Online Appendix, "Slavery, Reconstruction, and Bureaucratic Capacity in the American South"

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Appendix

A. Supplementary Tables

Table S1: Summary Statistics: 1860 and 1870 Variables Interpolated to 1880 County Boundaries

	N	Mean	St. Dev.	Min	Max
Proportion enslaved 1860	914	0.34	0.22	0	0.92
Proportion slaveholders 1860	914	0.06	0.04	0	0.22
Proportion free Black 1860	914	0.01	0.02	0	0.25
Gini land 1860	902	0.34	0.14	0	0.73
Area sq. miles	914	703.91	742.80	32	12314
Total population 1860	914	9511.16	9071.69	42	174491
Farm value 1860	914	1947630	2119988	0	1.52e+07
Farm value 1870	914	1060333	1347950	0	1.22e+07
Occ. inequality	904	0.23	0.12	0	0.56
River access 1860	914	0.34	0.48	0	1
Rail access 1860	914	0.28	0.45	0	1
Fall in farm value 1860-1870	914	887296.9	1351562	-4708542	1.14e+07
County tax per capita 1870	912	1.18	1.47	0	15.93
County tax per capita 1880	912	0.85	0.65	0	8.92
Age heaping 1880 (Whipple index)	914	132.14	16.46	100.89	265.19
Govt employees per capita 1880	914	0	0	0	0.01

Note: Restricted to 11 Confederate states – Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia

Table S2: OLS Regressions of County Taxes on Racial Status (Assuming 6.6% 1870 Undercount)

	(1870)	(1880)	(1880-70)
	(1)	(2)	(3)
Proportion enslaved	0.102***	0.036	-0.085**
	(0.029)	(0.024)	(0.033)
Gini land inequality	0.003	-0.016	-0.014
	(0.023)	(0.019)	(0.026)
Area sq miles	-0.029	-0.033	-0.011
	(0.045)	(0.025)	(0.051)
Log population 1860	-0.053	-0.183***	-0.101**
	(0.038)	(0.029)	(0.044)
Free Blacks 1860	0.037	0.013	-0.008
	(0.027)	(0.020)	(0.030)
Farm value	0.062**	0.154***	0.080**
	(0.031)	(0.024)	(0.035)
River access	0.167***	0.110***	-0.050
	(0.048)	(0.039)	(0.055)
Rail access	0.163***	0.093**	-0.059
	(0.053)	(0.043)	(0.059)
Constant	-0.512***	-0.289***	0.253**
	(0.111)	(0.088)	(0.126)
Adj. R-squared	0.546	0.301	0.462
N	880	901	879
State fixed effects	✓	✓	✓
Continuous variables standardized. * $p < .10$, ** $p < .05$, *** $p < .01$			

Table S3: OLS Regressions of County Taxes on Racial Status (Assuming 10% 1870 Undercount)

	(1870)	(1880)	(1880-70)
	(1)	(2)	(3)
Proportion enslaved	0.094***	0.036	-0.077**
	(0.029)	(0.024)	(0.033)
Gini land inequality	0.003	-0.016	-0.014
	(0.023)	(0.019)	(0.026)
Area sq miles	-0.029	-0.033	-0.012
	(0.045)	(0.025)	(0.051)
Log population 1860	-0.054	-0.183***	-0.100**
	(0.038)	(0.029)	(0.044)
Free Blacks 1860	0.036	0.013	-0.007
	(0.027)	(0.020)	(0.030)
Farm value	0.063**	0.154***	0.080**
	(0.031)	(0.024)	(0.035)
River access	0.166***	0.110***	-0.050
	(0.048)	(0.039)	(0.055)
Rail access	0.163***	0.093**	-0.059
	(0.053)	(0.043)	(0.059)
Constant	-0.526***	-0.289***	0.267**
	(0.111)	(0.088)	(0.126)
Adj. R-squared	0.544	0.301	0.461
N	880	901	879
State fixed effects	✓	✓	✓
Continuous variables standardized. * $p < .10$, ** $p < .05$, *** $p < .01$			

Table S4: County Taxes and Racial Status (White Population as Denominator)

	(1870)	(1880)	(1880-70)
	(1)	(2)	(3)
Proportion enslaved	0.490***	0.421***	-0.091***
	(0.031)	(0.026)	(0.034)
Gini land inequality	-0.012	-0.031	-0.014
	(0.024)	(0.020)	(0.026)
Area sq miles	-0.053	-0.035	-0.017
	(0.047)	(0.027)	(0.051)
Log population 1860	-0.047	-0.186***	-0.115**
	(0.040)	(0.031)	(0.045)
Free Blacks 1860	0.074***	0.050**	-0.004
	(0.028)	(0.022)	(0.031)
Farm value	0.099***	0.202***	0.097***
	(0.032)	(0.027)	(0.035)
River access	0.201***	0.166***	-0.024
	(0.051)	(0.043)	(0.055)
Rail access	0.154***	0.107**	-0.033
	(0.055)	(0.047)	(0.060)
Constant	0.017	0.205**	0.238*
	(0.117)	(0.096)	(0.127)
Adj. R-squared	0.663	0.533	0.444
N	880	901	879
State fixed effects	✓	✓	✓
Continuous variables standardized. * $p < .10$, ** $p < .05$, *** $p < .01$			

Table S5: OLS Regressions of County Taxes on Racial Status (North)

