Supplemental Appendix for: Labor Union Membership and Women's Political Ambition: Evidence From the United States

Appendix A

Description of Variable Creation and Coding.

CES, 2010-2022

The Cumulative Cooperative Election Study (CES), including the raw survey data and the associated codebook, is publicly available to access and download at the following link (`https://doi.org/10.7910/DVN/II2DB6`).

To construct my main dataset, I combine a question about whether respondents have ever run for elective office, asked in the following individual CES survey years: 2010 (*CC418a*), 2012 (*CC418a*), 2014 (*CC418a*), 2016 (*CC16_418a*), 2018 (*CC18_418a*), 2020 (*CC20_432a*), and 2022 (*CC22_432a*), with existing variables from the larger Cumulative CES. This final combined dataset thus includes even years from 2010 through 2022.

Below, I show unweighted **descriptive statistics for women only** (gender = female) CES respondents across the following years: 2010, 2012, 2014, 2016, 2018, 2020, and 2022.

Descriptive Statistics (women only)

- Ever Run for Office?

  Variable name = *Ever_Run_Office*

  Created by combining questions about running for office from 7 individual CES surveys (even years from 2010-2022) with the larger Cumulative CES.

  0 = have never run for elective office; 1 = have run for elective office

  Mean = 0.027; Standard Deviation = 0.163; Min = 0; Max = 1

  Valid observations = 191,090

- Labor Union Membership Status

  Created from the CES variable *union*

  Base category of 1 = never a union member; 2 = former union member; 3 = current union member

  Mean = 1.25; Standard Deviation = 0.546; Min = 1; Max = 3

  Valid observations = 223,316

- Age

  Created from the CES variable *birthyr*

  In years (the year of the CES survey - a respondent's birth year)

  Mean = 48.3; Standard Deviation = 17.0; Min = 18; Max = 99

  Valid observations = 223,881

- Race

  Created from the CES variable *race_h*

  Base category of 1 = White; 2 = Black; 3 = Hispanic; 4 = Other

  Mean = 1.55; Standard Deviation = 0.910; Min = 1; Max = 4

  Valid observations = 223,881

- Family Income

  Created from the CES variable *faminc*

  Base category of 1 = 100k or less; 2 = More than 100k; 3 = prefer not to say

  Mean = 1.35; Standard Deviation = 0.668; Min = 1; Max = 3

  Valid observations = 223,471

- Education

  Created from the CES variable *educ*

  Base category of 1 = less than a four-year degree (high school or less/high school diploma/some college/two-year degree); 2 = four-year degree; 3 = graduate degree

  Mean = 1.45; Standard Deviation = 0.687; Min = 1; Max = 3

  Valid observations = 223,881

- Home Ownership

  Created from the CES variable *ownhome*

  0 = rent/other; 1 = own

  Mean = 0.602; Standard Deviation = 0.489; Min = 0; Max = 1

  Valid observations = 222,993

- Homemaker

  Created from the CES variable *employ*

  0 = not a homemaker; 1 = homemaker

  Mean = 0.118; Standard Deviation = 0.323; Min = 0; Max = 1

  Valid observations = 223,807

- Marital Status

  Created from the CES variable *marstat*

  0 = not married; 1 = married

  Mean = 0.484; Standard Deviation = 0.500; Min = 0; Max = 1

  Valid observations = 223,714

- Have Children under Age 18

  Created from the CES variable *has_child*

  0 = no; 1 = yes

  Mean = 0.269; Standard Deviation = 0.443; Min = 0; Max = 1

  Valid observations = 223,528

- Church Attendance

  Created from the CES variable *relig_church*

  Base category of 1 = never; 2 = seldom/a few times a year/once or twice a month; 3 = once a week/more than once a week

  Mean = 2.00; Standard Deviation = 0.733; Min = 1; Max = 3

  Valid observations = 219,858

- Military Household

  Created from the CES variable *no_milstat*

  0 = no; 1 = yes

  Mean = 0.518; Standard Deviation = 0.500; Min = 0; Max = 1

  Valid observations = 223,880

- State Fixed Effects

  Created from the CES variable *state*

  Base category = Alabama (1), etc.

