# Online Supplemental Appendices

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Table A.1: Determinants of Union Troop Presence, Alternative Dependent Variables

|  | (1) Troop Presence | (2) Months Present | (3) Troops Per Sq. Mile | (4) Freedmen's Bureau |
|---|---|---|---|---|
| Union Deaths | -0.000 | -0.003 | -0.000 | 0.000 |
|  | (0.000) | (0.001) | (0.000) | (0.000) |
| Confederate Deaths | 0.000 | 0.006 | 0.000 | -0.000 |
|  | (0.000) | (0.002) | (0.000) | (0.000) |
| Prop. free Black | 7.901 | 283.210 | 4.987 | 9.743 |
|  | (4.308) | (84.851) | (3.041) | (5.152) |
| Log of population | 0.688 | 7.220 | 0.255 | 1.497 |
|  | (0.216) | (5.089) | (0.223) | (0.448) |
| Prop. of Enslaved | 0.730 | 28.863 | -1.337 | 3.364 |
|  | (0.761) | (11.951) | (0.591) | (0.835) |
| Prop. of small farms | 0.349 | 32.806 | -0.992 | 0.701 |
|  | (0.836) | (12.317) | (0.516) | (1.085) |
| Total Improved acreage | -0.000 | -0.000 | -0.000 | -0.000 |
|  | (0.000) | (0.000) | (0.000) | (0.000) |
| Inequality of farm holdings | -1.973 | -79.212 | 1.051 | -0.157 |
|  | (1.332) | (25.979) | (0.922) | (1.699) |
| Total cash value of farm | 0.000 | 0.000 | 0.000 | 0.000 |
|  | (0.000) | (0.000) | (0.000) | (0.000) |
| Farm value per capita | -0.002 | -0.059 | -0.001 | 0.000 |
|  | (0.002) | (0.016) | (0.001) | (0.002) |
| Rail access | 0.864 | 9.724 | 0.375 | 0.984 |
|  | (0.208) | (2.444) | (0.105) | (0.205) |
| Waterway access | 0.226 | 3.855 | 0.015 | 0.145 |
|  | (0.191) | (3.025) | (0.180) | (0.200) |
| Cotton Suitability | -0.696 | -4.445 | -0.073 | -0.735 |
|  | (0.713) | (18.439) | (0.746) | (0.821) |
| Terrain Ruggedness | 0.001 | 0.066 | -0.004 | -0.003 |
|  | (0.002) | (0.036) | (0.001) | (0.003) |
| Constant | -6.542 | -35.498 | -1.267 | -15.869 |
|  | (2.194) | (58.411) | (1.855) | (4.646) |
| State Fixed Effects | X | X | X | X |
| Observations | 872 | 1039 | 1033 | 903 |

Note: OLS coefficients are reported in columns 2 and 3 and logistic coefficients are reported in 1 and 4. All independent variables except *Union Deaths* and *Confederate Deaths* are from 1860. State fixed effects are included and robust standard errors are reported.

## Table A.2: Black Literacy Rates, Alternative Explanatory Measures

|  | (1) 1870 | (2) 1900 | (3) 1910 | (4) 1920 |
|---|---|---|---|---|
| Troop Presence | -0.482 | | | |
|  | (0.373) | | | |
| Troops Sq. Mile | | 0.162 | 0.060 | 0.290 |
|  | | (0.077) | (0.068) | (0.084) |
| Duration of Presence | | 0.006 | 0.016 | 0.022 |
|  | | (0.010) | (0.004) | (0.005) |
| Freedmen's Bureau | 0.360 | 0.434 | 0.526 | 1.192 |
|  | (0.717) | (0.330) | (0.285) | (0.308) |
| Log of population | -0.833 | 2.582 | 0.488 | -0.098 |
|  | (0.609) | (0.804) | (0.693) | (0.844) |
| Prop. of slave | -9.797 | -16.017 | -11.070 | -14.990 |
|  | (3.604) | (3.726) | (1.966) | (3.609) |
| Prop. free black | -19.452 | 0.197 | -11.814 | -32.797 |
|  | (10.826) | (10.092) | (8.691) | (10.141) |
| Prop. of small farms | 8.105 | 1.097 | -1.311 | 1.842 |
|  | (3.081) | (4.181) | (1.709) | (4.000) |
| Total Improved acreage | 0.000 | -0.000 | -0.000 | -0.000 |
|  | (0.000) | (0.000) | (0.000) | (0.000) |
| Ineqaulity of farm holdings | -13.392 | 3.842 | 3.210 | 4.187 |
|  | (5.170) | (7.105) | (2.155) | (4.710) |
| Total cash value of farm | -0.000 | -0.000 | -0.000 | 0.000 |
|  | (0.000) | (0.000) | (0.000) | (0.000) |
| Farm value per capita | 0.006 | 0.012 | -0.000 | -0.002 |
|  | (0.006) | (0.003) | (0.003) | (0.003) |
| Rail access | 0.977 | 0.981 | 1.101 | 1.154 |
|  | (0.664) | (0.336) | (0.315) | (0.335) |
| Waterway access | -0.919 | 1.610 | 0.874 | 1.022 |
|  | (0.498) | (0.482) | (0.386) | (0.490) |
| Cotton suitability | 4.818 | 6.254 | 3.056 | 6.399 |
|  | (3.729) | (4.649) | (2.210) | (4.038) |
| Terrain ruggedness | 0.006 | 0.015 | -0.004 | 0.001 |
|  | (0.019) | (0.004) | (0.009) | (0.009) |
| Constant | 52.282 | 41.357 | 72.905 | 73.604 |
|  | (6.133) | (8.467) | (7.128) | (9.200) |
| Observations | 1036 | 1028 | 1029 | 1017 |

Note: The dependent variable is the literacy rate of the black population for that time period. Other than occupation variables, independent variables are from 1860. State fixed effects are included and robust standard errors are reported.

