Appendix to "Compensating for the Climate: Unemployment Insurance and Climate Change Votes"

I. Summary Statistics for Estimated Models

Table A1. Summary Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
Yea_{ijk}	.508	.501	0	1
CI-Employment (Broad)$_{ijk}$	.050	.088	.001	.589
CI-Employment (Narrow)$_{ijk}$	.017	.044	.000	.426
$Benefits_{jk}$	307	46.8	195	423
$Democrat_{ijk}$	.592	.492	0.00	1.00
DW-$Nominate_{ijk}$	.079	.521	-.704	1.29
Legislator $Popularity_{ijk}$	.672	.132	.448	1.00
Obama $Popularity_{ijk}$	53.1	14.5	22.0	95.0
Ln($Income_{ijk}$)	10.8	.213	10.3	11.5
$Education_{ijk}$	27.3	9.67	6.70	64.9
Ln($Population_{ijk}$)	12.9	.673	10.5	13.8
$Unemployment_{ijk}$	9.41	2.24	4.18	20.5

II. Description of Carbon-Intensive Industries

As noted in the text, my broad measure of carbon-intensive employment includes all industries that Scott (2009) identifies as the top ten most carbon-intensive, as well as mining, oil and gas extraction. My narrow measure includes only the most carbon-dependent of these industries: mining, oil and gas extraction and primary metal manufacturing. A complete list of these industries is shown in Table A2, as defined by the North American Industry Classification System (NAICS).

Table A2. Carbon-Intensive Industries	
Industry (NAICS Classification)	CI-Employment Measure
Mining, quarrying, and oil and gas extraction (21) • Oil and gas extraction (211) • Mining (except oil and gas) (212) • Support activities for mining (213)	Narrow
Primary metal manufacturing (331) • Iron and steel mills and ferroalloy manufacturing (3311)* • Steel product manufacturing from purchased steel (3312) • Alumina and aluminum production and processing (3313)* • Nonferrous metal (except aluminum) production and processing (3314) • Foundries (3315)	Narrow
Textile mills (313) • Fiber, yarn, and thread mills (3131) • Fabric mills (3132) • Textile and fabric finishing and fabric coating mills (3133)*	Narrow, Broad
Paper manufacturing (322) • Pulp, paper, and paperboard mills (3221)* • Converted paper product manufacturing (3222)	Narrow, Broad
Petroleum and coal products manufacturing (324) • Petroleum and coal products manufacturing (3241)*	Narrow, Broad
Chemical manufacturing (325) • Basic chemical manufacturing (3251)* • Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing (3252) • Pesticide, fertilizer, and other agricultural chemical manufacturing (3253) • Pharmaceutical and medicine manufacturing (3254) • Paint, coating, and adhesive manufacturing (3255) • Soap, cleaning compound, and toilet preparation manufacturing (3256) • Other chemical product and preparation manufacturing (3259)	Narrow, Broad
Nonmetallic mineral product manufacturing (327) • Clay product and refractory manufacturing (3271)* • Glass and glass product manufacturing (3272)* • Cement and concrete product manufacturing (3273)* • Lime and gypsum product manufacturing (3274)* • Other nonmetallic mineral product manufacturing (3279)*	Narrow, Broad
*Top-ten carbon-intensive manufacturing industry (Scott 2009)	

The industry classifications in both measures err on the side of inclusiveness for reasons of data availability: the finest classifications are not available for all counties, so I employ a "lowest common denominator" approach that allows me to include all counties in my measures. For example, the narrow measure includes not only iron and steel mills and ferroalloy manufacturing (NAICS 3311)—which Scott (2009) identifies as the most carbon-intensive manufacturing

sector—but also steel product manufacturing from purchased steel (NAICS 3312), alumina and aluminum production and processing (NAICS 3313), and nonferrous metal (except aluminum) production and processing (NAICS 3314). This is because the four-digit data are not available for all counties, while the three digit data (NAICS 331) are. The four-digit subsectors that Scott (2009) identifies as most carbon-intensive are indicated by an asterisk in Table A2. The inclusion of less carbon-intensive industries should, if anything, weaken my results, so the inclusive measures provide a conservative test.

III. Interactive Results

My primary result is the interactive effect of carbon-intensive employment and unemployment benefits. Given this, it is important to ensure that this interactive result is not spuriously driven by a correlation between unemployment insurance and other influences on climate change votes. This seems unlikely, as these correlations are generally low, ranging from -.18 (unemployment) to .43 (logged income per capita). However, as a further robustness check, I interact CI employment with each of the individual controls. To facilitate interpretation, all of the controls (except the dichotomous Democrat dummy) have been mean-centered so the coefficient on CI employment gives the impact of that variable when the interacted control is at its mean (rather than zero, a nonexistent value for these controls). Results for the broad measure of CI employment are shown in Table A3; results for the narrow measure are in Table A4. Including these interactions does not alter my results for any of the key variables.