  Valid Observations = 223,881

- Year Fixed Effects

  Created from the CES variable *year*

  Base category = 2010, etc.

  Valid Observations = 223,881

CES Team Module - University of Houston, 2018

This 2018 University of Houston Cooperative Election Study (CES) team module, including the raw survey data and the associated codebook, is publicly available to access and download (I imported it from SPSS .sav format into Stata) at the following link (`https://doi.org/10.7910/DVN/7IOOXQ`).

Descriptive Statistics (all respondents)

- Anyone suggested R run for office?

  Created from the CES variable *UVH306_7*

  0 = nobody suggested run; 1 = somebody suggested run

  Mean = 0.234; Standard Deviation = 0.424; Min = 0; Max = 1

  Valid observations = 1,000

- Feel qualified to run for office?

  Crated from the CES variable *UVH317*

  1 = disagree; 2 = neither agree nor disagree; 3 = agree

  Mean = 1.87; Standard Deviation = 0.901; Min = 1; Max = 3

  Valid observations = 995

- Labor Union Membership Status

  Created from the CES variable *union*

  0 = never a union member; 1 = former/current union member

  Mean = 0.243; Standard Deviation = 0.429; Min = 0; Max = 1

  Valid observations = 998

- Gender

  Created from the CES variable *gender*

  0 = male; 1 = female

  Mean = 0.593; Standard Deviation = 0.492; Min = 0; Max = 1

  Valid observations = 1,000

- Age

  Created from the CES variable *birthyr*

  In years (the year of the CES survey - a respondent's birth year)

  Mean = 48.0; Standard Deviation = 17.8; Min = 18; Max = 87

  Valid observations = 1,000

- Race

  Created from the CES variable *race*

  0 = non White; 1 = White, non-Hispanic

  Mean = 0.758; Standard Deviation = 0.429; Min = 0; Max = 1

  Valid observations = 1,000

CES, 2010-2012 Panel

The 2010-2012 Cooperative Election Study (CES), including the raw survey data and the associated codebook, is publicly available to access and download at the following link (`https://doi.org/10.7910/DVN/24416`). Below, I show, for all respondents I examine in this panel dataset, not just women, relevant unweighted descriptive statistics. My sample here consists of people who were in one of two groups from 2010 to 2012. The first group (people coded "0" for the Joined a Union variable) consists of people who reported *never* being a union member in *both* 2010 and 2012. The second group (people coded "1" for the Joined a Union variable) consists of people who reported "never" being a union member in 2010, but being a "current" union member in 2012, suggesting that they joined a labor union at some point between 2010 and 2012. In short, my sample here does not include people who do not fit these aforementioned criteria, and thus contains a fraction of the full potential usable sample size (N = 19,000) of the 2010-2012 CES Panel Study.

Descriptive Statistics

- Joined a Union (2010 $\rightarrow$ 2012)

  Created from the CES variables *union_10* & *union_12*

  0 = never a union member in both 2010 and 2012; 1 = never a union member in 2010 but a current union member in 2012

  Mean = 0.011; Standard Deviation = 0.106; Min = 0; Max = 1

  Valid Observations = 11,970

- Female (measured in 2010)

  Created from the CES variable *gender_2010*

  0 = male; 1 = female

  Mean = 0.542; Standard Deviation = 0.498; Min = 0; Max = 1

  Valid Observations = 11,970

- Ever Run for Office? (measured in 2010)

  Created from the CES variable *CC10_418a*

  0 = no; 1 = yes

  Mean = 0.038; Standard Deviation = 0.191; Min = 0; Max = 1

  Valid Observations = 11,938

Cumulative GSS

The Cumulative General Social Survey (GSS) spans 1972-2022 (this was the most recent year available at the time of this writing). The raw survey data and the associated codebook, is publicly available to access and download at the following link. (`https://gss.norc.org/get-the-data`). Below, I show the unweighted statistics for women (gender = female) GSS respondents. See the following link for additional information on GSS survey questions and their year-by-year availability (`https://gssdataexplorer.norc.org/variables/vfilter`). The effective sample size for my analyses is smaller because I can only examine years in which these below variables are all asked in the same survey year.