## Table A.3: Difference-in-Differences: Literacy Rates, 1850 to 1900

|  | (1) Black | (2) White |
|---|---|---|
| Time | 62.541 | -0.101 |
|  | (1.449) | (0.374) |
| Troop Presence | -1.353 | 0.992 |
|  | (0.604) | (0.389) |
| Time × Troop Presence | 2.204 | -1.079 |
|  | (1.176) | (0.783) |
| Freedmen's Bureau | 0.724 | 0.606 |
|  | (0.686) | (0.359) |
| Time × Freedmen's Bureau | -0.585 | -0.158 |
|  | (1.168) | (0.467) |
| Log of Population | 0.269 | 0.634 |
|  | (0.812) | (0.329) |
| Prop. of small farms | -5.107 | -1.195 |
|  | (2.133) | (1.580) |
| Total improved acreage | 0.000 | 0.000 |
|  | (0.000) | (0.000) |
| Total cash vale of farm | 0.000 | 0.000 |
|  | (0.000) | (0.000) |
| Farm value per improved acre 1860 | 0.001 | 0.002 |
|  | (0.014) | (0.012) |
| Inequality of farm holdings 1860 | 7.746 | -1.089 |
|  | (2.844) | (2.846) |
| Prop. of Enslave 1860 | -12.805 | 6.944 |
|  | (1.594) | (1.830) |
| Prop. free Black 1860 | 59.196 | -13.621 |
|  | (7.923) | (8.059) |
| Rail access 1860 | 0.441 | 1.047 |
|  | (0.241) | (0.414) |
| Waterway access 1860 | 1.160 | 0.539 |
|  | (0.336) | (0.391) |
| Cotton Suitability 1860 | 0.518 | 5.472 |
|  | (1.987) | (1.651) |
| Terrain Ruggedness | 0.010 | -0.001 |
|  | (0.004) | (0.005) |
| Constant | 0.419 | 79.719 |
|  | (5.863) | (3.033) |
| State Fixed Effects | X | X |
| Observations | 2,022 | 2,026 |

Note: The dependent variable is the Literacy rate of the Black population for 1850 or 1900. State fixed effects are included and robust standard errors are reported.

## Table A.4: Difference-in-Differences: Literacy Rates, 1850 to 1910

|  | (1) Black | (2) White |
|---|---|---|
| Time | 71.850 | 2.813 |
|  | (1.514) | (0.425) |
| Troop Presence | -1.149 | 1.043 |
|  | (0.646) | (0.369) |
| Time × Troop Presence | 2.081 | -1.495 |
|  | (1.116) | (0.694) |
| Freedmen's Bureau | 0.546 | 0.716 |
|  | (0.683) | (0.314) |
| Time × Freedmen's Bureau | -0.283 | -0.496 |
|  | (1.028) | (0.314) |
| Log of population | 0.632 | 0.870 |
|  | (0.642) | (0.336) |
| Prop. of small farms | -4.988 | -2.223 |
|  | (2.357) | (1.796) |
| Total improved acreage | -0.000 | 0.000 |
|  | (0.000) | (0.000) |
| Total cash value of farm | 0.000 | 0.000 |
|  | (0.000) | (0.000) |
| Farm value per improved acre 1860 | -0.013 | 0.003 |
|  | (0.015) | (0.010) |
| Inequality of farm holdings 1860 | 3.790 | -0.827 |
|  | (2.183) | (1.893) |
| Prop. of Enslaved 1860 | -10.662 | 5.657 |
|  | (1.528) | (1.535) |
| Prop. free Black 1860 | 53.248 | -11.946 |
|  | (8.713) | (5.503) |
| Rail access 1860 | 0.559 | 0.809 |
|  | (0.226) | (0.388) |
| Waterway access 1860 | 0.753 | 0.643 |
|  | (0.276) | (0.306) |
| Cotton Suitability 1860 | -1.031 | 4.961 |
|  | (1.277) | (1.500) |
| Terrain Ruggedness | 0.000 | -0.000 |
|  | (0.007) | (0.004) |
| Constant | 0.946 | 78.908 |
|  | (5.164) | (3.016) |
| State Fixed Effects | X | X |
| Observations | 2,023 | 2,026 |

Note: The dependent variable is the Literacy rate of the Black population for 1850 or 1910. State fixed effects are included and robust standard errors are reported.

