Tell Me What You Grow, and I'll Tell You What You Think: Westward Expansion and the Politics of Slavery in the US South

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Motivation: Slavery

- One of the most widespread and long-lasting labor institutions
  Greece, Rome, Egypt; Islamic empires; pre-Colombian world; European colonies; Antebellum US (Patterson, 1982)
- By the end of 19th: economically marginal and morally unjustifiable
- What explains the demise of slavery?
  - On the one hand, ideological changes and humanitarian sentiments played an important role in the political defeat of slavery (Fogel, 1989)
    - Ideological change $\rightarrow$ Institutional and Economic change
  - On the other, the rise of humanitarian abolitionist movements shows "a curious affinity with the rise and development of new economic interests and the necessity of the destruction of the old" (Williams, 1964)
    - Economic change $\rightarrow$ Institutional and Ideological change

This Paper

- Examine the support for slavery in the US Antebellum South
- **Question:** Did changes in economic incentives to the use of slave labor affected the political support for slavery?
- Main challenges:
  1. Determine changes in economic incentives to the use of slave labor
     - Use westward expansion $\rightarrow$ changes in comparative advantage in agricultural production $\rightarrow$ slave relocation

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  2. Measure the support for slavery over time
     - Direct political support for slavery
       Politicians voting behavior in Congress and Secession Conventions
     - Party politics and representatives' ideology
       Presidential and Gubernatorial Elections and DW-Nominate score
     - Broader changes in perception of slavery
       Local newspapers' behavior and Free Blacks population

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     - Broader changes in perception of slavery
       Local newspapers' behavior and Free Blacks population
  3. Understand the channels:
     - Migration vs. change in behaviors

Literature

- Economics of Slavery

  Fogel and Engerman (1974); Earle (1978); David and Temin (1979); Wright (1979); Fenoaltea (1984); Irwin (1988); Fogel (1989); Hanes (1996); Wright (2006); Tadman (1989); Pritchett (2001); Steckel (2013); Acemoglu and Wolitzky (2011); González et al. (2017)

  - Changes agricultural comparative advantage explain slave relocation. Estimate share trade vs. migration in slave relocation.

- Politics and Ideology of Slavery

  Chacón and Jensen (2019); Hall et al. (2019); Acharya et al. (2016)

  - Westward expansion led to political polarization over slavery in the US south

- Economics, Institutional Change and Social Norm

  North (1990); Sokoloff and Engerman (2000); Bisin and Verdier (2001); Guiso et al. (2006); Di Tella (2007); Doepke and Zilibotti (2008, 2017); Greenwood et al. (2014); Becker and Pascali (2019); Bazzi et al. (2020)

  - Short term effect of economics on institutions and social norms

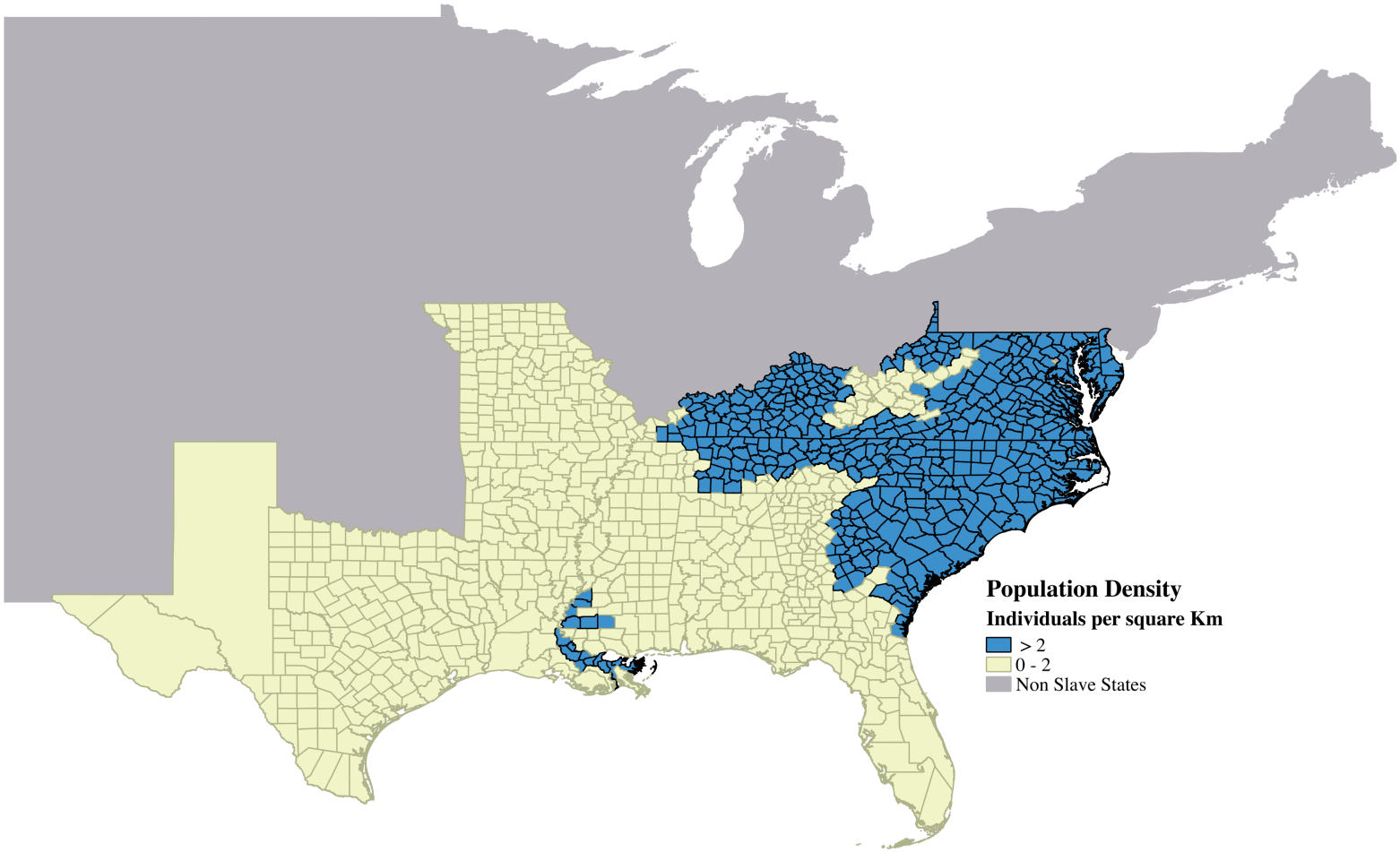
Historical Context: Westward Expansion and Slave Relocation

- 1807 Atlantic Slave Trade and Northern Slavery are abolished
  - Illegal to import any new slave
- **Westward expansion** increase US South by 3 times (1810-1860)
  - Best land for cotton production was in the West
  - Cotton: main crop grown by slaves
    Fogel and Engerman, 1977; Wright, 1979 [1]