Descriptive Statistics (women only)

- DV = Women Emotionally Suited for Politics?

  Created from the GSS variables *fepol*, *fepoly*, *fepolv*, and *fepolnv*

  0 = agree that women are not suited for politics; 1 = agree that women are suited for politics

  Mean = 0.701; Standard Deviation = 0.458; Min = 0; Max = 1

  Valid Observations = 23,223

- Labor Union Membership

  Created from the GSS variables *union*, and *memunion*

  0 = not a current union member; 1 = current union member

  Mean = 0.078; Standard Deviation = 0.268; Min = 0; Max = 1

  Valid Observations = 29,490

- Mother Has Post High School Education

  Created from the GSS variable *madeg*

  0 = no education past high school; 1 = education beyond high school

  Mean = 0.145; Standard Deviation = 0.352; Min = 0; Max = 1

  Valid Observations = 35,418

- Mother Has Ever Worked Outside the Home

  Created from the GSS variables *mawork*, *mawkbaby*, *mawkborn*, *mawk16* and *mawrkgrw*

  0 = mother hasn't worked outside the home; 1 = mother worked outside the home

  Mean = 0.535; Standard Deviation = 0.499; Min = 0; Max = 1

  Valid Observations = 35,436

- Year Fixed Effects

  Created from the GSS variable *year*

  Base category = 1974, etc.

Appendix B

Table B1

These are the regression models associated with Figures 2a & 2b in the main paper.

Table B1: Labor union membership, educational attainment, and women's probability of having ever run for office, 2010-2022

	DV = Ever Run for Office?	
	< Four-year college degree	Four-year college degree +
Never a union member (ref.)		
Former union member	0.135***	0.141***
	(0.023)	(0.025)
Current union member	0.243***	0.279***
	(0.035)	(0.031)
Age	0.001	0.008***
	(0.001)	(0.001)
Married	0.056***	0.068***
	(0.018)	(0.021)
Homemaker	-0.178***	-0.257***
	(0.028)	(0.044)
Own home	0.054***	0.108***
	(0.019)	(0.025)
Have children under age 18	0.076***	0.137***
	(0.021)	(0.024)
Any military affiliation	0.086***	0.101***
	(0.017)	(0.020)
White (ref.)		
Black	-0.033	-0.037
	(0.027)	(0.034)
Hispanic	0.129***	0.014
	(0.026)	(0.034)
Other	0.088**	-0.007
	(0.039)	(0.038)
High school or less (ref.)		
Some college	0.097***	
	(0.019)	
Two-year degree	0.088***	
	(0.023)	
Four year degree (ref.)		
Graduate degree		0.026
		(0.020)
Income less than $100,000 (ref.)		
Income at least $100,000	0.014	0.031
	(0.029)	(0.023)
Prefer not to say income	-0.019	-0.023
	(0.027)	(0.031)
Never attend church (ref.)		
Attend church occasionally	0.096***	0.053**
	(0.021)	(0.024)
Attend church weekly	0.238***	0.151***
	(0.024)	(0.027)
Constant	-2.128***	-2.439***
	(0.081)	(0.101)
State Fixed Effects	Yes	Yes
Year Fixed Effects	Yes	Yes
Observations	120,941	65,466
Pseudo R^2	0.041	0.039

Note: Dependent variables are ever having run for elective office (0 = no; 1 = yes). Probit coefficients with robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1, two-tailed test. Source is the 2010-2022 CES (women only).

Table B2

Interaction (among women) between union membership status (0 = never; 1 = former/current) and a three-category measure of formal education (base category of 1 = less than a four-year degree; 2 = four-year degree; 3 = graduate degree). Overall, these data suggest that union membership matters broadly rather than systematically more/less for one group of women. There is mixed evidence, at best, to suggest that it is only meaningful for more highly-educated women, i.e., those who may be more likely to be in the public sector.