	(1870)	(1880)	(1880-70)
	(1)	(2)	(3)
Free Blacks 1860	-0.007	0.029	0.033
	(0.029)	(0.022)	(0.030)
Gini land inequality	-0.018	-0.009	0.002
	(0.029)	(0.022)	(0.031)
Area sq miles	-0.044	-0.018	0.013
	(0.029)	(0.021)	(0.030)
Log population 1860	-0.100**	-0.120***	0.030
	(0.046)	(0.034)	(0.050)
Farm value	0.076**	0.083***	-0.011
	(0.038)	(0.028)	(0.040)
River access	0.120*	0.079*	-0.020
	(0.062)	(0.046)	(0.065)
Rail access	-0.024	-0.051	-0.041
	(0.065)	(0.048)	(0.068)
Constant	-2.997***	-2.923***	-1.295***
	(0.289)	(0.146)	(0.350)
Adj. R-squared	0.505	0.630	0.121
N	536	540	533
State fixed effects	✓	✓	✓
Continuous variables standardized. * $p < .10$, ** $p < .05$, *** $p < .01$			

Table S6: OLS Regressions of County Taxes on Racial Status (No Arkansas)

	(1870)	(1880)	(1880-70)
	(1)	(2)	(3)
Proportion enslaved	0.096***	0.021	-0.091***
	(0.030)	(0.025)	(0.034)
Gini land inequality	0.002	-0.019	-0.017
	(0.024)	(0.019)	(0.026)
Area sq miles	-0.027	-0.032	-0.009
	(0.046)	(0.025)	(0.051)
Log population 1860	-0.046	-0.174***	-0.099**
	(0.039)	(0.029)	(0.045)
Free Blacks 1860	0.040	0.015	-0.009
	(0.027)	(0.020)	(0.030)
Farm value	0.060*	0.153***	0.082**
	(0.031)	(0.024)	(0.035)
River access	0.164***	0.100**	-0.057
	(0.052)	(0.041)	(0.057)
Rail access	0.173***	0.096**	-0.067
	(0.053)	(0.042)	(0.059)
Constant	-0.670***	-0.846***	-0.185
	(0.118)	(0.093)	(0.132)
Adj. R-squared	0.447	0.319	0.369
N	809	827	808
State fixed effects	✓	✓	✓
Continuous variables standardized. * $p < .10$, ** $p < .05$, *** $p < .01$			

Table S7: OLS Regressions of County Taxes on Racial Status (No Texas)

	(1870)	(1880)	(1880-70)
	(1)	(2)	(3)
Proportion enslaved	0.138***	0.059**	-0.101***
	(0.031)	(0.025)	(0.035)
Gini land inequality	-0.018	-0.026	-0.008
	(0.028)	(0.022)	(0.032)
Area sq miles	-0.057	-0.028	0.016
	(0.049)	(0.039)	(0.055)
Log population 1860	0.032	-0.106***	-0.088
	(0.048)	(0.040)	(0.056)
Free Blacks 1860	0.028	0.014	-0.008
	(0.027)	(0.022)	(0.031)
Farm value	0.033	0.121***	0.072*
	(0.033)	(0.026)	(0.037)
River access	0.194***	0.130***	-0.056
	(0.052)	(0.041)	(0.058)
Rail access	0.120**	0.049	-0.066
	(0.055)	(0.044)	(0.062)
Constant	-0.727***	-0.244***	0.222*
	(0.119)	(0.092)	(0.131)
Adj. R-squared	0.513	0.300	0.327
N	754	760	753
State fixed effects	✓	✓	✓
Continuous variables standardized. * $p < .10$, ** $p < .05$, *** $p < .01$			

Table S8: OLS Regressions of County Taxes on Racial Status (No Arkansas, No Texas)

	(1870)	(1880)	(1880-70)
	(1)	(2)	(3)
Proportion enslaved	0.114***	0.043*	-0.091**
	(0.033)	(0.026)	(0.037)
Gini land inequality	-0.020	-0.030	-0.012
	(0.029)	(0.023)	(0.033)
Area sq miles	-0.052	-0.022	0.018
	(0.050)	(0.038)	(0.056)
Log population 1860	0.039	-0.089**	-0.076
	(0.051)	(0.040)	(0.058)
Free Blacks 1860	0.030	0.016	-0.008
	(0.028)	(0.021)	(0.031)
Farm value	0.031	0.119***	0.070*
	(0.034)	(0.026)	(0.038)
River access	0.194***	0.122***	-0.064
	(0.056)	(0.043)	(0.062)
Rail access	0.129**	0.049	-0.076
	(0.056)	(0.043)	(0.062)
Constant	-0.414***	-0.895***	0.234*
	(0.118)	(0.092)	(0.132)
Adj. R-squared	0.398	0.321	0.177
N	683	686	682
State fixed effects	✓	✓	✓
Continuous variables standardized. * $p < .10$, ** $p < .05$, *** $p < .01$			

Table S9: OLS Regressions of Taxation/Bureaucratic Quality 1880 on Racial-status and Intra-white Inequality

	Per Capita Taxation			*Bureaucratic Quality 1880*	
	(1870)	(1880)	(1880-70)	(Age Heaping)	(Govt. Employ.)
	(1)	(2)	(3)	(4)	(5)
Proportion enslaved	0.144***	0.141***	-0.006	0.971	0.048
	(0.054)	(0.044)	(0.061)	(1.214)	(0.051)
Occupational inequality	0.068	0.125***	0.085	-1.681	0.058
	(0.049)	(0.039)	(0.055)	(1.257)	(0.048)
Prop. enslaved x occup. inequality	-0.063	-0.183***	-0.154*	1.480	-0.181**
	(0.074)	(0.060)	(0.084)	(1.648)	(0.070)
Age heaping 1850				1.780**	
				(0.825)	
Government employment 1850					0.100***
					(0.022)
Adj. R-squared	0.552	0.309	0.464	0.329	0.194
N	884	903	883	904	856
State fixed effects	✓	✓	✓	✓	✓
Controls: area, population, free Black, farm value, river access, and rail access					
Continuous variables standardized. * $p < .10$, ** $p < .05$, *** $p < .01$					

Table S10: OLS Regressions of Taxation/Bureaucratic Quality 1880 on Racial-status and Intra-white Inequality (Without Extreme Values of Prop. Enslaved)