$\rightarrow$ Westward expansion determined incentives to slave relocation

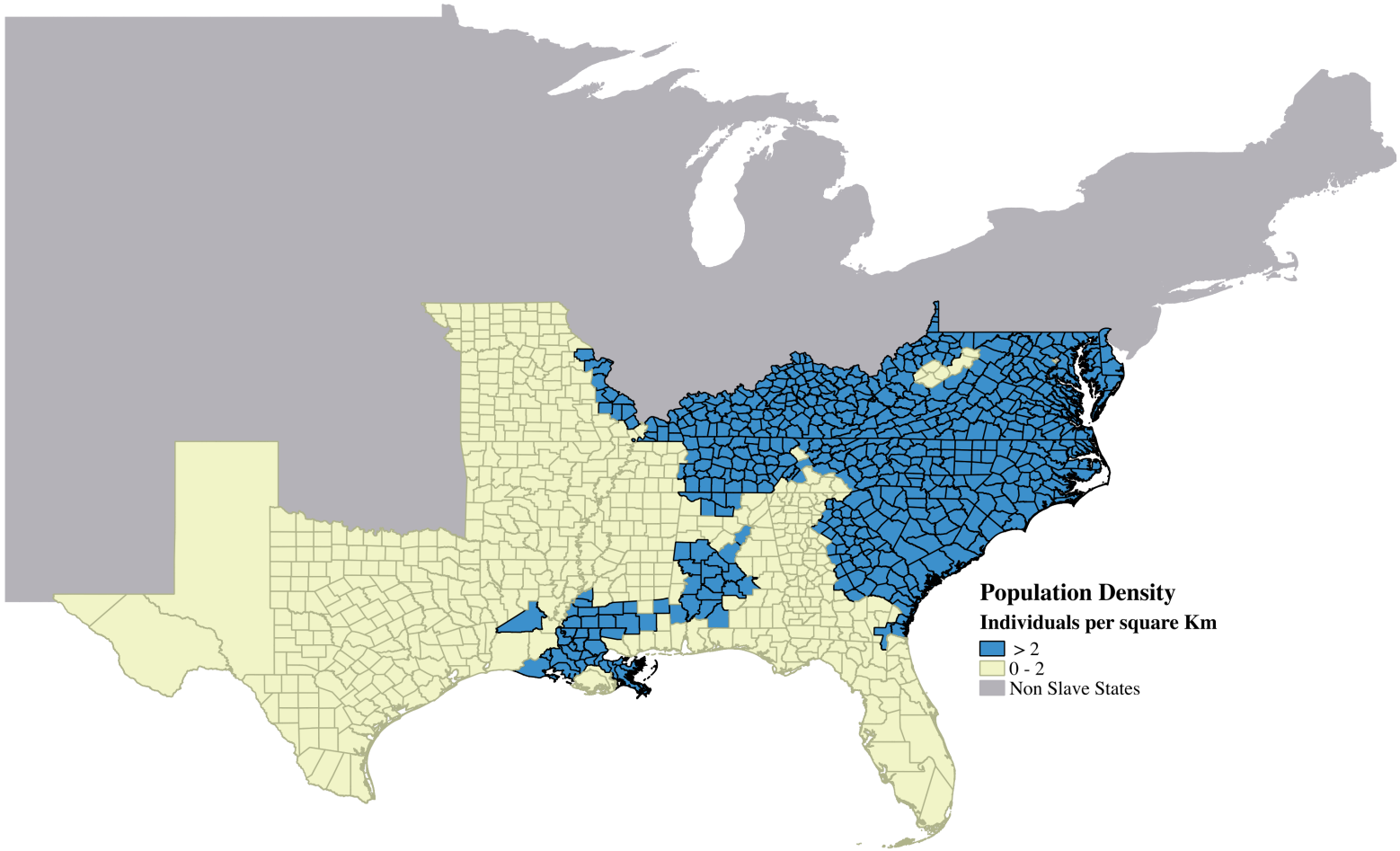
[1] Average share of cotton in farm output varied from 29 percent on slaveless farms to 61 on large plantations

Westward Territorial Expansion: Inhabited Land 1810



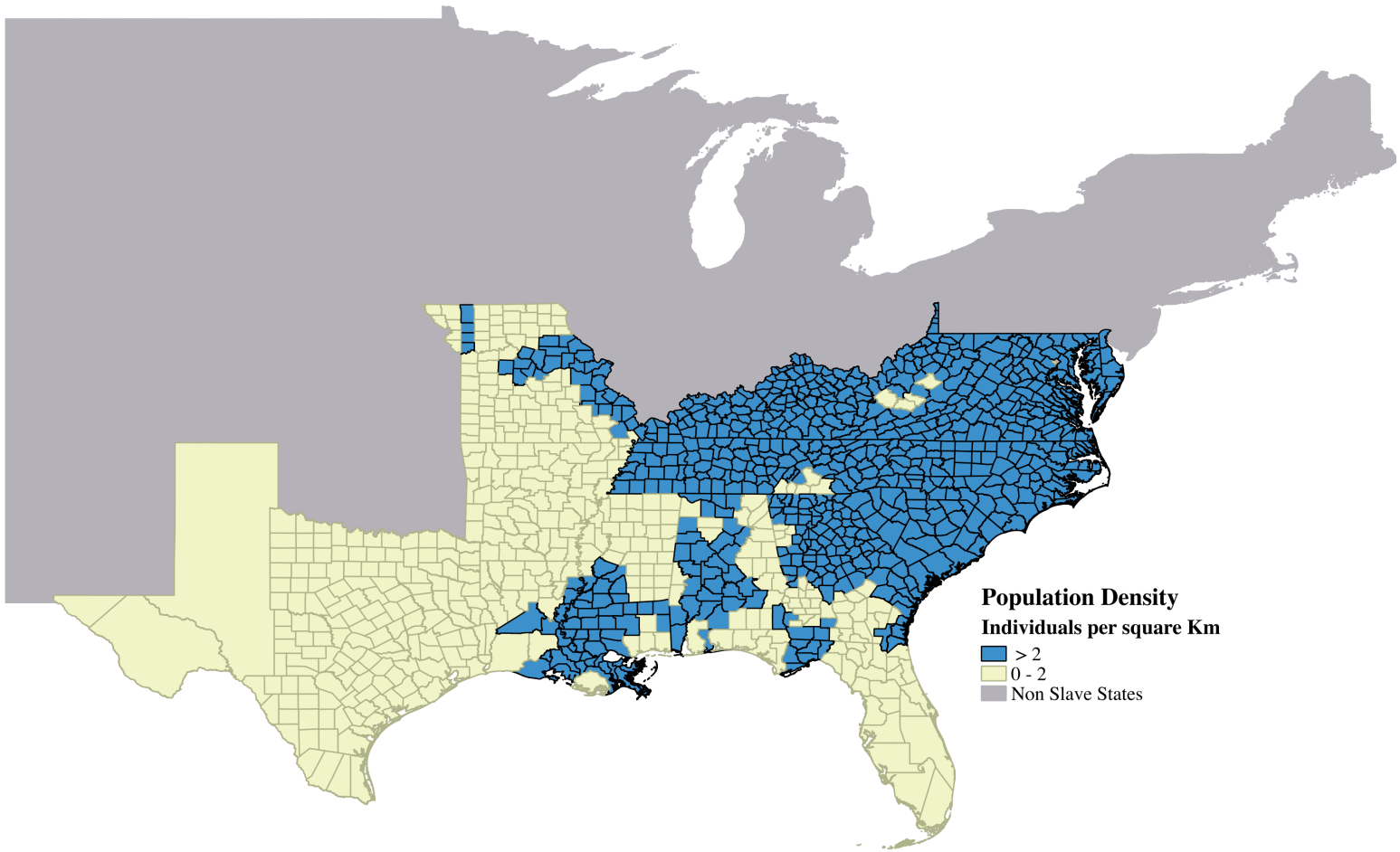
Share of Slaves in 1810: 33.9%
Source: IPUMS-NHGIS (2018), ICPSR (2010)

Westward Territorial Expansion: Inhabited Land 1820



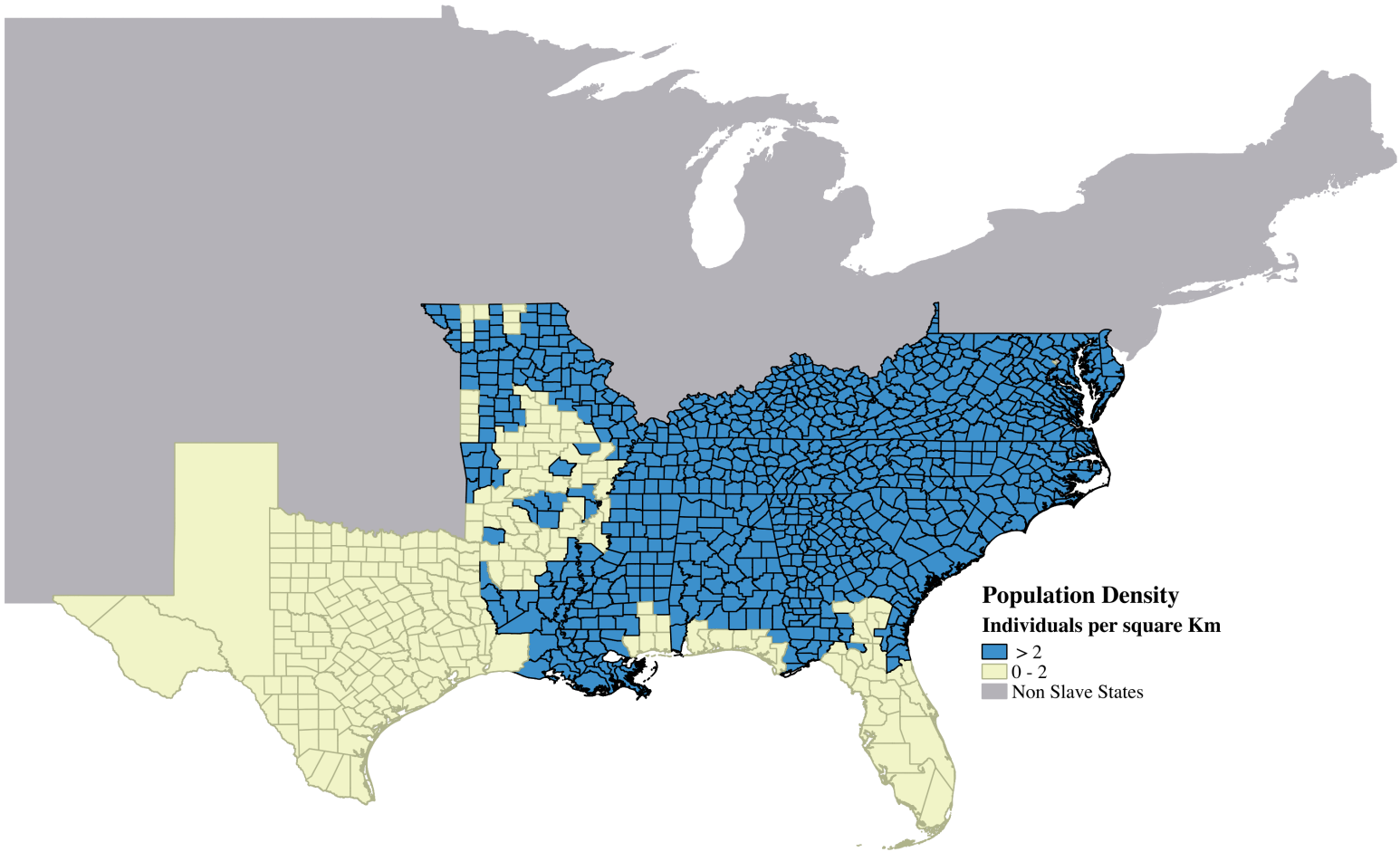
Share of Slaves in 1820: 34.3%
Source: IPUMS-NHGIS (2018), ICPSR (2010)