## Table A.5: Difference-in-Differences: Literacy Rates, 1850 to 1920

|  | (1) Black | (2) White |
|---|---|---|
| Time | 69.852 | 2.902 |
|  | (1.668) | (0.450) |
| Troop Presence | -0.841 | 1.183 |
|  | (0.739) | (0.405) |
| Time × Troop Presence | 2.512 | -1.659 |
|  | (1.236) | (0.816) |
| Freedmen's Bureau | 1.026 | 0.756 |
|  | (0.766) | (0.318) |
| Time × Freedmen's Bureau | -0.686 | -0.729 |
|  | (1.231) | (0.436) |
| Log of Population | 0.443 | 0.914 |
|  | (0.779) | (0.320) |
| Prop. of small farms | -6.662 | -2.137 |
|  | (2.559) | (2.103) |
| Total improved acreage | -0.000 | 0.000 |
|  | (0.000) | (0.000) |
| Total cash value of farm | 0.000 | 0.000 |
|  | (0.000) | (0.000) |
| Farm value per improved acre 1860 | -0.010 | -0.003 |
|  | (0.015) | (0.011) |
| Inequality of farm holdings 1860 | 6.750 | -0.703 |
|  | (3.143) | (1.751) |
| Prop. of Enslaved 1860 | -14.695 | 5.413 |
|  | (1.708) | (1.643) |
| Prop. free Black 1860 | 42.876 | -9.794 |
|  | (9.659) | (6.903) |
| Rail access 1860 | 0.499 | 0.828 |
|  | (0.256) | (0.357) |
| Waterway access 1860 | 1.085 | 0.656 |
|  | (0.297) | (0.305) |
| Cotton Suitability 1860 | -0.318 | 5.161 |
|  | (1.682) | (1.519) |
| Terrain Ruggedness | 0.000 | -0.001 |
|  | (0.008) | (0.005) |
| Constant | 1.909 | 78.539 |
|  | (5.841) | (3.158) |
| State Fixed Effects | X | X |
| Observations | 2,012 | 2,026 |

Note: The dependent variable is the Literacy rate of the Black population for 1850 or 1920. State fixed effects are included and robust standard errors are reported.

## Table A.6: Predicted Literacy Rates from Difference-in-Difference Models

### 1850-1900

| | Black | | White | |
|---|---|---|---|---|
| | No Troop Presence | Troop Presence | No Troop Presence | Troop Presence |
| 1850 | 4.8 (3.6, 6.1) | 3.5 (2.3, 4.7) | 91.0 (90.4,91.5) | 92.0 (91.3, 92.6) |
| 1900 | 67.2 (65.8, 68.5)[a] | 68.0 (66.9, 69.1)[a] | 90.8 (90.3, 91.3)[b] | 90.7 (89.6, 91.8)[b] |

*Note*: The 95% Confidence Intervals of the predicted literacy for each time and group are in parenthesis. Models are run separately for Black and white literacy rates. a: The probability that these predicted values are statically the same is 0.24. b: The probability that these predicted values are statically the same is 0.90.

### 1850-1910

| | Black | | White | |
|---|---|---|---|---|
| | No Troop Presence | Troop Presence | No Troop Presence | Troop Presence |
| 1850 | 4.6 (3.2, 5.9) | 3.4 (2.3, 4.6) | 90.9 (90.3,91.5) | 91.9 (91.2, 92.7) |
| 1910 | 76.3 (75.2, 77.5)[a] | 77.2 (76.0, 78.5)[a] | 93.5 (93.1, 93.9)[b] | 93.1 (92.0, 94.2)[b] |

*Note*: The 95% Confidence Intervals of the predicted literacy for each time and group are in parenthesis. Models are run separately for Black and white literacy rates. a: The probability that these predicted values are statically the same is 0.07. Therefore, we reject the null that they are the same. b: The probability that these predicted values are statically the same 0.41.

### 1850-1920

| | Black | | White | |
|---|---|---|---|---|
| | No Troop Presence | Troop Presence | No Troop Presence | Troop Presence |
| 1850 | 4.5 (3.1, 6.0) | 3.7 (2.5, 4.9) | 90.8 (90.1,91.5) | 92.0 (91.0, 93.0) |
| 1920 | 74.1 ( 72.8, 75.5)[a] | 75.8 (74.7, 76.9)[a] | 93.5 (93.0, 93.8 )[b] | 93.0 (91.6, 94.4)[b] |

*Note*: The 95% Confidence Intervals of the predicted literacy for each time and group are in parenthesis. Models are run separately for Black and white literacy rates. a: The probability that these predicted values are statically the same is 0.005. Therefore, we reject the null that they are the same. b: The probability that these predicted values are statically the same is 0.46.

