*Appendices*

**Title of manuscript:** Labor Unions and Voter Turnout in the American States: Direct versus Indirect Mobilization

**Appendix A: Summary Statistics (state-level analysis)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variable | N | Mean | S.D. | Min. | Max. |
| Voter eligible turnout (VET) | 749 | 50.55 | 11.21 | 2.5 | 94.3 |
| Voter age turnout (VAT) | 749 | 48.19 | 10.65 | 19.9 | 73.9 |
| Previous VET | 699 | 49.64 | 10.95 | 2.5 | 94.3 |
| Previous VAT | 699 | 47.45 | 10.50 | 19.9 | 73.9 |
| Union membership density | 750 | 14.58 | 6.78 | 2.8 | 34.9 |
| Voter registration requirements | 750 | 22.26 | 10.53 | 0 | 50 |
| Electoral competition | 745 | 42.51 | 11.19 | 9.26 | 66.08 |
| Initiative or referendum | 750 | 0.51 | 0.50 | 0 | 1 |
| Legislative professionalism | 750 | 0.20 | 0.12 | 0.27 | 0.659 |
| GSP growth rate | 750 | 6.27 | 4.25 | -26.6 | 40.3 |
| Percent high school graduates | 750 | 70.76 | 8.49 | 53.1 | 88.3 |
| Median age | 750 | 33.41 | 2.88 | 24.2 | 38.9 |
| Percent urban | 750 | 0.69 | 0.14 | 0.32 | 0.94 |
| Percent minority diversity | 750 | 0.30 | 0.16 | 0.02 | 0.74 |
| Southern state | 750 | 0.22 | 0.41 | 0 | 1 |
| Presidential election | 750 | 0.53 | 0.49 | 0 | 1 |
| Senate election | 750 | 0.67 | 0.46 | 0 | 1 |
| Gubernatorial election | 750 | 0.46 | 0.49 | 0 | 1 |

**Appendix B: Labor Union and Voter Turnout (VAP turnout)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Variable (DV=VAP) | Coefficient (PCSE) | | | | | |
| Midterm | | Presidential | | Pooled | |
| Previous turnout | 0.60\*\* | (0.06) | 0.36\*\* | (0.08) | 0.41\*\* | (0.10) |
| Union membership density | 0.23\*\* | (0.05) | -0.04 | (0.07) | 0.10 | (0.05) |
| *Institutional and political variables* | | | | | | |
| Voter registration requirements | -0.04 | (0.03) | -0.13\*\* | (0.02) | -0.11\*\* | (0.02) |
| Electoral competition | 0.03 | (0.03) | 0.06 | (0.03) | 0.04 | (0.02) |
| Initiative or referendum | 3.30\*\* | (0.39) | -0.22 | (0.53) | 1.80\*\* | (0.59) |
| Legislative professionalism | -12.51\*\* | (1.49) | 4.75\*\* | (1.65) | -2.28 | (2.27) |
| *Economic and socio-demographic variables* | | | | | | |
| GSP growth rate | -0.22\*\* | (0.06) | -0.29 | (0.16) | -0.28\*\* | (0.09) |
| Percent high school graduates | 0.04 | (0.04) | 0.08 | (0.14) | 0.07 | (0.07) |
| Median age | -0.07 | (0.09) | 0.09 | (0.31) | 0.04 | (0.17) |
| Percent urban | -7.13\*\* | (1.34) | -2.57 | (3.25) | -4.01\* | (1.97) |
| Percent minority diversity | 1.74 | (2.79) | -10.17\* | (4.18) | -5.01 | (2.98) |
| Southern state | -1.80\*\* | (0.50) | 0.20 | (0.85) | -0.33 | (0.67) |
| *Election dummy variables* | | | | | | |
| Presidential election |  |  |  |  | 22.26\*\* | (1.78) |
| Senate election | 1.72\*\* | (0.55) | 0.92 | (0.61) | 1.37\*\* | (0.45) |
| Gubernatorial election | 4.26\*\* | (0.28) | 0.45 | (0.48) | 2.16\*\* | (0.36) |
| Constant | 5.95 | (6.53) | 37.85\* | (14.71) | 12.66 | (10.09) |
| R2 (adjusted)  N of states  N of observations | 0.690  50  348 | | 0.587  50  348 | | 0.784  50  696 | |

Notes: Non-standardized coefficients and panel corrected standard errors are presented. Significance level: \*\*p<0.01, \*p<0.05 (two-tailed).