Table B2: Labor union membership , a three-category measure of education, and women's probability of having ever run for office, 2010-2022

	DV = Ever Run for Office?
Ever a union member	0.149***
	(0.020)
Less than a four-year degree (ref.)	
Four-year degree	0.113***
	(0.017)
Graduate degree	0.190***
	(0.023)
Ever a union member × Four-year degree	0.095***
	(0.033)
Ever a union member × Graduate degree	0.025
	(0.037)
Age	0.003***
	(0.000)
Married	0.056***
	(0.014)
Homemaker	-0.208***
	(0.023)
Own home	0.074***
	(0.015)
Have children under age 18	0.108***
	(0.016)
Any military affiliation	0.097***
	(0.013)
White (ref.)	
Black	-0.020
	(0.021)
Hispanic	0.096***
	(0.021)
Other	0.040
	(0.027)
Income less than $100,000 (ref.)	
Income at least $100,000	0.041**
	(0.018)
Prefer not to say income	-0.010
	(0.020)
Never attend church (ref.)	
Attend church occasionally	0.075***
	(0.016)
Attend church weekly	0.196***
	(0.018)
Constant	-2.242***
	(0.062)
State Fixed Effects	Yes
Year Fixed Effects	Yes
Observations	186,407
Pseudo R2	0.038

Note: Dependent variable is ever having run for elective office (0 = no; 1 = yes). Probit coefficients with robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1, two-tailed test. Source is the 2010-2022 CES (women only). Figures 2a and 2b in the main paper are based on these regression models.

Table B3

This is associated with a Footnote in the main paper. Table B3 (on the next page) replicates my primary regression model (Table 4 and Figure 1 in the main paper) but among men rather than women. The only difference is that this model changes the coding for the employment status variable in the CES from homemaker (a less common and less traditional role for men vs. for women) vs. not to employed vs. not (0 = not employed full/part time; 1= employed full/part time; mean = 0.546; valid N = 187,367).

For purposes of comparison (across gender), please see the following. This is based on marginal effects from the regression model in Table 4 (Main Paper) and Table B3 (here in the Supplemental Appendix). In short, the absolute changes in the dependent variable (ever having run for office) are larger for men, but the percent changes are larger for women.

See the next page (p. 11) for the regression model.

Relevant "Effect Sizes" for Men vs. Women

The absolute changes in the predicted probability (of having ever run for office) for **men**: (never → former → current): 4.8 → 6.1 → 7.8.

The absolute changes in the predicted probability (of having ever run for office) for **women** (never → former → current): 2.4 → 3.4 → 4.4.

The percent changes in the predicted probability (of having ever run for office) for **men**: never → former = 27.3% change; former → current = 27.9%; never → current = 62.5%.

The percent changes in the predicted probability (of having ever run for office) for **women**: never → former = 41.7% change; former → current = 29.4%; never → current = 83.3%.

Table B3: Labor union membership status and **men's** probability of having ever run for office, 2010-2022

	DV = Ever Run for Office?
Never a union member (ref.)	
Former union member	0.119***
	(0.013)
Current union member	0.247***
	(0.018)
Age	0.004***
	(0.000)
Married	0.046***
	(0.013)
Homemaker	-0.074
	(0.060)
Own home	0.100***
	(0.015)
Have children under age 18	0.070***
	(0.015)
Any military affiliation	0.098***
	(0.012)
White (ref.)	
Black	-0.153***
	(0.025)
Hispanic	0.013
	(0.020)
Other	-0.019
	(0.022)
Less than a four-year degree (ref.)	
Four year college degree	0.144***
	(0.013)
Graduate degree	0.263***
	(0.015)
Income less than $100,000 (ref.)	
Income at least $100,000	0.012
	(0.014)
Prefer not to say income	0.008
	(0.018)
Never attend church (ref.)	
Attend church occasionally	0.109***
	(0.014)
Attend church weekly	0.261***
	(0.015)
Constant	-2.490***
	(0.063)
State Fixed Effects	Yes
Year Fixed Effects	Yes
Observations	152,643
Pseudo R^2	0.037

Note: Dependent variable is ever having run for elective office (0 = no; 1 = yes). Probit coefficients with robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1, two-tailed test. Source is the 2010-2022 CES (men only).