Table A.7: White-on-Black Lynching, Negative Binomial Estimator with Additional Controls

|  | (1) 1911-1920 | (2) 1921-1930 | (3) 1911-1920 | (4) 1921-1930 |
|---|---|---|---|---|
| Δ in Black Lit. 1910-1900 | 0.020 |  |  |  |
|  | (0.008) |  |  |  |
| Δ in Black Lit. 1920-1910 |  | 0.026 |  |  |
|  |  | (0.013) |  |  |
| Diff. Δ in Black and White Lit. 1910-1900 |  |  | -0.017 |  |
|  |  |  | (0.008) |  |
| Diff. Δ in Black and White Lit. 1920-1910 |  |  |  | -0.028 |
|  |  |  |  | (0.013) |
| Electoral Competition 1908 | -0.002 |  | -0.002 |  |
|  | (0.008) |  | (0.008) |  |
| Electoral Competition 1920 |  | 0.010 |  | 0.011 |
|  |  | (0.008) |  | (0.008) |
| Log of population | 0.433 | -0.070 | 0.422 | -0.073 |
|  | (0.168) | (0.201) | (0.166) | (0.201) |
| Prop. of slave | 0.555 | 1.377 | 0.516 | 1.368 |
|  | (0.753) | (0.909) | (0.762) | (0.909) |
| Prop. free black | -14.417 | -9.033 | -14.353 | -9.112 |
|  | (8.116) | (7.347) | (8.047) | (7.373) |
| Prop. of small farms | -0.705 | 0.601 | -0.731 | 0.579 |
|  | (0.843) | (0.869) | (0.846) | (0.873) |
| Total Improved acreage | 0.000 | 0.000 | 0.000 | 0.000 |
|  | (0.000) | (0.000) | (0.000) | (0.000) |
| Inequality of farm holdings | -0.465 | 1.807 | -0.392 | 1.747 |
|  | (1.362) | (1.463) | (1.369) | (1.462) |
| Total cash value of farm | -0.000 | 0.000 | -0.000 | 0.000 |
|  | (0.000) | (0.000) | (0.000) | (0.000) |
| Farm value per capita | 0.002 | 0.001 | 0.002 | 0.001 |
|  | (0.001) | (0.001) | (0.001) | (0.001) |
| Rail access | -0.215 | 0.426 | -0.219 | 0.418 |
|  | (0.170) | (0.203) | (0.171) | (0.203) |
| Waterway access | 0.116 | 0.163 | 0.117 | 0.161 |
|  | (0.158) | (0.193) | (0.159) | (0.193) |
| Cotton Suitability | 2.614 | 2.286 | 2.584 | 2.304 |
|  | (0.730) | (0.930) | (0.728) | (0.930) |
| Terrain Ruggedness | -0.010 | -0.004 | -0.010 | -0.004 |
|  | (0.005) | (0.005) | (0.005) | (0.005) |
| Constant | -5.131 | -5.241 | -4.926 | -5.151 |
|  | (1.819) | (2.040) | (1.777) | (2.035) |
| lnalpha | 0.236 | -0.868 | 0.239 | -0.870 |
|  | (0.191) | (0.601) | (0.191) | (0.600) |
| State Fixed Effects | X | X | X | X |
| Observations | 1024 | 1019 | 1024 | 1019 |

Note: Negative binomial regression coefficients are reported. The dependent variable is the count of white-on-black lynchings in a county during that time period. We estimate the effect of changes in black literacy on white-on-black lynchings. State fixed effects are included in all models. Robust standard errors are reported.

## Table A.8: White-on-Black Lynching, OLS Regression

|  | (1) 1911-1920 | (2) 1921-1930 | (3) 1911-1920 | (4) 1921-1930 |
|---|---|---|---|---|
| $\Delta$ in Black Lit. 1910-1900 | 0.006 | | | |
|  | (0.004) | | | |
| $\Delta$ in Black Lit. 1920-1910 | | 0.002 | | |
|  | | (0.002) | | |
| Diff. $\Delta$ in Black and White Lit. 1910-1900 | | | -0.005 | |
|  | | | (0.004) | |
| Diff. $\Delta$ in Black and White Lit. 1920-1910 | | | | -0.002 |
|  | | | | (0.002) |
| Log of population | 0.094 | -0.031 | 0.092 | -0.031 |
|  | (0.056) | (0.031) | (0.056) | (0.031) |
| Prop. of slave | 0.709 | 0.359 | 0.701 | 0.359 |
|  | (0.281) | (0.143) | (0.287) | (0.143) |
| Prop. free black | -1.682 | -0.245 | -1.670 | -0.237 |
|  | (0.982) | (0.357) | (0.960) | (0.362) |
| Prop. of small farms | -0.418 | 0.059 | -0.413 | 0.060 |
|  | (0.286) | (0.115) | (0.285) | (0.116) |
| Total Improved acreage | 0.000 | 0.000 | 0.000 | 0.000 |
|  | (0.000) | (0.000) | (0.000) | (0.000) |
| Inequality of farm holdings | -0.284 | 0.329 | -0.284 | 0.327 |
|  | (0.445) | (0.261) | (0.451) | (0.261) |
| Total cash value of farm | -0.000 | 0.000 | -0.000 | 0.000 |
|  | (0.000) | (0.000) | (0.000) | (0.000) |
| Farm value per capita | 0.000 | 0.000 | 0.000 | 0.000 |
|  | (0.000) | (0.000) | (0.000) | (0.000) |
| Rail access | -0.164 | 0.074 | -0.166 | 0.074 |
|  | (0.123) | (0.075) | (0.124) | (0.075) |
| Waterway access | -0.042 | 0.022 | -0.041 | 0.021 |
|  | (0.079) | (0.025) | (0.080) | (0.025) |
| Cotton Suitability | 0.662 | 0.160 | 0.656 | 0.161 |
|  | (0.439) | (0.206) | (0.440) | (0.207) |
| Terrain Ruggedness | 0.000 | 0.000 | 0.000 | 0.000 |
|  | (0.001) | (0.000) | (0.001) | (0.000) |
| Constant | -0.615 | -0.019 | -0.573 | -0.014 |
|  | (0.531) | (0.181) | (0.528) | (0.180) |
| State Fixed Effects | X | X | X | X |
| Observations | 1032 | 1023 | 1032 | 1023 |

Note: OLS regression coefficients are reported. The dependent variable is the count of white-on-black lynchings in a county during that time period. We estimate the effect of changes in black literacy on white-on-black lynchings. State fixed effects are included in all models. Robust standard errors are reported.