Table A3. Interactions between Broad CI Employment and Controls

Independent Variable	(1)	(2)	(3)	(4)	(5)	(6)
CI-Employment$_i$	-46.9**	-30.0**	-36.5**	-28.9**	-30.7**	-27.9**
	(9.60)	(8.44)	(8.93)	(7.70)	(8.45)	(8.77)
CI-Employment$_i$* Benefits$_i$	.249**	.224**	.215**	.213**	.215**	.208**
	(.055)	(.057)	(.060)	(.053)	(.056)	(.059)
Benefits$_i$	.001	.001	.002	.001	.002	.002
	(.003)	(.003)	(.003)	(.004)	(.003)	(.004)
Democrat$_i$	2.36**	2.78**	2.75**	2.77**	2.72**	2.79**
	(.331)	(.265)	(.266)	(.265)	(.253)	(.267)
Ln(Income$_i$)	1.76**	2.19**	1.95**	1.86**	1.75**	1.86**
	(.630)	(.706)	(.632)	(.628)	(.592)	(.621)
Ln(Population$_i$)	-1.12**	-.887**	-.752**	-.826**	-.954**	-.823**
	(.362)	(.344)	(.364)	(.356)	(.369)	(.342)
Unemployment$_i$	.070	.083	.079	.074	.074	.081
	(.059)	(.058)	(.058)	(.059)	(.057)	(.058)
Legislator Popularity$_i$	.549	.835	.863	.837	-.010	.851
	(.743)	(.691)	(.794)	(.722)	(.862)	(.703)
Obama Popularity$_i$	.034*	.034*	.038**	.035*	.034*	.037*
	(.020)	(.020)	(.019)	(.020)	(.020)	(.021)
CI-Employment$_i$* Democrat$_i$	13.4**					
	(5.01)					
CI-Employment$_i$* Ln(Income$_i$)		-11.4				
		(10.2)				
CI-Employment$_i$* Ln(Population$_i$)			-4.76**			
			(1.63)			
CI-Employment$_i$* Unemployment$_i$				.267		
				(.429)		
CI-Employment$_i$* Legislator Popularity$_i$					24.3**	
					(11.8)	
CI-Employment$_i$* Obama Popularity$_i$						-.049
						(.047)
Constant	-14.3*	-9.63	-7.05	10.4**	-4.48	-9.05
	(8.07)	(9.00)	(9.69)	(3.99)	(10.6)	(869)
Region FE?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	431	431	431	431	369	431
Wald χ^2 ($P > \chi^2$)	1856.2	1545.2	1274.7	1691.5	1286.5	1483.8
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Dependent variable: Pr(Yea$_i$=1)
Robust-cluster standard errors in parentheses, **p<.05, *p<.10

Table A4. Interactions between Narrow CI Employment and Controls

Independent Variable	(1)	(2)	(3)	(4)	(5)	(6)
CI-Employment$_i$	-115**	-54.7**	-54.8**	-38.0**	-68.1**	-53.7**
	(29.2)	(17.3)	(21.4)	(13.3)	(25.3)	(20.4)
CI-Employment$_i$* Benefits$_i$	.391**	.400**	.278**	.207*	.454**	.360**
	(.149)	(.132)	(.136)	(.112)	(.172)	(.146)
Benefits$_i$	.005	.004	.006*	.006	.005	.005
	(.003)	(.004)	(.004)	(.004)	(.004)	(.004)
Democrat$_i$	2.33**	2.69**	2.67**	2.76**	2.69**	2.67**
	(.281)	(.247)	(.243)	(.260)	(.252)	(.245)
Ln(Income$_i$)	1.68**	2.05**	1.54**	1.72**	1.60**	1.73**
	(.632)	(.610)	(.585)	(.637)	(.596)	(.613)
Ln(Population$_i$)	-.744**	-.591**	-.368	-.742**	-.688**	-.618**
	(.214)	(.190)	(.257)	(.231)	(.248)	(.218)
Unemployment$_i$	.069	.086	.065	.120*	.074	.074
	(.057)	(.057)	(.056)	(.064)	(.059)	(.058)
Legislator Popularity$_i$	.777	.990	1.13	.961	.123	.998
	(.806)	(.725)	(.854)	(.744)	(.776)	(.785)
Obama Popularity$_i$	.035*	.036*	.037*	.037*	.035*	.031
	(.021)	(.021)	(.020)	(.022)	(.020)	(.021)
CI-Employment$_i$* Democrat$_i$	61.5**					
	(25.1)					
CI-Employment$_i$* Ln(Income$_i$)		-17.5				
		(17.1)				
CI-Employment$_i$* Ln(Population$_i$)			-14.6**			
			(6.00)			
CI-Employment$_i$* Unemployment$_i$				-4.77**		
				(2.25)		
CI-Employment$_i$* Legislator Popularity$_i$					79.0*	
					(40.6)	
CI-Employment$_i$* Obama Popularity$_i$						.415
						(.430)
Constant	-8.89	-15.5**	-13.1	-10.6	-8.83	-11.4
	(8.05)	(7.81)	(8.00)	(8.50)	(8.10)	(8.12)
Region FE?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	431	431	431	431	369	431
Wald χ^2 ($P > \chi^2$)	974.1	1090.6	1504.1	1264.9	1145.6	1248.6
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Dependent variable: Pr(Yea$_i$=1)
Robust-cluster standard errors in parentheses, **p<.05, *p<.10