	Per Capita Taxation			*Bureaucratic Quality 1880*	
	(1870)	(1880)	(1880-70)	(Age Heaping)	(Govt. Employ.)
	(1)	(2)	(3)	(4)	(5)
Proportion enslaved	0.154**	0.109**	-0.046	1.752	0.061
	(0.062)	(0.051)	(0.070)	(1.217)	(0.061)
Occupational inequality	0.095*	0.127***	0.057	-1.228	0.093*
	(0.053)	(0.043)	(0.059)	(1.163)	(0.053)
Prop. enslaved x occup. inequality	-0.105	-0.178**	-0.108	1.405	-0.255***
	(0.090)	(0.074)	(0.101)	(1.759)	(0.088)
Age heaping 1850				2.210***	
				(0.737)	
Government employment 1850					0.136***
					(0.027)
Adj. R-squared	0.537	0.254	0.474	0.305	0.205
N	817	829	816	830	790
State fixed effects	✓	✓	✓	✓	✓
Continuous variables standardized. * $p < .10$, ** $p < .05$, *** $p < .01$					

Table S11: OLS Regressions of Taxation/Bureaucratic Quality 1880 on Racial-status and Land Inequality

	Per Capita Taxation			*Bureaucratic Quality 1880*	
	(1870)	(1880)	(1880-70)	(Age Heaping)	(Govt. Employ.)
	(1)	(2)	(3)	(4)	(5)
Proportion enslaved	0.182***	0.088*	-0.096	-0.633	-0.041
	(0.057)	(0.046)	(0.065)	(1.251)	(0.053)
Gini land inequality	0.049	0.020	-0.012	-2.609***	-0.025
	(0.042)	(0.033)	(0.047)	(0.920)	(0.040)
Prop. enslaved x land inequality	-0.087	-0.069	-0.004	3.303**	-0.048
	(0.066)	(0.053)	(0.074)	(1.453)	(0.062)
Age heaping 1850				1.177*	
				(0.609)	
Government employment 1850					0.100***
					(0.020)
Adj. R-squared	0.550	0.301	0.465	0.339	0.217
N	880	901	879	897	855
State fixed effects	✓	✓	✓	✓	✓
Continuous variables standardized. * $p < .10$, ** $p < .05$, *** $p < .01$					

Table S12: OLS Regressions of Taxation/Bureaucratic Quality 1880 on Racial Status and Proportion No Real Property

	Per Capita Taxation			*Bureaucratic Quality 1880*	
	(1870)	(1880)	(1880-70)	(Age Heaping)	(Govt. Employ.)
	(1)	(2)	(3)	(4)	(5)
Proportion enslaved	0.061	0.069	0.005	2.146*	0.102*
	(0.063)	(0.051)	(0.072)	(1.297)	(0.060)
Proportion no property	-0.016	0.020	0.055	-0.882	0.086**
	(0.043)	(0.035)	(0.048)	(1.019)	(0.040)
Prop. enslaved x prop. no property	0.074	-0.035	-0.130	-0.412	-0.215***
	(0.072)	(0.059)	(0.081)	(1.480)	(0.067)
Age heaping 1850				3.362***	
				(0.849)	
Government employment 1850					0.109***
					(0.021)
Adj. R-squared	0.548	0.295	0.453	0.297	0.217
N	875	891	874	886	859
State fixed effects	✓	✓	✓	✓	✓
Continuous variables standardized. * $p < .10$, ** $p < .05$, *** $p < .01$					

Table S13: OLS Regressions of Taxation/Bureaucratic Quality 1880 on Racial-status (Proportion Slaveholders) and Intra-white Inequality

	Per Capita Taxation			*Bureaucratic Quality 1880*	
	(1870)	(1880)	(1880-70)	(Age Heaping)	(Govt. Employ.)
	(1)	(2)	(3)	(4)	(5)
Proportion slaveholders	0.125**	0.135***	0.000	-0.102	0.051
	(0.060)	(0.048)	(0.067)	(1.335)	(0.056)
Occupational inequality	0.078*	0.124***	0.062	-1.120	0.039
	(0.046)	(0.036)	(0.052)	(1.178)	(0.044)
Prop slaveholders x occup. inequality	-0.069	-0.190***	-0.136	1.576	-0.169**
	(0.077)	(0.062)	(0.087)	(1.712)	(0.072)
Age heaping 1850				1.549*	
				(0.823)	
Government employment 1850					0.102***
					(0.021)
Adj. R-squared	0.550	0.307	0.463	0.325	0.194
N	884	903	883	904	856
State fixed effects	✓	✓	✓	✓	✓
Continuous variables standardized. * $p < .10$, ** $p < .05$, *** $p < .01$					

Table S14: OLS Regressions of Taxation/Bureaucratic Quality 1880 on Racial-status (Proportion Slaveholders) and Land Inequality

	Per Capita Taxation			*Bureaucratic Quality 1880*	
	(1870)	(1880)	(1880-70)	(Age Heaping)	(Govt. Employ.)
	(1)	(2)	(3)	(4)	(5)
Proportion slaveholders	0.154***	0.046	-0.110	-1.250	-0.018
	(0.059)	(0.048)	(0.067)	(1.307)	(0.055)
Gini land inequality	0.044	-0.002	-0.032	-2.463***	-0.016
	(0.042)	(0.034)	(0.047)	(0.926)	(0.040)
Prop. slaveholders x land inequality	-0.077	-0.027	0.032	3.145**	-0.070
	(0.069)	(0.056)	(0.077)	(1.515)	(0.064)
Age heaping 1850				1.295**	
				(0.611)	
Government employment 1850					0.099***
					(0.020)
Adj. R-squared	0.547	0.299	0.464	0.335	0.217
N	880	901	879	897	855
State fixed effects	✓	✓	✓	✓	✓
Continuous variables standardized. * $p < .10$, ** $p < .05$, *** $p < .01$					