Table A.9: White-on-Black Lynching, OLS Regression with Additional Controls

|  | (1) 1911-1920 | (2) 1921-1930 | (3) 1911-1920 | (4) 1921-1930 |
|---|---|---|---|---|
| $\Delta$ in Black Lit. 1910-1900 | 0.006 | | | |
|  | (0.003) | | | |
| $\Delta$ in Black Lit. 1920-1910 | | 0.002 | | |
|  | | (0.002) | | |
| Diff $\Delta$ in Black and Lit. 1910-1900 | | | -0.006 | |
|  | | | (0.004) | |
| Diff $\Delta$ in Black Lit. 1920-1910 | | | | -0.002 |
|  | | | | (0.002) |
| Electoral Competition 1908 | -0.001 | | -0.001 | |
|  | (0.005) | | (0.005) | |
| Electoral Competition 1920 | | 0.002 | | 0.002 |
|  | | (0.001) | | (0.001) |
| Log of population | 0.105 | -0.027 | 0.103 | -0.028 |
|  | (0.062) | (0.030) | (0.062) | (0.030) |
| Prop. of slave | 0.721 | 0.301 | 0.710 | 0.301 |
|  | (0.310) | (0.151) | (0.315) | (0.152) |
| Prop. free black | -2.259 | -0.283 | -2.276 | -0.274 |
|  | (1.295) | (0.374) | (1.277) | (0.379) |
| Prop. of small farms | -0.437 | 0.053 | -0.433 | 0.054 |
|  | (0.273) | (0.107) | (0.272) | (0.107) |
| Total Improved acreage | 0.000 | 0.000 | 0.000 | 0.000 |
|  | (0.000) | (0.000) | (0.000) | (0.000) |
| Inequality of farm holdings | -0.201 | 0.360 | -0.195 | 0.358 |
|  | (0.445) | (0.262) | (0.453) | (0.262) |
| Total cash value of farm | -0.000 | 0.000 | -0.000 | 0.000 |
|  | (0.000) | (0.000) | (0.000) | (0.000) |
| Farm value per capita | 0.000 | 0.000 | 0.000 | 0.000 |
|  | (0.000) | (0.000) | (0.000) | (0.000) |
| Rail access | -0.164 | 0.074 | -0.166 | 0.074 |
|  | (0.121) | (0.074) | (0.122) | (0.074) |
| Waterway access | -0.042 | 0.018 | -0.041 | 0.018 |
|  | (0.079) | (0.026) | (0.080) | (0.026) |
| Cottonsuitability | 0.676 | 0.158 | 0.671 | 0.159 |
|  | (0.445) | (0.201) | (0.446) | (0.202) |
| Terrain ruggedness | -0.000 | 0.000 | -0.000 | 0.000 |
|  | (0.001) | (0.000) | (0.001) | (0.000) |
| Constant | -0.722 | -0.084 | -0.688 | -0.080 |
|  | (0.607) | (0.209) | (0.604) | (0.208) |
| State Fixed Effects | X | X | X | X |
| Observations | 1024 | 1019 | 1024 | 1019 |

Note: Negative binomial regression coefficients are reported. The dependent variable is the count of white-on-black lynchings in a county during that time period. We estimate the effect of changes in black literacy on white-on-black lynchings. State fixed effects are included in all models. Robust standard errors are reported.