Westward Territorial Expansion: Inhabited Land 1830



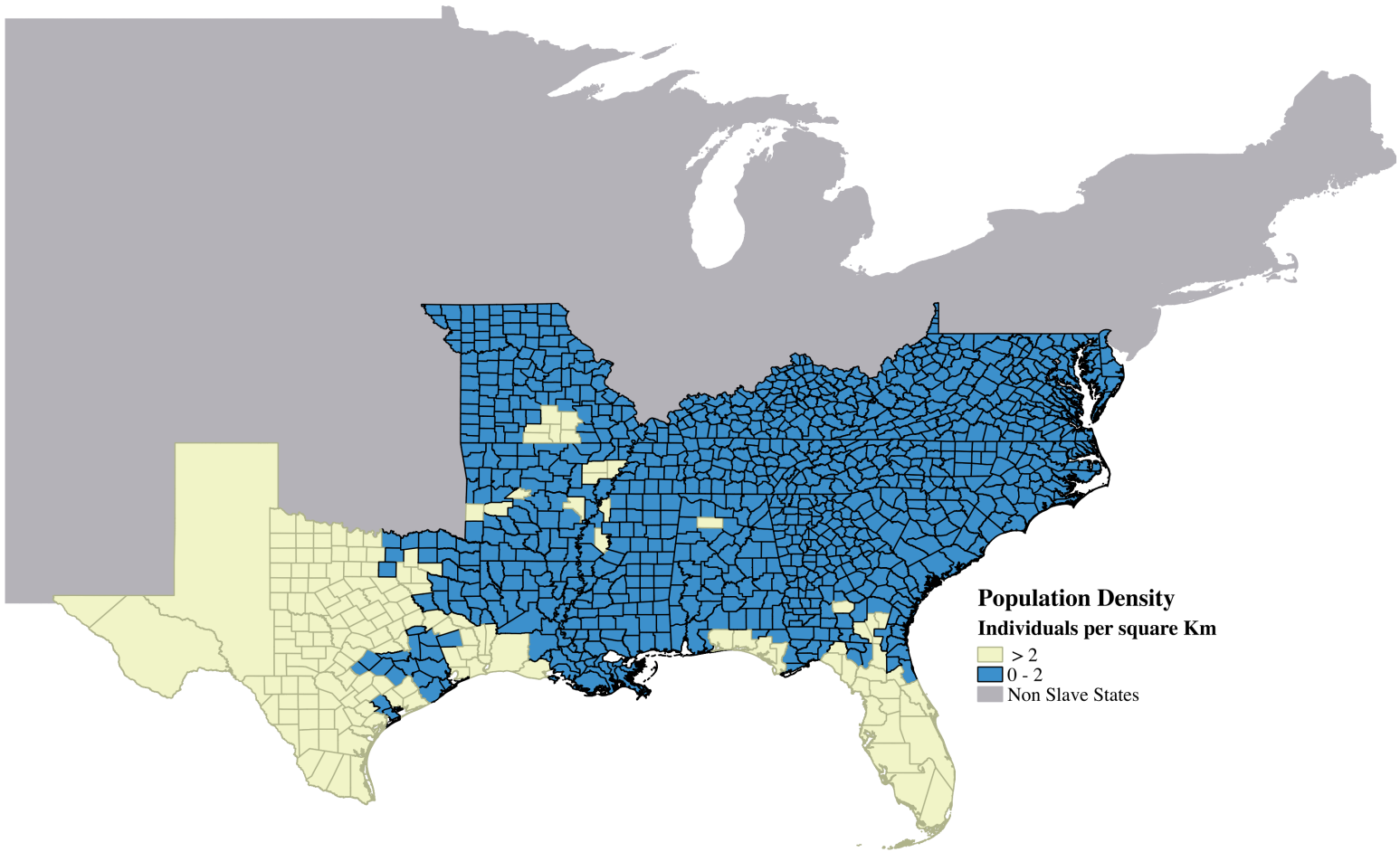
Share of Slaves in 1830: 34.7%
Source: IPUMS-NHGIS (2018), ICPSR (2010)

Westward Territorial Expansion: Inhabited Land 1840



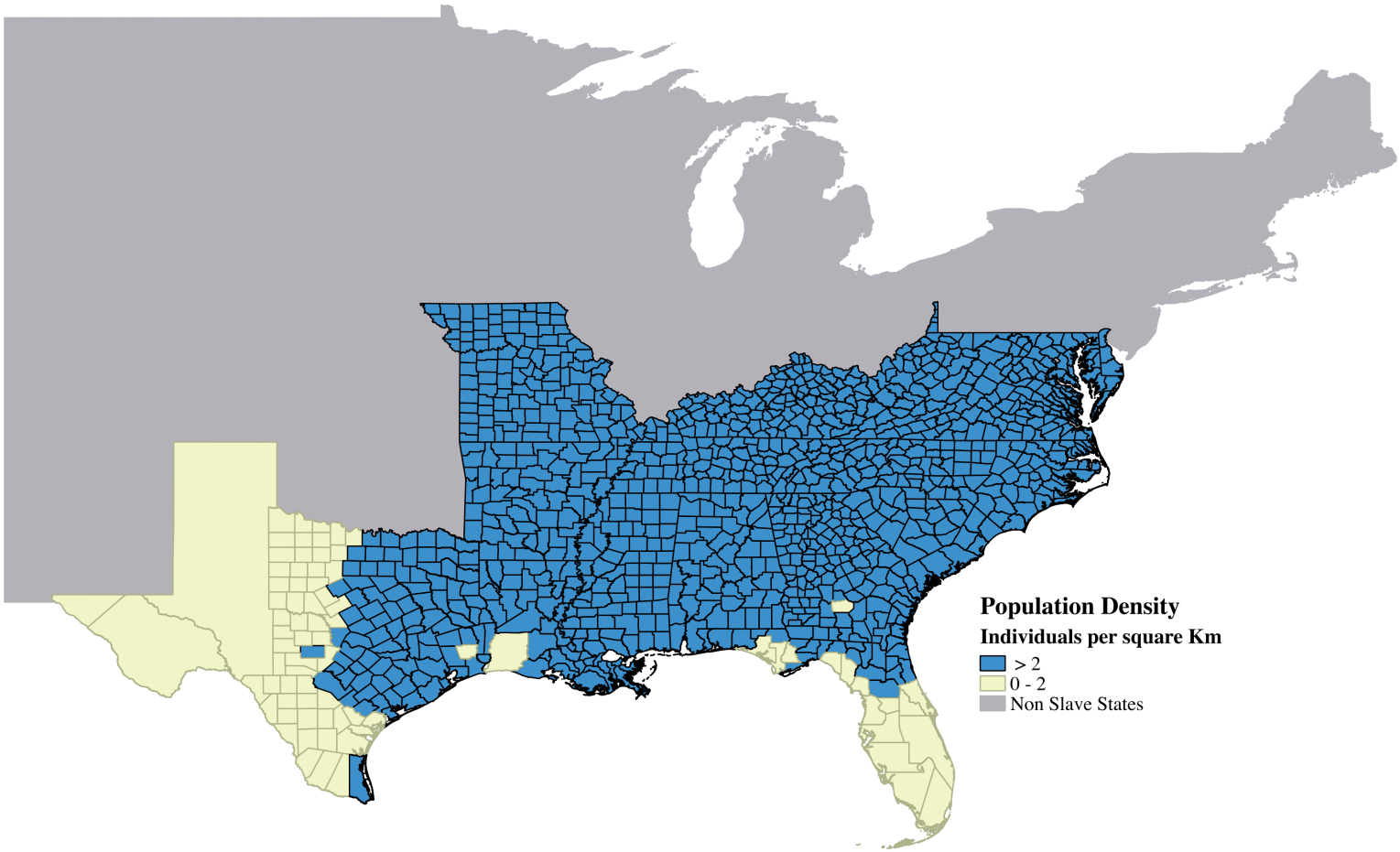
Share of Slaves in 1840: 34.2%
Source: IPUMS-NHGIS (2018), ICPSR (2010)