IV. Party-Specific Marginal Effects

In the paper, I present the marginal effects of broad CI employment and unemployment benefits separately for Democrats and Republicans. However, these marginal effects are based on Model 1, Table 1, which pools together Democrat and Republican votes. Some readers may be interested in whether the marginal effects differ when based on Democrat-only and Republican-only regressions (Models 6 and 7, Table 1). I present these marginal effects in Figures A1 and A2. Comparing these with their full-sample counterparts—Figures 2 and 3 in the paper, respectively—it is clear that the split-sample marginal effects are qualitatively the same as those based on the full-sample Model 1. The effects for Democrats are virtually indistinguishable, while those for Republicans are very similar but have wider confidence intervals due to the small sample size (107) and small number of Yea votes (8).

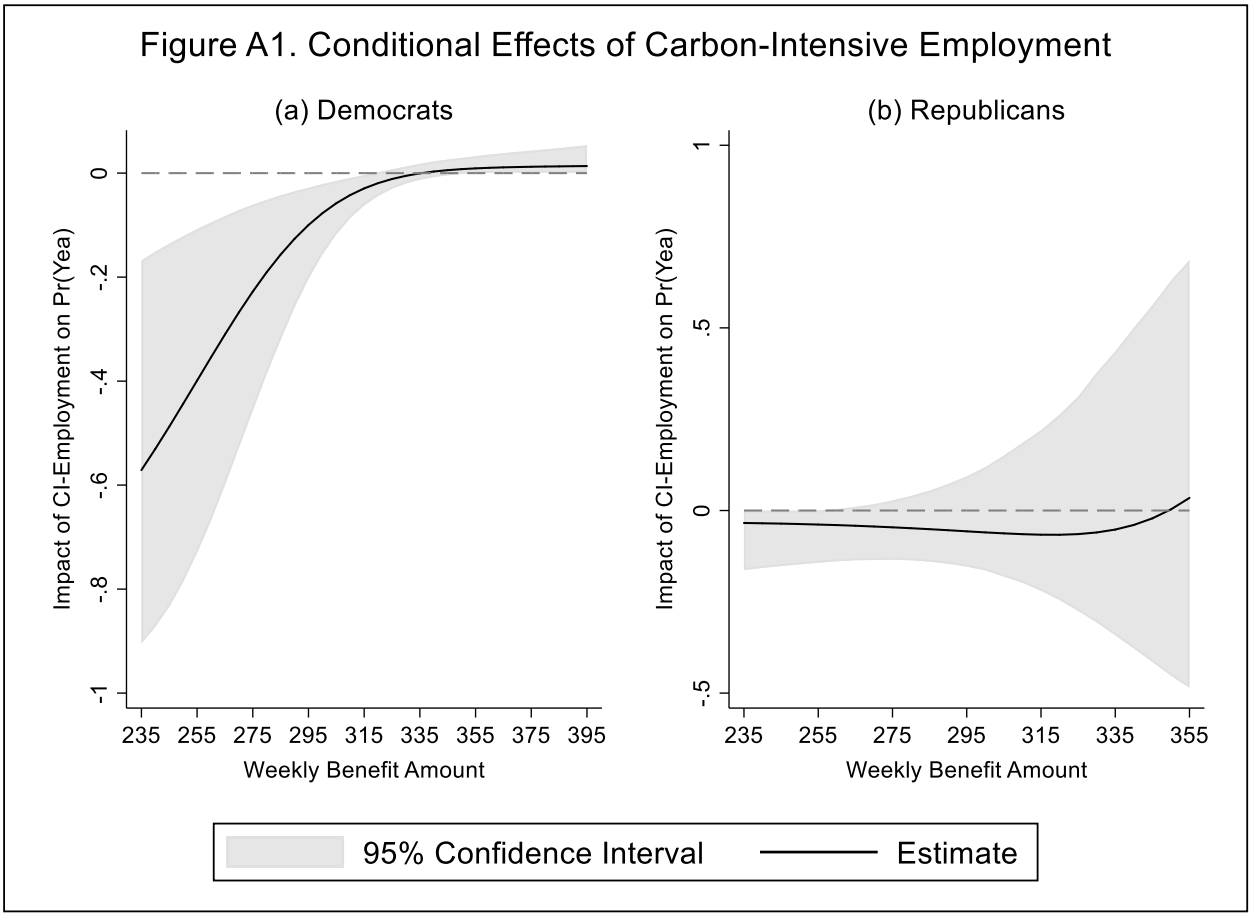

Figure A2. Conditional Effects of Unemployment Insurance