each column represents a separate regression where the dependent variable is the share (in %) of personal votes received by each candidate-year. The sample consists of the universe of candidates who ran for office in the 2007-2019 Norwegian local elections. Incumbent is a dummy equal to one if the candidate also held a seat in the local council in the previous term (this implies that we lose observations from 2003). In addition to the reported effects, all specifications control nonparametrically for age, year-specific income quartile (calculated as an average over the four years up to and including the election year), education (nine levels), party affiliation, geography and time (municipality-year fixed effects). The reference category is candidates who are childless in the election year. Standard errors are clustered at the municipality-year level and reported in parentheses. * denotes 10% statistical significance, ** 5% and *** 1%.*