Westward Territorial Expansion: Inhabited Land 1850



Share of Slaves in 1850: 33.4%
Source: IPUMS-NHGIS (2018), ICPSR (2010)

Westward Territorial Expansion: Inhabited Land 1860



Share of Slaves in 1860: 32.3%
Source: IPUMS-NHGIS (2018), ICPSR (2010)

Empirical Strategy

- Exploit the westward expansion as change in counties' incentives to cotton production

  1. Measure each county relative productivity (RP_i) between cotton and wheat (**fixed in time**)

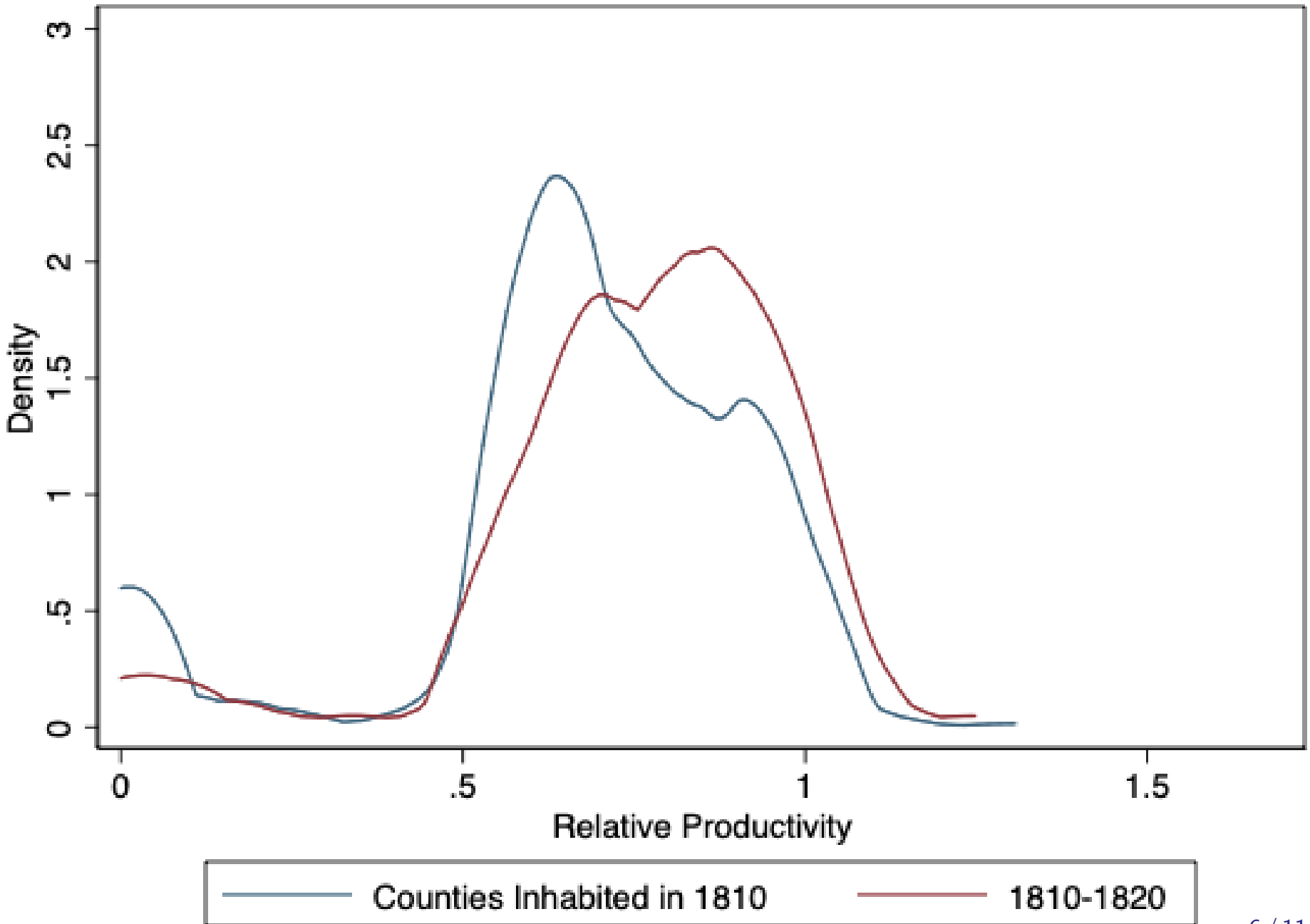
$$RP_i \equiv \frac{\text{Cotton Prod.}_i}{\text{Wheat Prod.}_i}$$

     - Source: FAO-GAEZ on land suitability
     - Wheat: main alternative non slave crop Crop Choice

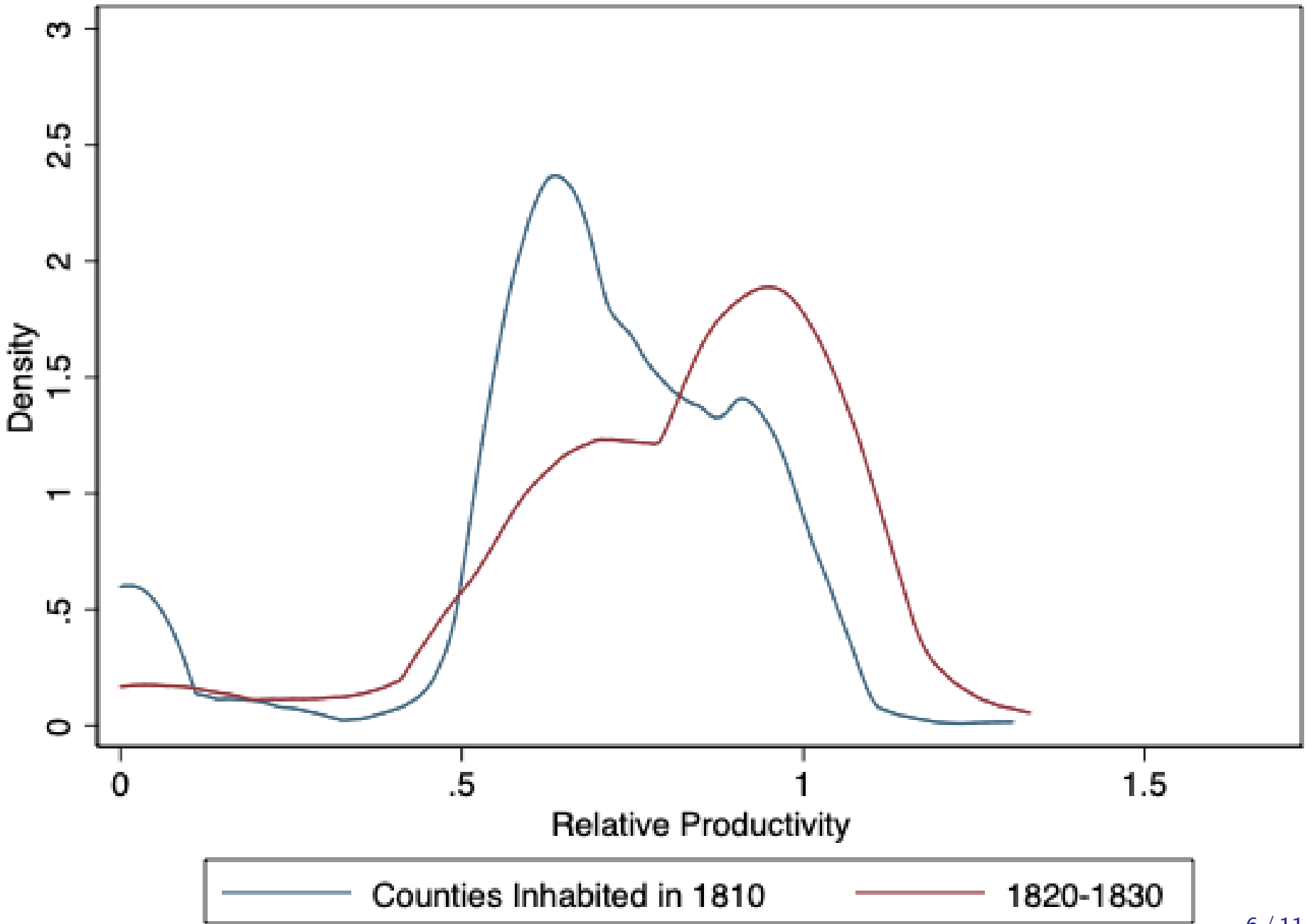
  2. For each census year, we compare each county RP_i to all other inhabited counties (**over time**)