Table S15: OLS Regressions of Taxation/Bureaucratic Quality 1880 on Racial Status (Proportion Slaveholders) and Proportion No Real Property

	Per Capita Taxation			*Bureaucratic Quality 1880*	
	(1870)	(1880)	(1880-70)	(Age Heaping)	(Govt. Employ.)
Proportion slaveholders	0.041	0.052	0.003	1.153	0.089
	(0.068)	(0.055)	(0.076)	(1.386)	(0.064)
Proportion no property	-0.011	0.023	0.046	-1.185	0.070*
	(0.043)	(0.035)	(0.048)	(1.032)	(0.040)
Prop. slaveholders x prop. no property	0.065	-0.043	-0.118	-0.111	-0.194***
	(0.078)	(0.063)	(0.087)	(1.584)	(0.072)
Age heaping 1850				0.078***	
				(0.018)	
Government employment 1850					0.109***
					(0.021)
Constant	-0.457***	-0.856***	0.195	128.584***	-8.199***
	(0.113)	(0.095)	(0.127)	(3.326)	(0.107)
Adj. R-squared	0.545	0.293	0.453	0.292	0.214
N	875	891	874	886	859
State fixed effects	✓	✓	✓	✓	✓
Continuous variables standardized. * $p < .10$, ** $p < .05$, *** $p < .01$					

Table S16: Correlation Between Measures of Intra-white Inequality and Proportion Enslaved

	Occupational Gini	Land Gini	Percent No Assets	Prop. Enslaved	Prop. Slaveholders
Occupational gini	1.0000				
Land gini	0.0.3620	1.0000			
Percent no real assets	0.6817	0.3234	1.0000		
Prop enslaved	0.5380	0.1376	0.1279	1.0000	
Prop slaveholder	0.5437	0.1495	0.1421	0.9389	1.0000

Table S17: Age Heaping by Enumerator Districts 1880 (Whites Only)

	(1)	(2)	(3)	(4)
Proportion Black	16.021***	16.021***	8.461***	8.461**
	(1.145)	(4.729)	(1.244)	(3.838)
Constant	132.213***	132.213***	143.736***	143.736***
	(0.495)	(2.640)	(1.297)	(5.239)
Adj. R-squared	0.029	0.029	0.084	0.084
N	6616	6616	6616	6616
State fixed effects			✓	✓
County-clustered errors		✓		✓
Continuous variables standardized. * $p < .10$, ** $p < .05$, *** $p < .01$				

B. Supplementary Figures

Figure S1: Two Measures of Bureaucratic Quality: Age Heaping and Government Employees Against County Taxes 1880

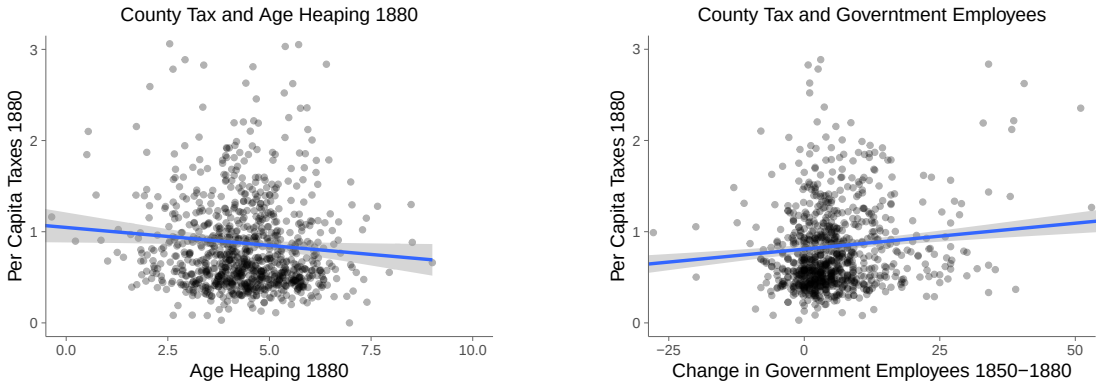


Figure S2: Marginal Effect of Intra-white Land Inequality on Measures of Taxation and Bureaucratic Quality

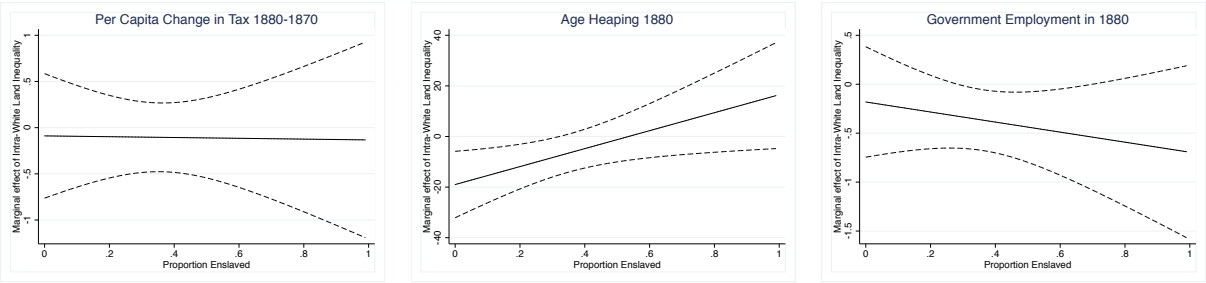
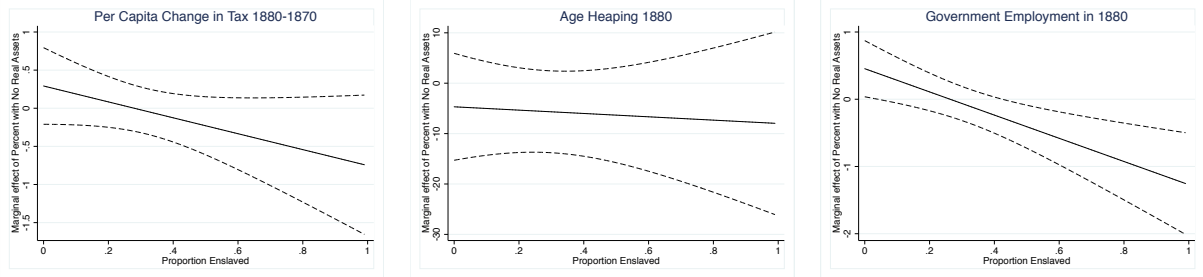