**Appendix C: Labor Union and Voter Turnout (without LDV)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Variable (DV=VEP) | Coefficient (PCSE) | | | | | |
| Midterm | | Presidential | | Pooled | |
| Union membership density | 0.26\* | (0.13) | -0.37 | (0.37) | -0.09 | (0.20) |
| *Institutional and political variables* | | | | | | |
| Voter registration requirements | -0.04 | (0.05) | -0.08 | (0.06) | -0.05 | (0.04) |
| Electoral competition | -0.02 | (0.08) | 0.06 | (0.06) | 0.03 | (0.06) |
| Initiative or referendum | 3.19 | (2.66) | -0.84 | (3.18) | 1.57 | (3.08) |
| Legislative professionalism | -4.35 | (4.68) | -2.48 | (2.75) | -3.99 | (3.15) |
| *Economic and socio-demographic variables* | | | | | | |
| GSP growth rate | -0.19\* | (0.08) | -0.25\* | (0.11) | -0.28\*\* | (0.08) |
| Percent high school graduates | -0.004 | (0.07) | 0.03 | (0.19) | 0.02 | (0.10) |
| Median age | -0.16 | (0.25) | -0.32 | (0.43) | -0.28 | (0.26) |
| Percent urban | -5.01 | (7.25) | -10.37 | (22.16) | -4.05 | (12.86) |
| Percent minority diversity | 15.76 | (8.34) | 7.74 | (8.93) | 10.80 | (6.81) |
| Southern state | -12.13\*\* | (4.15) | -10.46\* | (4.94) | -10.18\* | (4.08) |
| *Election dummy variables* | | | | | | |
| Presidential election |  |  |  |  | 16.62\*\* | (1.30) |
| Senate election | 1.58\*\* | (0.48) | 0.16 | (0.48) | 1.00\* | (0.40) |
| Gubernatorial election | 3.29 | (4.91) | 3.75 | (1.58) | 1.39\*\* | (0.37) |
| Constant | 49.65\*\* | (14.86) | 80.61\* | (32.30) | 55.43\*\* | (18.38) |
| R2 (adjusted)  N of states  N of observations  State fixed effect | 0.741  50  348  Yes | | 0.611  50  397  Yes | | 0.786  50  745  Yes | |

Notes: Non-standardized coefficients and panel corrected standard errors are presented. Significance level: \*\*p<0.01, \*p<0.05 (two-tailed).

**Appendix D: Labor Union and Voter Turnout (with interaction term)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient (PCSE) | | | |
| DV=VEP | | DV=VAP | |
| Previous turnout | 0.30\*\* | (0.10) | 0.42\*\* | (0.10) |
| Union membership density | 0.15\* | (0.07) | 0.17\*\* | (0.06) |
| Union density \* Presidential election | -0.12 | (0.09) | -0.14\* | (0.08) |
| *Institutional and political variables* | | | | |
| Voter registration requirements | -0.14\*\* | (0.03) | -0.11\*\* | (0.02) |
| Electoral competition | 0.09\*\* | (0.03) | 0.04\* | (0.02) |
| Initiative or referendum | 2.24\*\* | (0.61) | 1.77\*\* | (0.59) |
| Legislative professionalism | 0.62 | (2.48) | -2.22 | (2.30) |
| *Economic and socio-demographic variables* | | | | |
| GSP growth rate | -0.32\*\* | (0.10) | -0.27\*\* | (0.09) |
| Percent high school graduates | 0.07 | (0.08) | 0.07 | (0.07) |
| Median age | 0.08 | (0.19) | 0.05 | (0.17) |
| Percent urban | -0.35 | (2.18) | -3.97\*\* | (1.95) |
| Percent minority diversity | -3.97 | (3.59) | -4.91\* | (2.94) |
| Southern state | -0.16 | (0.94) | -0.34 | (0.66) |
| *Election dummy variables* | | | | |
| Presidential election | 23.21\*\* | (2.44) | 24.37\*\* | (2.28) |
| Senate election | 1.05\* | (0.57) | 1.33\*\* | (0.44) |
| Gubernatorial election | 1.56\*\* | (0.61) | 2.12\*\* | (0.36) |
| Constant | 13.50 | (11.00) | 10.95 | (9.83) |
| R2 (adjusted)  N of states  N of observations  State fixed effect | 0.7019  50  696  No | | 0.7864  50  696  No | |

Notes: Non-standardized coefficients and panel corrected standard errors are presented. Significance level: \*\*p<0.05, \*p<0.1 (two-tailed).