- Westward expansion moves the counties with highest RP_i to the West

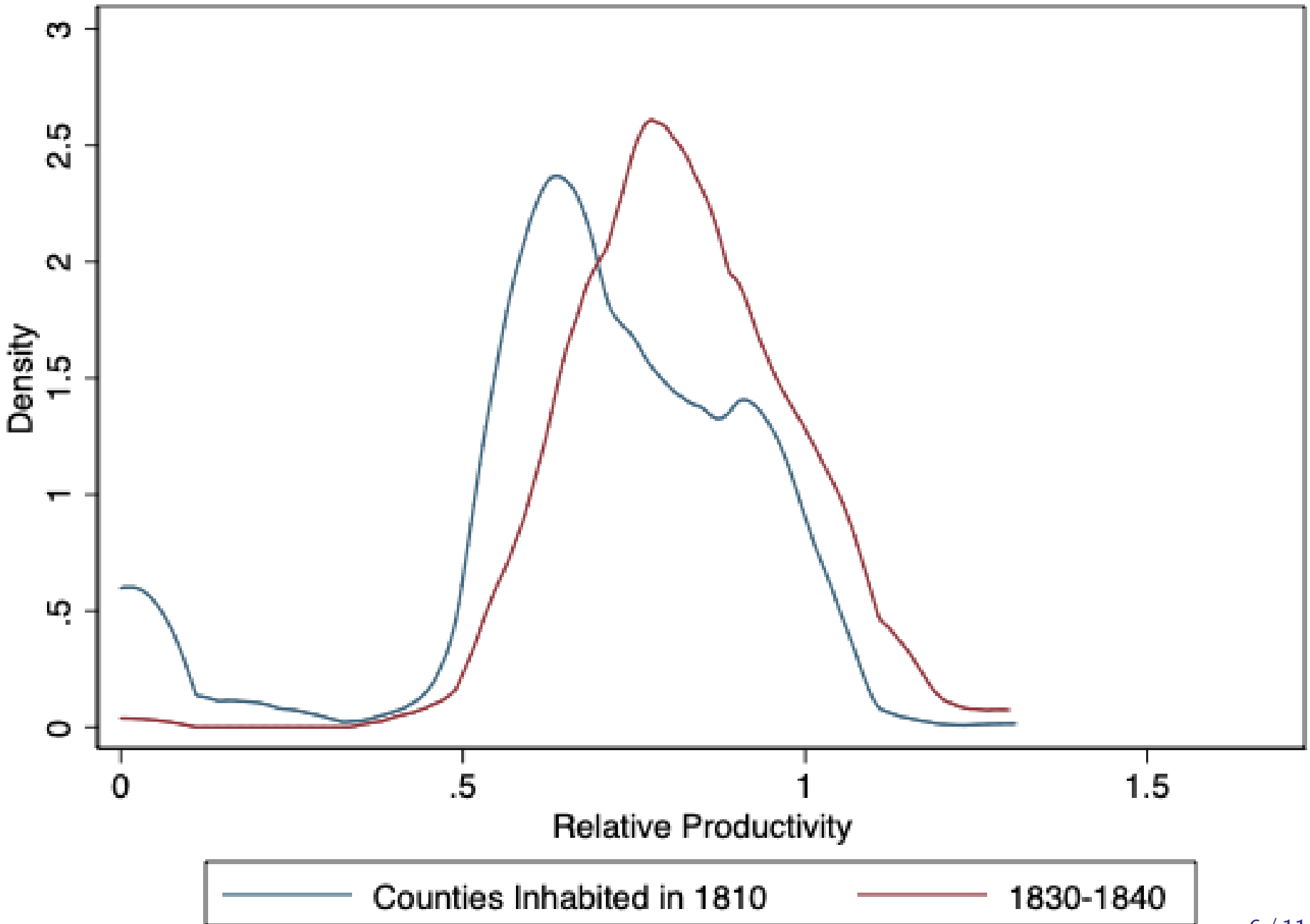
Distribution of RP_i: Counties 1810 and 1810 - 1820



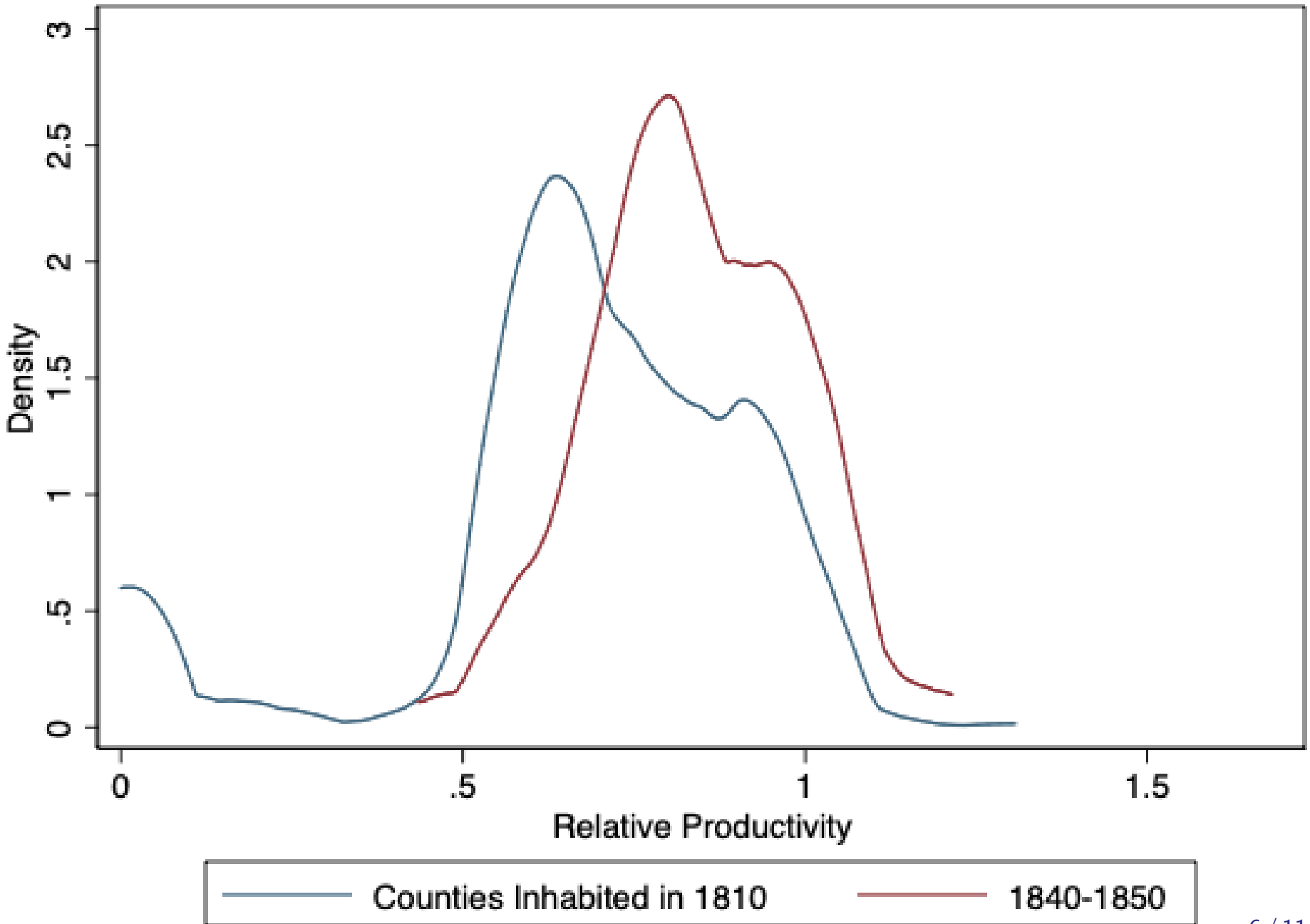
Distribution of RP_i: Counties in 1810 and 1820 - 1830