Figure S3: Marginal Effect of Intra-white Asset Ownership on Measures of Taxation and Bureaucratic Quality



C. Addressing County Boundary Change

There are several ways to adjust historical county boundaries to match later boundaries. One, used by O'Connell (2012), uses population weights. A second, used by Acharya et al. (2016b), uses areal weighting to interpolate historical county-level data onto later county boundaries. Both authors use proportion enslaved in 1860 adjusted to 2000 boundaries as their main variable of interest and the results are strikingly similar: As Acharya et al. (2018: 219) note, the two measures are correlated at .986.

We follow the Acharya et al. (2016b, 2018) areal weighting protocol, which operates in the following way:

> For a given census year, we create a n_s x n_t matrix A, where n_s is the number of source (1860) counties and n_t is the number of target (2000) counties. A is a row-normalized matrix, where each entry a_{ij} is the proportion of the area of source county i that is contained in target county j. We follow O'Connell (2012) and set $a_{ij} = 1$ and $a_{ij'} = 0$ if more than 95% of an 1860 county is contained in a single 2000 county. Let y_t be the vector of target values that we are trying to estimate and y_s be the observed source vector of values. Then, we construct areal weighted estimated by $y_t = A'y_s$. Essentially, this distributed the population in each 1860 county is distributed to 2000 counties based on how much of the 1860 county is contained in the 2000 county. (Acharya et al. 2016a: 1)

Since we are not exploring legacy effects into the twenty-first century, however, we use 1880 county boundaries rather than 2000 county boundaries as our target. Otherwise,

we follow the Acharya et al. approach using replication files available on the article's Dataverse page:

https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/CAEEG7.

Following Acharya et al's work, our measures of rivers and railways come from Atack (2015a, 2015b).

D. State-level County Taxation Patterns

The maps in the main text (Figures 1 and 2) indicate that 1870 county taxes were especially high in Mississippi, Louisiana, and Arkansas, and that these states also saw especially large decreases by 1880. In this section, we present qualitative evidence that can help make at least partial sense of these patterns by providing additional case-specific details.

In Mississippi, the 1870 Revenue Act set the structure of Reconstruction-era taxation for the state. Along with raising rates, the state government also changed the way real estate values were assessed: previously this had been done by owners, but this was changed to a county assessor that would, at least for a time, be appointed by Republicans (Harris 1979, 295). Along with state taxes, Mississippi Republicans moved to allow county-level officials to enact county taxes for local public works needs (Ibid., 298). The main Dunning School account of Mississippi draws attention to this: "The law allowed the county board of supervisors to levy a tax exclusively for county purposes... In every county, with half a dozen exceptions, the limit was reached, and it appears to have been exceeded in more than thirty instances" (Garner 1901, 311-312). After returning to power in the mid-1870s, Democrats cut property taxes and restricted the authority of county-level officials to enact taxes. They also worked to reduce spending, including cutting salaries of state officials, reducing costs associated with the state judicial system, and undermining public education by cutting the salaries of teachers and county superintendents, as well as preventing county officials from using funds for certain additional educational expenses (Harris 1979, 702-705).

A similar story unfolded in Louisiana, which was described with some sympathy to the white elite by this 1937 historical account:

> From the election of Governor Henry C. Warmoth in 1868 to the downfall of Governor Stephen B. Packard in 1877, the tax rate doubled, and at its peak amounted to 21 1/2 mills. While the value of property had been reduced nearly by half, individual taxes almost doubled... Their desperate situation was revealed by the constitutional convention of 1879, whose delegates complained that the landed interests had been nearly taxed out of existence...The temper of outraged landlords found vent in many economic safeguards of the new constitution. Delinquent taxpayers were granted relief, the legislature was forbidden to contract future debts except to suppress insurrection, and the ordinary tax rate was reduced to six mills. (Shugg 1937, 317-18)

While Mississippi and Louisiana are most representative of our argument (the average county in these states was 52 and 55 percent enslaved, respectively, in 1860), Arkansas (where the average county was 22 percent enslaved) is a somewhat more curious case. There is, though, still qualitative evidence to suggest that taxes rose substantially in the state during this time period. Starting in 1868, Arkansas Republicans moved to create a public school system and begin other public works programs. To pay for this, they raised state taxes and allowed counties to implement a county tax equivalent to the state tax amount (Moneyhon 1994, 250). By the end of the decade, state expenditures were approximately $2 million per year, compared to only about $100,000 per year prewar. Over the next couple of years, the government continued to raise taxes as well as increase the maximum tax rate allowable for counties (Ibid., 253).

The main Dunning School text on Arkansas goes into detail on the taxation in this era, calling it "exceedingly heavy" and noting the authorization for county taxation increases (Staples 1923, 356). In 1874, Democrats won the election and soon moved to cut taxes and reduce expenses (Ibid., 263). One likely relevant quirk of Arkansas history is the immensely contentious debate over the Holford bonds, which Reconstruction era governments moved to pay down and Democrats later moved to repudiate (Bayliss 1964, Thompson 1969, Moneyhon 1994).