Table A.10: Difference-in-Differences: White-on Black Lynching

|  | (1) 10 years | (2) 20 years | (3) 50 years |
|---|---|---|---|
| Time | 0.171 | 1.224 | 1.939 |
|  | (0.246) | (0.209) | (0.212) |
| Troop Presence | -0.164 | -0.248 | -0.318 |
|  | (0.312) | (0.300) | (0.307) |
| Time × Troop Presence | 0.739 | 0.645 | 0.513 |
|  | (0.366) | (0.314) | (0.310) |
| Freedmen's Bureau | 0.307 | 0.202 | 0.105 |
|  | (0.315) | (0.324) | (0.331) |
| Time × Freedmen's Bureau | -0.093 | 0.005 | -0.019 |
|  | (0.372) | (0.344) | (0.340) |
| Log of Population | 0.639 | 0.599 | 0.665 |
|  | (0.178) | (0.130) | (0.114) |
| Prop. of small farms | 0.596 | 0.228 | 0.080 |
|  | (0.498) | (0.446) | (0.408) |
| Total improved acreage | -0.000 | -0.000 | -0.000 |
|  | (0.000) | (0.000) | (0.000) |
| Total cash value of farm | -0.000 | -0.000 | -0.000 |
|  | (0.000) | (0.000) | (0.000) |
| Farm value per improved acre 1860 | -0.003 | 0.002 | 0.002 |
|  | (0.004) | (0.003) | (0.003) |
| Inequality of farm holdings 1860 | -1.890 | -0.207 | -0.101 |
|  | (1.084) | (0.736) | (0.683) |
| Prop. of slave 1860 | 2.012 | 1.375 | 1.644 |
|  | (0.593) | (0.378) | (0.315) |
| Prop. free black 1860 | -6.908 | -2.535 | -4.376 |
|  | (3.891) | (2.996) | (2.712) |
| Rail access 1860 | -0.246 | -0.283 | -0.228 |
|  | (0.188) | (0.131) | (0.105) |
| Waterway access 1860 | -0.620 | -0.456 | -0.244 |
|  | (0.178) | (0.130) | (0.112) |
| Cotton Suitability 1860 | 3.602 | 2.384 | 2.022 |
|  | (0.723) | (0.498) | (0.426) |
| Terrain Ruggedness | 0.000 | -0.001 | -0.003 |
|  | (0.003) | (0.002) | (0.002) |
| Constant | -9.890 | -8.483 | -8.725 |
|  | (1.799) | (1.226) | (1.062) |
| lnalpha | 1.434 | 0.675 | 0.334 |
|  | (0.141) | (0.127) | (0.122) |
| State Fixed Effects | X | X | X |
| Observations | 2076 | 2076 | 2076 |

Note: Negative binomial coefficients are reported. The dependent variable is the number of lynchings during the Reconstruction during time 0 and either 10, 20, or 50 years after Reconstruction during time 1. State fixed effects are included and robust standard errors are reported.

Table A.11: Difference-in-Difference Estimates for County-Level Counts of White-on-Black Lynchings

| Troop Presence | No Troops | Troops | No Troops | Troops | No Troops | Troops |
|---|---|---|---|---|---|---|
| Reconstruction | 0.21 | 0.18 | 0.24 | 0.18 | 0.28 | 0.20 |
| | (0.13, 0.29) | (0.09, 0.27) | (0.16, 0.32) | (0.10, 0.27) | (0.18, 0.37) | (0.10, 0.30) |
| 10 years | 0.24[a] | 0.43[a] | | | | |
| | (0.18, 0.31) | (0.27, 0.56) | | | | |
| 20 years | | | 0.81[b] | 1.20[b] | | |
| | | | (0.66, 0.95) | (0.95, 1.45) | | |
| 50 years | | | | | 1.90[c] | 2.31[c] |
| | | | | | (1.61, 2.20) | (1.94, 2.68) |

*Note*: The 95% confidence intervals of the predicted count of white-on-Black lynching are displayed. Each column represents a different difference-in-difference model. a. The probability (i.e. p-value) the these predicted values are statistically the same is 0.03. b: The probability the these estimates are the same is 0.005. c: The probability that these estimates are the same is 0.06.

In our theory, we argued that social out-groups institutionalized revolutionary programs in communal institutions and networks. As discussed in the qualitative section, in the Black community, churches often worked aside Union troops to help implement revolutionary programs during Reconstruction during which time they served as communal focal points, preserving and institutionalizing gains from revolutionary programs. After Reconstruction, segregation spread across the South such that church membership was tightly linked to race, so churches effectively came to represent a communal organization tied to social group status. If churches served as points of communal networks for social out-groups specifically that preserved the gains of revolutionary programs over the long-term, we should therefore expect that places with more churches for Black congregants would have higher rates of Black literacy compared to places with fewer Black churches, even when accounting for the size of the total Black population in a county. Furthermore, because Black churches sustain social transformation as described in the theory, we would also expect places with Black churches to have higher rates of white-on-Black lynching once again accounting for Black population size.

To test this implication, we use our cross-sectional dataset replicate the same analysis in Stage 2 (Table 4) but we replace explanatory variables related to Reconstruction—Union troops as a percent of population, Months of Troop Presence, and Freedmen's Bureaus—with a variable for the count of Black churches measured in 1890, the only year for which data on churches by race is available.[42] We report the relationship between the count of Black churches and Black literacy rates in 1900, 1910 and 1920 in Appendix Table A.13. We then replicate the same analysis in Stage 3 (Table A.8) but once again replace explanatory variables related to Reconstruction with a count of Black churches. Appendix Table A.14 reports the relationship between the count of Black churches and the count of white-on-Black lynchings from 1901-1911, 1911-1920 and 1921-1930. Results in both Appendix Tables A.13 and A.14 are consistent with expectations and generally statistically significant: counties with more Black churches in 1890 have both higher literacy rates and higher rates of white-on-Black lynching after 1890.

Finally, an additional measure of social transformation is Black economic advancement. Data on economic factors by race, such as land ownership, is not widely available during this time period (Margo 1984, 1990). Instead, as a robustness check, we use the same modeling strategy in Stage 2 to estimate the effects of revolutionary programs using data from the 1940 census on median Black wages, the only census year for which data are available. Appendix Table A.15 reports the results. As an additional test, we use Union troops per square mile (Model 2) instead of Union troops as a percent of population (Model 1) to estimate the effect of troops on wages. All results are consistent with expectations.