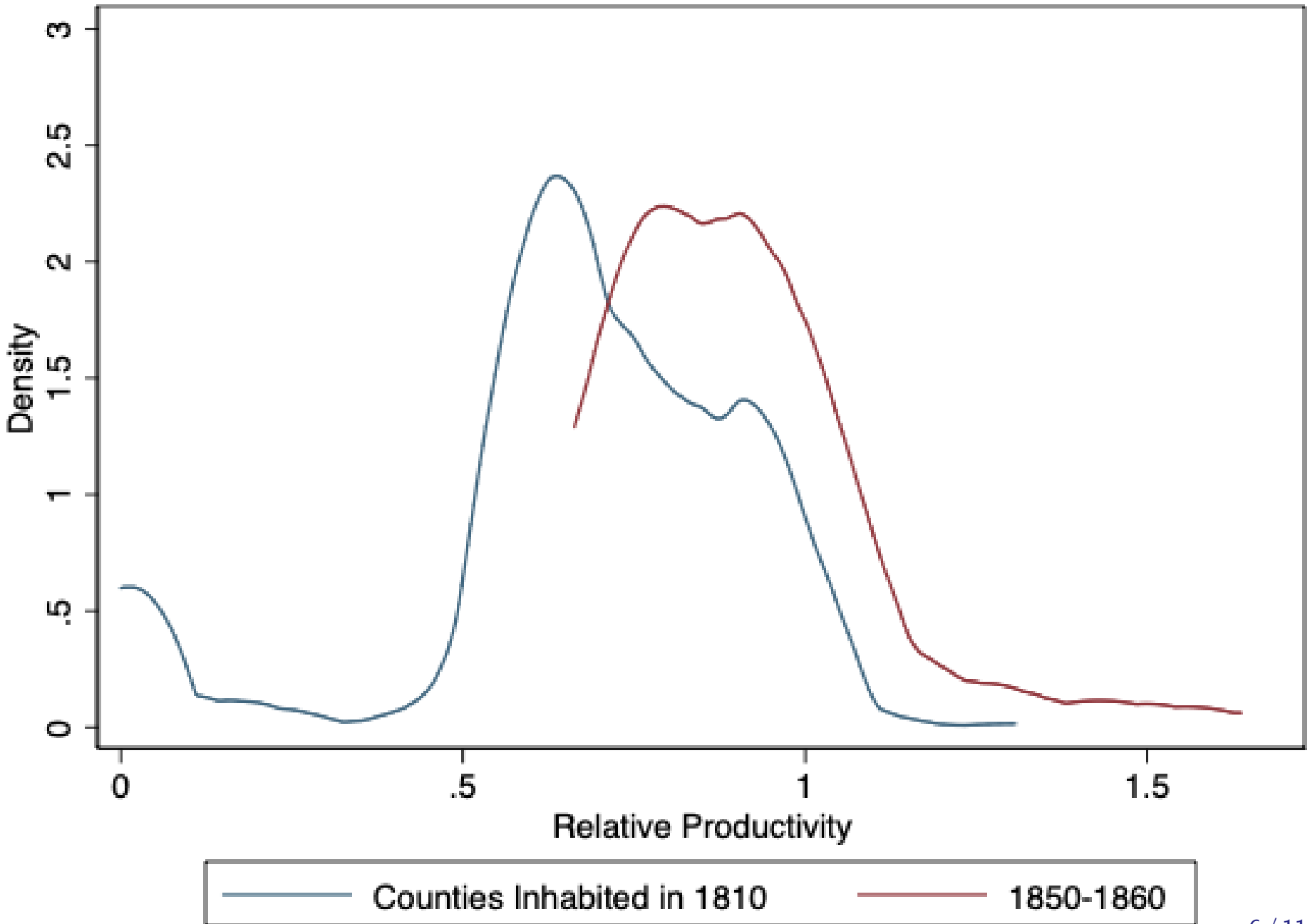
Distribution of RP_i: Counties in 1810 and 1830 - 1840



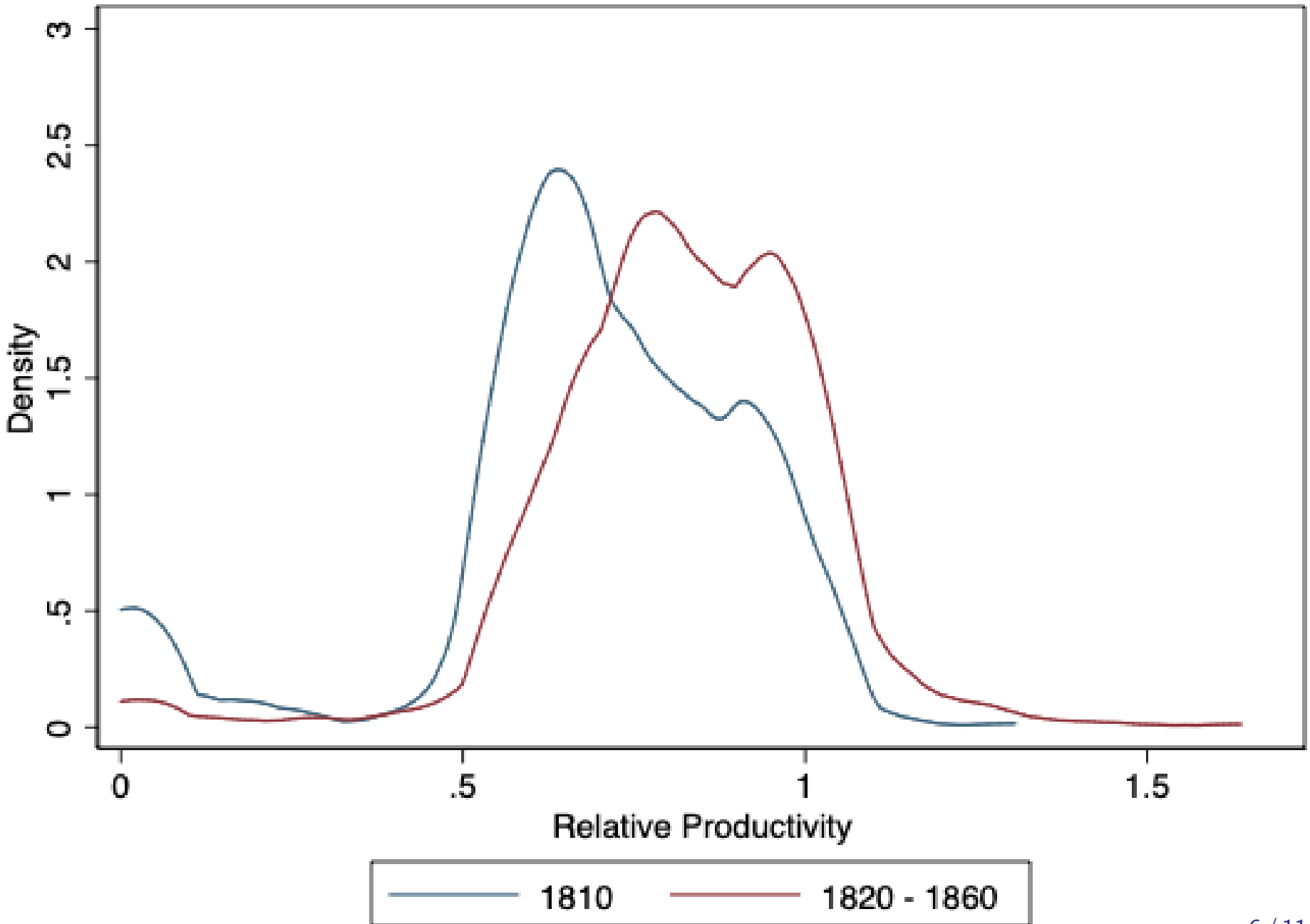
Distribution of RP_i: Counties in 1810 and 1840 - 1850



Distribution of RP_i: Counties in 1810 and 1850 - 1860



Distribution of RP_i: Counties in 1810 and 1820 - 1860



Measures of Changes in Comparative Advantage

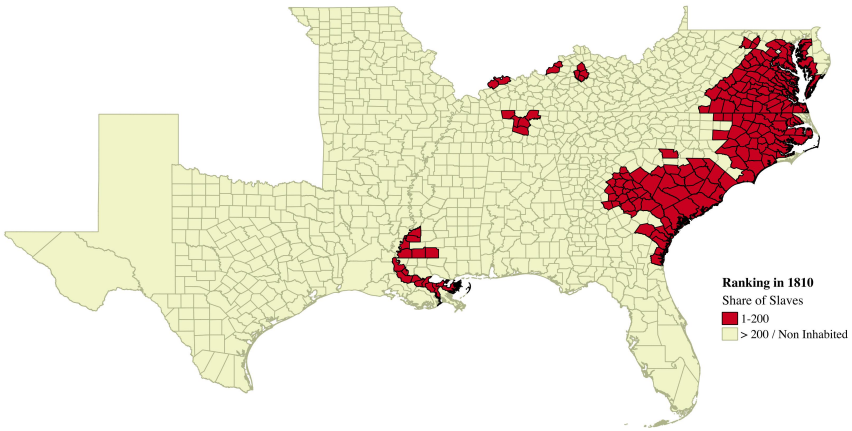
- Shift in county's position in the distribution of relative productivity
  - Size (Km^2) of inhabited southern land better than county i in relative productivity

$$\text{Land-Rank}_{it} = \sum_{j=1}^{N_t} w_j I_{(RP_j \geq RP_i)}$$

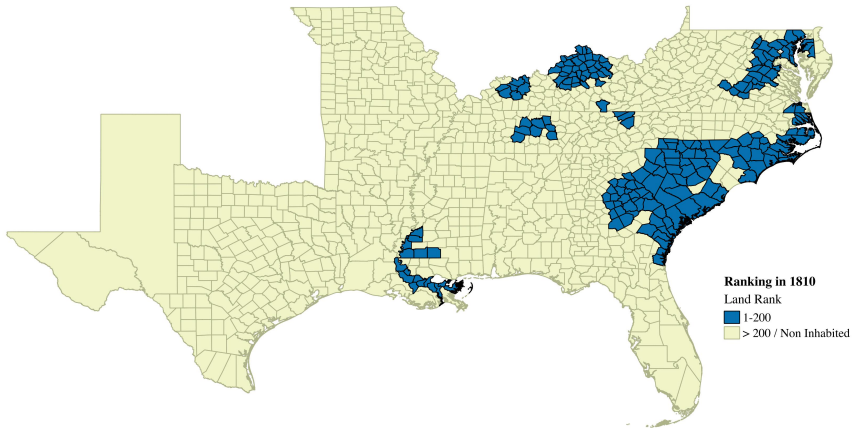
  - $t = 1810, ..., 1860$
  - w_i size of county i
  - N_t total number of inhabited counties in year t
  - RP_i relative productivity of county i