While our quantitative results are consistent with qualitative evidence, we acknowledge that the particular pattern we present is inevitably a function of the snapshot nature of the decennial data (i.e., these states might have had higher taxes in 1870, but not necessarily in 1868 or 1872). In South Carolina, for example, taxation peaked in the aggregate towards the middle of the 1870s (Williamson 1965, 158). While our map does show clusters of high county taxes in South Carolina, it is possible that more might show up were the data collected a few years later. Our models include state fixed effects, however, so such state-specific peculiarities are not driving our results.

The relatively low taxes in Georgia (where the average county was 39 percent enslaved in 1860) might seem curious at first glance, but historical accounts indicate that this is an accurate representation of how Reconstruction proceeded there rather than a quirk of the data (Franklin 1961, 142). "Georgia's Reconstruction was unique," Thornton argues (1982, 389). Republican politicians in that state did not significantly alter self-assessment provisions in the state's preexisting tax laws. They did pass public schooling legislation that would have likely required a significant increase in taxation, but Democrats returned to the legislature and weakened the law before it actually went into effect. While Georgia's fiscal patterns resembled other Southern states before the war, "their course after the war is sui generous" (Ibid.)

E. Additional Census Material

Census Enumeration Instructions

The instructions provided to marshals/supervisors and enumerators provide some insight into how Census officers aimed to produce valid results. Marshals were encouraged to appoint "judicious, temperate, reliable, intelligent, and active men" (1860) and given discretion to fire assistants if needed. Enumerators were given instructions on how to deal with potentially uncooperative subjects. In 1860, for instance, enumerators were told, "If

any person to whom application is made for information should refuse to give it, or should designedly make false representations, you should inform him of the responsibility he incurs thereby, and the penalty to which he becomes liable under the 15th section of the law" (1860). In 1870, enumerators were given similar instructions, but also encouraged to "make as little show as possible of authority" and "approach every individual in a conciliatory manner; respect the prejudices of all; adapt their inquiries to the comprehension of foreigners and persons of limited education; and strive in every way to relieve the performance of their duties from the appearance of obtrusiveness" (1870). While it is likely that many white Southerners were leery of federal oversight during Reconstruction, it is clear that the Census office was aware of this and trying to work around it as much as possible.

By 1880, this section became much more extensive, perhaps reflecting the more general updating of Census administration with the 1879 law. Enumerators were told it was "not within the choice of any inhabitant of the United States whether he shall or shall not communicate the information required by the census law" and a description of the penalty provide by the 1879 legislation was provided. Enumerators were encouraged, however, to "do well not unnecessarily to obtrude the compulsory feature of the enumeration." They were told it "is only where information required by law is refused that penalties for non-compliance need be adverted to. The enumerator will then, quietly but firmly, point out the consequences of persistency in refusal." Enumerators were also told that they were "not required to accept answers which he knows, or has reason to believe, are false. He has a right to a true statement on every matter respecting which he is bound to inquire; and he is not concluded by a false statement. Should any person persist in making statements which are obviously erroneous, the enumerator should enter upon the schedule of facts as nearly as he can ascertain them by his own observation or by inquiry of credible persons" (1880).

Role of Census Enumerators

Before the Civil War, census operations were carried out under a protocol established by congressional legislation in 1850.[1] Although this legislation improved the census machinery relative to early efforts, anecdotal evidence from contemporaneous observers indicates that there was likely discretion at the level of enumerators. In his 1856 guide to the Southern states, for example, Frederick Olmsted described 1850 census marshals there as "generally excessively lazy, and neglectful of their duty, among that class which was most ignorant or indifferent on the subject." He also described seeing "an advertisement of a deputy census marshal, in Alabama or Georgia, announcing that he would be at a certain tavern in his district, on a certain day, for the purpose of receiving from the people of the vicinity—who were requested to call upon him—the information it was his duty to obtain from them" (McClelland and Zeckhauser 1982, 2-3).

The post-Civil War 1870 enumeration process was heavily contested in political discourse at the time. Some accounts suggest it was a good faith effort despite protocols that were outdated by then, while other accounts paint a picture of Radical Republican excess common to white critiques of Reconstruction-era policies more generally.[2] Negative

[1]This legislation shifted responsibility for the census to the Department of the Interior, created six census schedules (free population, enslaved population, mortality, agriculture, industry, and social statistics), and established clearer rules for the federal marshals in charge of implementing the census and the enumerators whom they hired. These "radical changes in the method and scope" of the 1850 census "constituted an epoch in the history of census-taking in this country" (Wright 1900, 47).

[2]During Reconstruction, many census officials viewed the 1850 legislation as in need of updating. Prior to the 1870 enumeration, a committee in the House of Representatives released a report explaining how Congress might act to improve census administration. A bill to do so was passed by the House, but ultimately rejected in the Senate, meaning that the 1870 census would be administered under the old law.

accounts often veered into racist language. Despite arguing that the 1870 census was well-executed overall compared to previous efforts, Walker described enumeration in the Southern states that year as being done by "Northern men unacquainted with the country" and "ignorant, incompetent colored men" who "turned their work over to mean whites of more clerical ability and went shares on the pay" (Magnuson 1995).[3] William Aiken, who served as Governor of South Carolina in the 1840s, put it more bluntly, writing that the Reconstruction-era Southern enumerators were "a set of blackguards. Many of them were negroes, and not even respectable colored men, but the most ignorant fellows...that could be scraped together" (Ibid.).

After Reconstruction ended, national legislation was designed to strengthen census operations. In 1879, congressional legislation was passed so that the 1880 census would be administered under a new law. Enumeration districts were made smaller, and a greater number of enumerators were hired accordingly. This shift between 1870 and 1880 to more effective census machinery at the national level contrasts with the more general decline in federal oversight of the Southern states in particular as Reconstruction came to a close in 1877, which makes testing for evidence of a weakened bureaucracy in 1880 a much harder task.