**Appendix E: Summary Statistics (individual-level CCES analysis)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variable | N | Mean | S.D. | Min. | Max. |
| Vote | 358,223 | 0.566 | 0.495 | 0 | 1 |
| Current union member | 426,815 | 0.071 | 0.257 | 0 | 1 |
| Current union household | 420,797 | 0.093 | 0.291 | 0 | 1 |
| Current/former union member | 426,815 | 0.278 | 0.448 | 0 | 1 |
| Current/former union household | 420,797 | 0.241 | 0.428 | 0 | 1 |
| Political ideology | 435,595 | 3.114 | 1.149 | 1 | 5 |
| Partisan strength | 453,692 | 2.929 | 1.091 | 1 | 4 |
| Income | 418,149 | 2.838 | 1.444 | 1 | 5 |
| Education | 470,688 | 2.159 | 0.995 | 1 | 4 |
| Female | 470,755 | 0.537 | 0.498 | 0 | 1 |
| Age | 470,755 | 49.595 | 16.470 | 18 | 109 |
| White | 470,755 | 0.744 | 0.436 | 0 | 1 |
| Black | 470,755 | 0.108 | 0.311 | 0 | 1 |
| Hispanic | 470,755 | 0.081 | 0.272 | 0 | 1 |
| Others | 470,755 | 0.066 | 0.248 | 0 | 1 |
| Married | 469,200 | 0.552 | 0.497 | 0 | 1 |

**Appendix F: Direct and Indirect Mobilization of Labor Union (CCES)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | Coefficient (Std. Err.) | | | | | | | |
| Direct  mobilization | | | Indirect mobilization | | | Pooled | |
| Current/former union member | 0.126\*\* | (0.009) | |  |  | | 0.102\*\* | (0.010) |
| Current/former union household |  |  | | 0.119\*\* | (0.010) | | 0.087\*\* | (0.010) |
| Political ideology | -0.006 | (0.003) | | -0.006 | (0.003) | | -0.005 | (0.003) |
| Partisan strength | 0.179\*\* | (0.004) | | 0.181\*\* | (0.004) | | 0.181\*\* | (0.004) |
| Income | 0.074\*\* | (0.003) | | 0.072\*\* | (0.003) | | 0.072\*\* | (0.003) |
| Education | 0.208\*\* | (0.004) | | 0.212\*\* | (0.004) | | 0.212\*\* | (0.004) |
| Female | -0.043\*\* | (0.008) | | -0.061\*\* | (0.008) | | -0.047\*\* | (0.008) |
| Age | 0.047\*\* | (0.001) | | 0.049\*\* | (0.001) | | 0.047\*\* | (0.001) |
| Age-squared | -0.000\*\* | (0.000) | | -0.000\*\* | (0.000) | | -0.000\*\* | (0.000) |
| Black | -0.461\*\* | (0.013) | | -0.462\*\* | (0.013) | | -0.466\*\* | (0.013) |
| Hispanic | -0.604\*\* | (0.015) | | -0.605\*\* | (0.016) | | -0.603\*\* | (0.016) |
| Others | -0.383\*\* | (0.017) | | -0.386\*\* | (0.017) | | -0.388\*\* | (0.017) |
| Married | 0.021\* | (0.009) | | 0.012 | (0.009) | | 0.013 | (0.009) |
| Presidential election | 0.625\*\* | (0.015) | | 0.624\*\* | (0.016) | | 0.627\*\* | (0.016) |
| State union density | 0.004\*\* | (0.0007) | | 0.004\*\* | (0.0007) | | 0.003\*\* | (0.0007) |
| Constant | -3.351\*\* | (0.046) | | -3.390\*\* | (0.047) | | -3.372\*\* | (0.047) |
| Var. (state level)  N of states  N of observations  AIC  BIC  Log likelihood  Year Fixed Effects | 0.043\*\*  51  261,502  319084.6  319294.0  -159522.3  Yes | | 0.044\*\*  51  257,541  313949.6  314158.8  -156954.8  Yes | | | 0.044\*\*  51  256,976  313142.2  313361.8  -156550.1  Yes | | |

Notes: Coefficients and standard errors from multilevel logistic regression models are presented. Significance level: \*\*p<0.01, \*p<0.05 (two-tailed).