- Under the assumption that higher cotton productivity implies higher value for slaves we show that
  - $\uparrow \text{Land-Rank}_{it}$ $\downarrow \text{Share of Slaves}_{it}$ and $\text{Cotton Production}_{it}$

Result: Land Rank Explains Slave Distribution in 1810



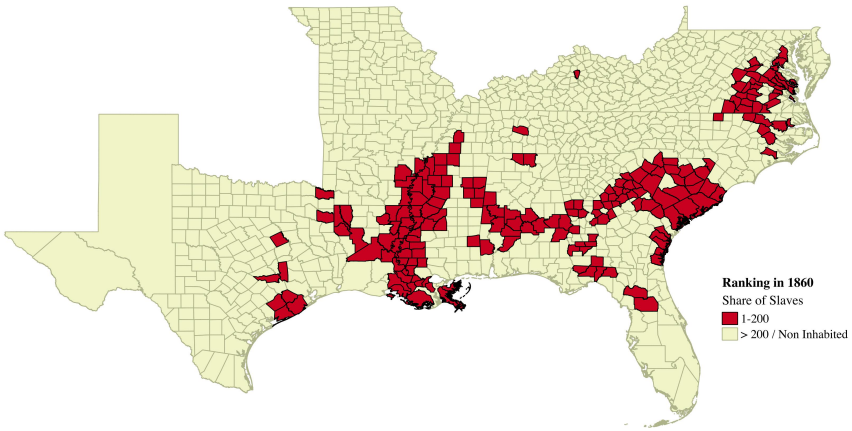
(a) Share of Slaves 1810



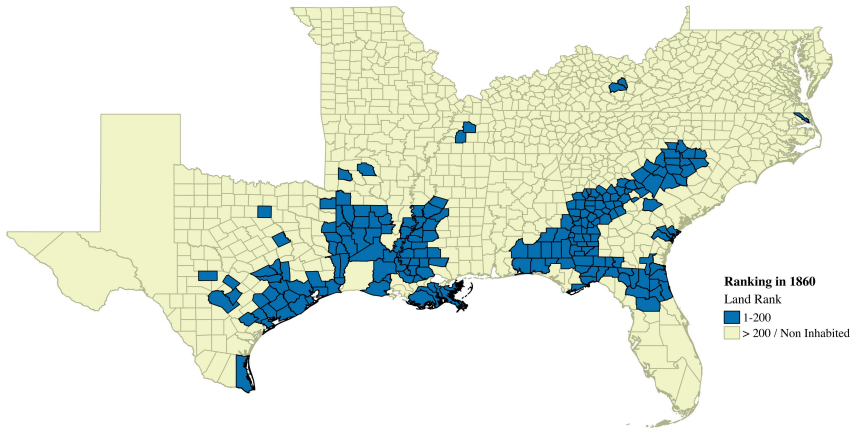
(b) Land Rank 1810

Source: IPUMS-NHGIS (2018), GAEZ-FAO (2002)

Result: Land Rank Explains Slave Distribution in 1860



(a) Share of Slaves 1860



(b) Land Rank 1860

Source: IPUMS-NHGIS (2018), GAEZ-FAO (2002)

Slave Relocation, Agricultural, and Political Change

$$y_{it} = \delta_t + \delta_i + \beta \text{Land-Rank}_{it} + \gamma X_{it} + \epsilon_{it}$$

	Slaves Relocation			Agricultural Change		Political Change		
	% Slaves			Ln Cotton	Ln Wheat	Pro-Slavery Vote	Dem. Share	DW-Nominate
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Land-Rank$_{it}$	-0.144***	-0.149***	-0.108***	-1.204***	0.436***	-0.148***	-0.120***	-0.114***
	(0.0135)	(0.0140)	(0.0134)	(0.362)	(0.132)	(0.0476)	(0.0239)	(0.0341)
Observations	4471	4471	4471	2790	2785	14910	5960	1570
Mean DV	0.292	0.292	0.292	8.640	9.343	0.719	0.548	99.57
Adj. Within R^2	0.115	0.119	0.202	0.0291	0.0183	0.000641	0.0125	0.0156
County/District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year/Vote FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region * Year	No	No	Yes	Yes	Yes	Yes	Yes	Yes
ln(Distance North) * Year	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample	1810-1860	1810-1860	1810-1860	1840-1860	1840-1860	1810-1860	1828-1860	1810-1860
SE Clust.	County	County	County	County	County	Vote	County	District

Median county ↑ in Land-Rank from 1810-1860 is 1M Km^2 → 10.8 pp ↓ in slaves

Upper-bound of the proportion of relocation due to slaveowners migration is 70%

Price Variation | Alternative Outcomes | New Counties (Frontier) | Crop Production | Event Study

County Specific Linear Trend | De-trended Outcome | Trade vs. Migration

Slave Relocation, Agricultural, and Political Change

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Sample	1810-1860	1810-1860	1810-1860	1840-1860	1840-1860	1810-1860	1828-1860	1810-1860
SE Clust.	County	County	County	County	County	Vote	County	District

Median county ↑ in Land-Rank from 1840-1860 is 0.3M Km^2 → 70% ↓ in cotton

Median county ↑ in Land-Rank from 1840-1860 is 0.3M Km^2 → 40% ↑ in wheat

Price Variation | Alternative Outcomes | New Counties (Frontier) | Crop Production | Event Study | County Specific Linear Trend | De-trended Outcome | Trade vs. Migration

Slave Relocation, Agricultural, and Political Change

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	Slaves Relocation			Agricultural Change		Political Change		
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SE Clust.	County	County	County	County	County	Vote	County	District

Median Cong. District ↑ in Land-Rank from 1810-1860 → 15pp ↓ in Pro-slavery votes

Median county ↑ in Land-Rank from 1828-1860 → 12pp ↓ % Dem. Pres. Election

Median county ↑ in Land-Rank from 1828-1860 → 11pp ↓ Nominate Socre

Upper-bound of the proportion of political change due to slaveowners migration is 30%

Slavery Debate | Parties on Slavery | Electoral Outcomes | DW-Nominate | Political Spectrum | Secession | Migration vs Change Behavior | Mechanism

Use Newspapers as Mirror of Political Change

How different newspapers react to the same economic change?

- Newspapers (NPs) are a mirror of local ideology
  (Gentzkow and Shapiro, 2010)
- Model: NPs have fixed partisanship but choose topic coverage
  - Model's predictions: $\uparrow$ Land-Rank$_{it}$ implies:
    (Worse economic conditions for slavery)
    - $\downarrow$ Slavery coverage if **pro-slavery** newspaper
    - $\uparrow$ Slavery coverage if **other affiliation** newspaper
- Data: collect 90,000 issues for 282 newspapers
  79 *pro-slavery*, 60 *non pro-slavery*, 125 *non-partisan*
- Outcome: Intensity of the coverage of slavery-related issues

Debate over Slavery | Coding example | World frequency | Newspapers' Location | Placebo | Model

Effect on Newspaper's Behavior

$$y_{ct} = \alpha_c + \gamma_t + \beta_1 LR_{ct} + \beta_2 LR_{ct} \mathbb{1}_{\{\text{Pro-Slavery}_c\}} + \beta_3 LR_{ct} \mathbb{1}_{\{\text{Other Affiliation}_c\}} + \delta X_{ct} + \epsilon_{ct}$$

	All Slavery Related Words	Abolition Emancipation	Fugitive Runaway	Slave Slavery	Work	Tax
Pro-slavery $\hat{\beta}_1 + \hat{\beta}_2$	-0.920***	-1.223***	-0.790***	-0.483**	0.041	-0.367
	(0.286)	(0.311)	(0.231)	(0.234)	0.330	0.422
Other Affiliation $\hat{\beta}_1 + \hat{\beta}_3$	1.465***	1.564***	1.028***	1.444***	-0.312	-0.164
	(0.328)	(0.302)	(0.303)	(0.319)	0.308	0.832
Observations	1505	1505	1505	1505	1505	1505
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Newspaper FE	Yes	Yes	Yes	Yes	Yes	Yes
Affiliation * Year	Yes	Yes	Yes	Yes	Yes	Yes
Region * Year	Yes	Yes	Yes	Yes	Yes	Yes
ln(Distance North) * Year	Yes	Yes	Yes	Yes	Yes	Yes

Dep. var: Log of average number of slave-related words per issue in a year-newspaper
Average dep. var: 10 slave-related words per issue
Median circ. area $\uparrow$ in Land-Rank from 1810-1860 $\rightarrow$ 60% $\downarrow$ in slavery-related words

Conclusion

1. Changes in agricultural comparative advantage explain the relocation of 800,000 slaves between 1810 and 1860
2. Changes in economic conditions for the median county led to 10-15pp. change in support for slavery
3. Migration explains up to 70% of the slaves' movement and 30% of the political change

You tell me whar a man gits his corn pone, en I'll tell you what his 'pinions is.