However, there is some suggestive local anecdotal evidence that white Southern elites had other goals in mind besides an objective assessment of demographic trends. In contrast to his description of the Reconstruction-era enumerators, Aiken described the 1880 enumerators as "of a different class. They have been white men belonging to the old

[3]In his 1900 report to the Senate, Wright referred to the 1870 census as "the best census that it was possible to take under the provisions of the existing census law," praising Superintendent Walker's "skillful guidance and direction" (Wright 1900, 53). In his report to the Secretary of the Interior, Walker himself wrote that he "believed that the enumeration of the people at the present census has been as carefully and honestly performed, in every part of the country, as at any preceding period" (U.S. Bureau of the Census 1872, xix).

Table S18: Instructions to Enumerators on Collecting Age Information

1850	"Under heading 4, entitled 'Age,' insert in figures what was the specific age of each person at his or her last birthday previous to the 1st of June, opposite the name of such person. If the exact age in hers can not be ascertained, insert a number which shall be the nearest approximation to it."
1860	"Under heading 4, entitled 'Age,' insert in figures what was the specific age of each person at his or her last birth day previous to the 1st day of June, opposite the name of such person. Where the exact age cannot be ascertained insert a number which shall be the nearest approximation thereto."
1870	"The exact age, in figures, will be inserted in column 4, wherever the same can be obtained; otherwise, the nearest approximation thereto. Where the age is a matter of considerable doubt, the assistant marshal may make a note to that effect."
1880	"The exact age in figures will be inserted in column 6 whenever the same can be obtained; otherwise, the nearest approximation thereto."

families there, who were glad to take the post of enumerator for the pay attached" (Magnuson 1995). This phrasing—"white men belonging to the old families"—contrasts sharply with his description of the 1870 enumerators, suggesting that at least some Southern white elites saw control of census enumerator appointments as important to their interests.

Age Heaping and the Census

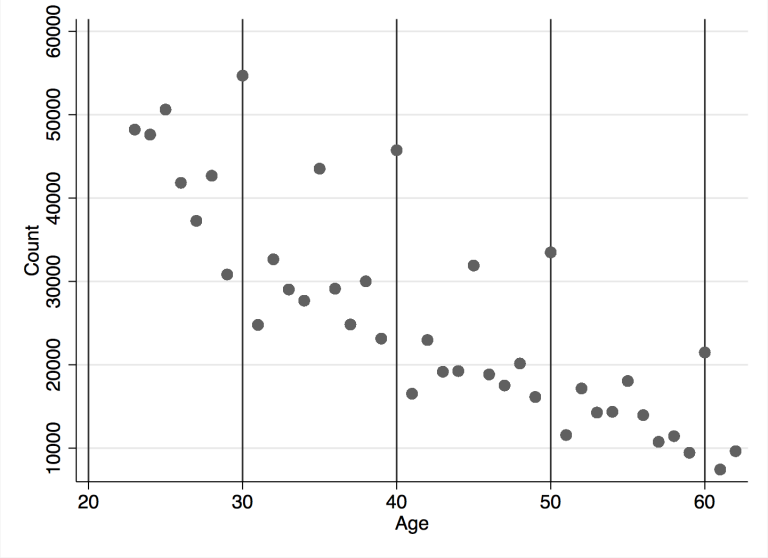
By 1890, the Census Bureau was aware of the "general tendency of persons in giving their ages is to use the round numbers, as 20, 25, 30, 35, 40, etc." Enumerators were instructed that when "the age is given as 'about 25,' determine, if possible, whether the age should be entered as 24, 25, or 26. Particular attention should be paid to this, otherwise it will be found when the results are aggregated in this office that a much more than normal number of persons have been reported as 20, 25, 30, 35, 40, etc., years of age, and a much less than normal at 19, 21, 24, 26, 29, 31, etc." (IPUMS USA: 1890 Enumerator Instructions). Since the 1890 census records were destroyed in a fire, however, all the available U.S. Census data from the second half of the nineteenth century are likely to contain evidence of age heaping. The main text notes that enumerator instructions contained specific instructions for recording age, which are presented in Table S18.

This discretion with respect to collecting age information allowed for the possibility of age heaping in census data. Lee and Zhang (2016) offer the fullest justification of why age heaping can serve as a measurement of the state's bureaucratic capacity in situations where other forms of data are unavailable. In particular, they argue that it serves as a measure of *legibility*, explaining that "census age errors proxy for the legibility problem more broadly" and are "likely to result (a) from a lack of age awareness in the population at large or (b) when census enumerators have difficulty finding or reaching the population to be counted" (Ibid., 121). Further, they write, "regardless of whether age heaping is the result of general age unawareness among the population or specific enumerator error, both data-generating processes are likely to indicate a broader absence of legibility" (Ibid., 123).

In an earlier paper, Driscoll and Naidu (2012) offer a similar justification. They write, "Since the citizens volunteering information are surely aware that the census can be used to allocate government benefits, the data collection process is potentially subject to contestation, manipulation, and resistance" (Ibid., 2). They present a model which suggests that census design thus "represents a statistical agency's best-response to an underlying willingness to provide accurate information on a particular category" (Ibid., 16). The United States, they write, is a particularly apt place to observe variation in this measure over time, as it has " an unusually well-preserved set of historical micro-samples" and the "level of hostility towards the federal government has varied substantially over time, race, and region" (Ibid., 20). They note that although U.S. census quality improved over time, age heaping remained at least somewhat higher in Southern states even throughout the twentieth century, although it was most apparent in the nineteenth century. They point to Reconstruction in particular, which they write "suggests that populations that perceive government forces as an occupying army might not be terribly concerned about the accuracy of data they provide to the state" (26).