Table A.12: Number of Black Churches

|  | Mean | Std. Dev | N |
|---|---|---|---|
| Churches | 15.6 | 17.1 | 1,036 |

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[42]Summary statistics of this measure can be found in Appendix Table A.12.

Table A.13: Black Churches and Black Literacy

|                            | (1) 1900 | (2) 1910 | (3) 1920 |
|----------------------------|----------|----------|----------|
| Black Church               | -0.029   | 0.024    | 0.038    |
|                            | (0.028)  | (0.012)  | (0.021)  |
| Log of population          | 2.845    | 0.634    | 0.214    |
|                            | (0.780)  | (0.761)  | (1.068)  |
| Prop. of slave             | -14.680  | -11.113  | -15.111  |
|                            | (3.656)  | (1.938)  | (3.387)  |
| Prop. free black           | 4.023    | -7.469   | -27.297  |
|                            | (11.411) | (9.555)  | (9.534)  |
| Prop. of small farms       | 1.397    | -1.091   | 2.120    |
|                            | (4.072)  | (1.848)  | (4.203)  |
| Total Improved acreage     | -0.000   | -0.000   | -0.000   |
|                            | (0.000)  | (0.000)  | (0.000)  |
| Inequality of farm holdings| 3.913    | 1.794    | 1.838    |
|                            | (7.413)  | (2.343)  | (5.065)  |
| Total cash value of farm   | -0.000   | 0.000    | 0.000    |
|                            | (0.000)  | (0.000)  | (0.000)  |
| Farm value per capita      | 0.011    | -0.001   | -0.003   |
|                            | (0.003)  | (0.004)  | (0.004)  |
| Rail access                | 1.200    | 1.396    | 1.753    |
|                            | (0.373)  | (0.317)  | (0.363)  |
| Waterway access            | 1.639    | 1.022    | 1.296    |
|                            | (0.486)  | (0.361)  | (0.427)  |
| Cotton suitability         | 5.977    | 2.994    | 6.341    |
|                            | (4.656)  | (2.231)  | (3.814)  |
| Terrain ruggedness         | 0.014    | -0.003   | 0.002    |
|                            | (0.004)  | (0.009)  | (0.009)  |
| Constant                   | 39.358   | 72.388   | 72.143   |
|                            | (8.577)  | (8.033)  | (11.418) |
| State Fixed Effects        | X        | X        | X        |
| Observations               | 1034     | 1035     | 1023     |

Note: OLS regression coefficients are reported. The dependent variable is the literacy rate of the black population for that time period. Independent variables are from 1860. State fixed effects are included and robust standard errors are reported.

Table A.14: Black Churches and White-on-Black Lynching

|  | (1) 1901-1910 | (2) 1911-1920 | (3) 1921-1930 |
|---|---|---|---|
| Black church | 0.024 | 0.023 | 0.027 |
|  | (0.004) | (0.005) | (0.006) |
| Log of population | 0.102 | 0.257 | -0.275 |
|  | (0.155) | (0.153) | (0.189) |
| Prop. of slave | 0.530 | 0.057 | 0.788 |
|  | (0.663) | (0.766) | (0.919) |
| Prop. free black | -8.778 | -13.786 | -10.080 |
|  | (4.804) | (7.186) | (6.911) |
| Prop. of small farms | 0.480 | -0.847 | 0.409 |
|  | (0.672) | (0.817) | (0.870) |
| Total Improved acreage | -0.000 | 0.000 | -0.000 |
|  | (0.000) | (0.000) | (0.000) |
| Inequality of farm holdings | 0.639 | -0.980 | 1.306 |
|  | (1.186) | (1.332) | (1.534) |
| Total cash value of farm | -0.000 | -0.000 | -0.000 |
|  | (0.000) | (0.000) | (0.000) |
| Farm value per capita | 0.002 | 0.002 | 0.001 |
|  | (0.001) | (0.001) | (0.001) |
| Rail access | -0.064 | -0.174 | 0.473 |
|  | (0.161) | (0.175) | (0.203) |
| Waterway access | 0.163 | 0.100 | 0.198 |
|  | (0.147) | (0.160) | (0.201) |
| Cotton suitability | 0.053 | 2.118 | 2.185 |
|  | (0.697) | (0.678) | (0.883) |
| Terrain Ruggedness | -0.007 | -0.009 | -0.002 |
|  | (0.003) | (0.005) | (0.005) |
| Constant | -2.527 | -3.277 | -3.307 |
|  | (1.529) | (1.603) | (1.870) |
| lnalpha | 0.344 | 0.129 | -1.063 |
|  | (0.165) | (0.205) | (0.634) |
| State Fixed Effects | X | X | X |
| Observations | 1039 | 1039 | 1039 |

Note: Negative binomial regression coefficients are reported. The dependent variable is the count of white-on-black lynchings in a county during a period of time. Independent variables are from 1860. State fixed effects are included and robust standard errors are reported.