To visualize what heaping looks like graphically, Figure S4 presents the distribution

Figure S4: Age Heaping Among Southern Respondents (1880 Census)



of ages for respondents listed as being between the ages of 23 and 62 in the Southern states in the year 1880. There is a very clear tendency that is quickly apparent in the graph: Far too many people are exactly 30, rather than 29 or 31 (and 40, rather than 39 or 41, etc.). There are also too many people listed as 25, rather than 24 or 26 (and 35, rather than 34 or 36, etc.). Rather than reflecting an especially peculiar clustering of actual births over time, this pattern instead reflects rounding to numbers ending in zeroes and fives in the absence of precise information. When compared to national census efforts in more recent times, this looks much more like Tanzania in 1988 than Canada at around the same time period (Naidu and Driscoll 2012, 3).

There are different ways of measuring age heaping. In our paper, we utilize Whipple's index for two reasons. First, it is suitable for a cultural context like the United States where heaping occurred around '0' or '5' (as shown in Figure S4). Lee and Zhang (2016), for example, use Myers indices to measure legibility around the world as age heaping might occur around other numbers in many countries. Second, it allows for easy interpretation. The substantive interpretation of different ranges is as follows: less than 105 is highly accurate, 105-110 is fairly accurate, 110-125 is approximate, 125-175 is rough, and

higher than 175 is very rough (Pardeshi 2010). For a discussion of the merits of Whipple's index, see A'Hearn et al. (2009, 787-788).

Concerns About the 1870 Census

Working with nineteenth century census data poses certain challenges, as the data are not as accurate as contemporary datasets. To some extent, this is actually an advantage for us: Our measure of age heaping turns problems in census enumeration into a measure of the state's capacity to collect accurate information or not. The possibility of under-enumeration of Black Southerners in particular, though, does pose a potential challenge to our per capita taxation measures, which we want to be as accurate as possible. To address this, we briefly discuss the historiographical debate about how to understand the 1870 census's strengths and weaknesses, as well as results for our per capita taxation regressions when adjustments are made to the denominator.

As a historiographical note, there is some ambiguity of what to make of the 1870 census. As Valelly notes, it has "long had a poor reputation" but the "most recent research has refurbished its reputation, however, and shown that the low extreme in which it was held was part of the general academic reaction in the 1890s against Reconstruction" (2004, 3). Accounts in that era often blamed problems on northerners and Black Southerners working for the Census, sometimes veering into racist language. The best estimate of the census undercount of Black Southerners in 1870 is 6.6 percent (Ransom and Sutch 1977, 54).

Fortunately, adjustments to account for this possible undercount do not change the substantive argument we make. In this appendix, we replicate our taxation results using a total population measure adjusted for this possible undercount (first using 6.6 percent as the assumed undercount, then using 10 percent), as well as using white population only as the denominator (this will inflate our per capita estimates dramatically in majority-Black counties, but it should at least be more consistent across censuses). The results

are presented in Tables S2-S4. When we adjust for an undercount of Black residents in our total population denominator, the results are very substantively similar: a positive and significant relationship between the percentage of the county that was enslaved in 1860 and 1870 taxation levels, contrasted with a significant decrease in these taxation levels between 1870 and 1880. When we take the more extreme approach of using white population in the denominator, we see that the proportion of the population that was enslaved in 1860 predicts higher tax levels in both years, but importantly is associated with a similarly sized decline in taxation levels between 1870 and 1880 as we find in the other specifications.

This is consistent with Hacker et al., who argue that "the 1870 undercount compares favorably with nonresponse rates routinely encountered in modern social survey data and will not pose a significant problem for most analyses" (Hacker et al. 1999, 130). We do not adjust the 1880 total population measure because "estimates of underenumeration based on demographic methods suggest near parity in coverage of blacks and whites in 1880" (King and Magnuson 1995, 462).

F. Measuring Intra-white Inequality

To examine intra-white inequality, we use the Duncan Socioeconomic Index in the main text. Here, we offer additional details and justification of the measure. We also provide other measures of intra-white inequality that focus on wealth rather than occupation.

The Duncan Socioeconomic Index assigns prestige scores to occupations based on the income and educational levels associated with them. This is, of course, a very rough way of measuring social class, and some social scientists have been critical of the index's usability for over-time change, gender inequality, and a range of issues of interest to contemporary researchers. However, we argue it is probably the best available proxy for occupational inequality among white men at this time, consistent with Sobek's conclusion that "researchers using mid-twentieth-century occupational measures as early as the late

nineteenth century plausibly represent the social standing of most men" (1996, 170).

Sociologists have made use of the Duncan Socioeconomic Index in recent work on status competition in this period (Gullickson 2010; Smångs 2016). As Gullickson writes:

> The Duncan SEI uses the average education and average income of each occupation in 1950 to produce a measure of overall social prestige. The use of 1950 averages as a basis for 1880 occupations may lead to some distortion for particular occupations. However, my goal is not to produce an accurate measure of occupational income and education in 1880 but rather to produce a rank ordering of occupations that is consistent with 1880 preferences. There is strong evidence that occupational rankings are highly stable across time and space (Hout and Diprete 2006). (2010, 207)

We use 1850 data rather than 1880 data because we want a prewar measure of such occupational rankings. Our argument is not that this is a perfect measure of 1850 occupational inequality, but rather that it is likely the best available data to measure the social standing of white men in that era.[4]

We validate the occupational inequality measure with other measures of intra-white inequality in this era, and find that these lead to generally similar patterns. When we use land inequality, as shown in Table S11 and Figure S2, it is associated with an increase in 1880 age heaping and a decrease in 1880 government employees, but we see a null result for the change in taxation. When we use asset ownership, as shown in Table S12 and Figure S3, measured as a binary variable taking the value of "1" if the respondent owned any real estate and "0" otherwise, it is associated with a decrease in taxation and 1880 government employees, but we see a null result for 1880 age heaping. These results are generally consistent with what we see for occupational inequality. In Table S17, we present the correlation between the measures of intra-white inequality and our measures of status inequality.

[4]For more details on how Ipums calculated OCC1950, see Ronnander (1999).

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