## Table A.15: Black Wages in 1940

|  | 1 | 2 |
| --- | --- | --- |
| Troops as % Population | 0.001 | |
| | (0.002) | |
| Troops sq. mile | | 0.015 |
| | | (0.006) |
| Freedmen's Bureau | 0.098 | 0.096 |
| | (0.020) | (0.020) |
| Duration of Presence | 0.001 | 0.001 |
| | (0.000) | (0.000) |
| Log of population | -0.002 | -0.003 |
| | (0.045) | (0.043) |
| Prop. of slave | -0.476 | -0.453 |
| | (0.290) | (0.294) |
| Prop. free black | -0.075 | -0.014 |
| | (0.860) | (0.854) |
| Prop. of small farms | 0.133 | 0.191 |
| | (0.211) | (0.224) |
| Total Improved acreage | -0.000 | -0.000 |
| | (0.000) | (0.000) |
| Inequality of farm holdings | 0.068 | 0.019 |
| | (0.361) | (0.359) |
| Total cash value of farm | 0.000 | 0.000 |
| | (0.000) | (0.000) |
| Farm value per capita | -0.000 | -0.000 |
| | (0.000) | (0.000) |
| Rail access | 0.075 | 0.072 |
| | (0.044) | (0.043) |
| Waterway access | 0.051 | 0.050 |
| | (0.060) | (0.061) |
| Cotton Suitability | -0.232 | -0.219 |
| | (0.278) | (0.273) |
| Terrain Ruggedness | 0.001 | 0.001 |
| | (0.002) | (0.002) |
| Constant | 5.791 | 5.752 |
| | (0.453) | (0.417) |
| State Fixed Effects | X | X |
| Observations | 814 | 810 |

Note: The dependent variable is median black wages in a county in 1940. Other than Reconstruction variables, independent variables are from 1860. State fixed effects are included and robust standard errors are reported.

# B   Data Appendix and Description of Lynching Data

To create the new dataset Auut Studio (2017) identified existing datasets on lynchings (including Black, white and non-white lynchings) and mob violence in the United States, synthesized them, and removed any duplicates. The individual works included in the Auut Studio (2017) dataset are listed below:

**Data sources for Auut Studio (2017):**

Barrow, Janice Hittinger. *History Lynching in the Mid-Atlantic, 1882-1940. American Nineteenth Century.* Routledge, 2005.

Brundage, William Fitzhugh. *Lynching in the New South: Georgia and Virginia, 1880-1930.* University of Illinois Press, 1993.

Carrigan, William D. *The making of a lynching culture: Violence and vigilantism in Central Texas, 1836-1916.* University of Illinois Press, 2004.

Carrigan, William D., and Clive Webb. *Forgotten Dead: Mob Violence Against Mexicans in the United States, 1848-1928.* Oxford University Press, 2013.

Equal Justice Initiative. *Lynching in America: Confronting the Legacy of Racial Terror,* Equal Justice Initiative, 2015.

Frazier, Harriet C. *Lynchings in Missouri, 1803-1981.* McFarland & Company, 2009.

Frazier, Harriet C. *Lynchings in Kansas, 1850s-1932.* McFarland & Company, 2015.

Gonzales-Day, Ken. *Lynching in the West, 1850-1935.* Duke University Press, 2006.

Hollars, B. J. *Thirteen Loops: Race, Violence, and the Last Lynching in America.* The University of Alabama Press, 2011.

Kiktode, Charles N. Clark. *Lynchings in Oklahoma 1830-1930.* Independent Publisher, 2008.

Leonard, Stephen J. *Lynching in Colorado, 1859-1919.* University Press of Colorado, 2002.

Loewen, James W. *Sundown Towns: A Hidden Dimension Of American Racism.* The New Press, 2005.

Nevels, Cynthia Skove. *Lynching to Belong: Claiming Whiteness Through Racial Violence.* Texas A&M University Press, 2007.

Newkirk, Vann R. *Lynching in North Carolina: A History, 1865-1941.* Jefferson, NC: McFarland & Company Inc, 2009.

Jean Pfaelzer. Driven Out: "The Forgotten War against Chinese Americans. New York: Random House. 2007. Pp. xxix, 400." *The American Historical Review.* 113.1 (2008): 191-192.

Pfeifer, Michael J. *Rough Justice: Lynching and American Society, 1847-1947.* Champaign-Urbana: University of Illinois Press, 2004.

Pfeifer, Michael J. "Wisconsin's Last Decade of Lynching, 1881-91: Law and Violence in the Postbellum Midwest." *American Nineteenth Century History.* 6.3 (2005): 227-239.

Pfeifer, Michael J., ed. *Lynching Beyond Dixie: American Mob Violence Outside the South.* University of Illinois Press, 2013.

Phillips, Patrick. *Blood at the Root: A Racial Cleansing in America.* WW Norton & Company, 2016.

Rushdy, Ashraf HA. *American Lynching.* Yale University Press, 2012.

Tolnay, Stewart Emory, and Elwood M. Beck. *A Festival of Violence: An Analysis of Southern Lynchings, 1882-1930.* University of Illinois Press, 1995.

Vyzralek, Frank E. "Murder in Masquerade: A Commentary on Lynching and Mob Violence in North Dakota's Past, 1882-1931." *North Dakota History* 57.1 (1990): 20-29.

Webb, Clive. "The Lynching of Sicilian Immigrants in the American South, 1886-1910." *American Nineteenth Century History.* 3.1 (2002): 45-76.

Wright, G.C. (1990). *Racial violence in Kentucky, 1865-1940: Lynchings, mob rule, and 'legal lynchings.'* Baton Rouge: Louisiana State University Press.