Unnamed Slave, Missouri, 1850
Mark Twain, *Corn Pone Opinions*

APPENDIX

Newspaper's Political Affiliation and Data

- Build a new database of 282 historical newspapers (2.6 billion words)
- Divide newspaper according to political partisanship
  (Source: Chronicling America)
  - 79 Pro-slavery:
    Democrats, Southern fire-eaters, Proslavery, White supremacist, Confederate
  - 60 Partisan, non pro-slavery:
    Whig, Know-Nothing, Antislavery, Abolitionist
  - 125 Non Partisan
- Construct a measure of "debate over slavery" per newspaper-time
- Newspaper's Coding example
- Sample content: world frequency
- Newspapers' Location
- Placebo
- Model

Alternative Specification

1. Changes in relative prices
   - In an efficient allocation, counties $i \in \mathbf{N}$ allocated to cotton *v.s.* wheat are Costinot and Donaldson (2012):

$$\mathbf{I^c} = \left\{ i = 1, ...N \mid \frac{A^c}{A^w} > \frac{p^w}{p^c} \right\}$$

   - $\frac{A^c}{A^w}$ relative cotton and wheat productivity
   - $\frac{p^c}{p^w}$ relative cotton and wheat prices

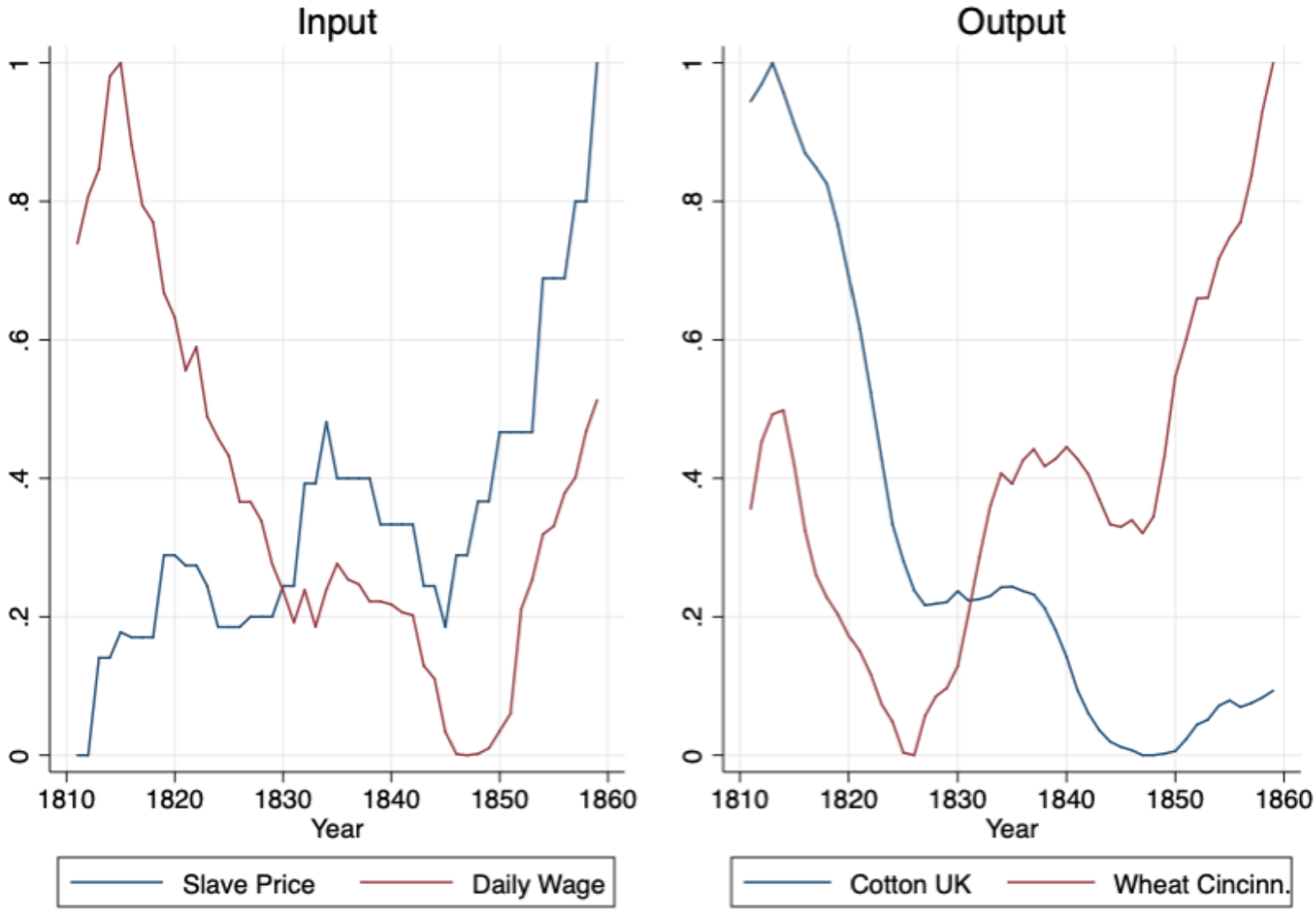
- Define $\text{RP}_i = \frac{A_i^{cotton}}{A_i^{wheat}}$

$$RP_{it} = RP_i \times \underbrace{\frac{p_t^{wheat}}{p_t^{cotton}} \times \frac{p_t^{slave}}{p_t^{wage}}}_{\text{increasing in t}}$$

- $\uparrow RP_{it} \uparrow$ Share of slaves$_{it}$

Changes in Prices

Back



Ten years moving average. Wages from Adams (1992), West Virginia. Slave prices from Phillips (1905). Cotton prices from Clark (2005). Wheat from Cole (1938).

Slave Relocation: Alternative Outcomes

	% Slaves		Slaves per 1000 km^2		N. Slaves	
	(1)	(2)	(3)	(4)	(5)	(6)
$RP_i \times$ Input $\times$ Output Price$_t$	0.0150***		180.5***		284.7***	
	(0.00249)		(51.50)		(61.28)	
Land-Rank$_{it}$		-0.0204**		-520.1***		-771.3***
		(0.00810)		(138.4)		(220.0)
Observations	4471	4471	4471	4471	4471	4471
Adj. Within R^2	0.347	0.329	0.428	0.427	0.489	0.487
County FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Region * Year	No	No	No	No	No	No
State * Year	Yes	Yes	Yes	Yes	Yes	Yes
ln(Distance North) * Year	Yes	Yes	Yes	Yes	Yes	Yes
Full Sample	Yes	Yes	Yes	Yes	Yes	Yes
St. Error Cluster Level	County	County	County	County	County	County

Back

Slave Relocation in Old Counties: Alternative Outcomes

	% Slaves		Slaves per 1000 km^2		N. Slaves	
	(1)	(2)	(3)	(4)	(5)	(6)
$RP_i \times$ Input $\times$ Output $Price_t$	0.0149***		145.9**		208.4**	
	(0.00341)		(72.33)		(82.59)	
Land-$Rank_{it}$		-0.0148		-454.3***		-504.7**
		(0.00929)		(159.9)		(231.9)
Observations	2766	2766	2766	2766	2766	2766
Adj. Within R^2	0.342	0.324	0.407	0.410	0.464	0.464
County FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Region * Year	No	No	No	No	No	No
State * Year	Yes	Yes	Yes	Yes	Yes	Yes
St. Error Cluster Level	County	County	County	County	County	County
ln(Distance North) * Year	Yes	Yes	Yes	Yes	Yes	Yes

Back

Detrended Outcome and County Specific Linear Trend

	% Slaves			
	(1)	(2)	(3)	(4)
Ln. Land-Rank	-0.182***	-0.131***	-0.166***	-0.0833*
	(0.0236)	(0.0465)	(0.0347)	(0.0467)
Observations	4534	4534	1718	1718
County FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Region * Year	Yes	Yes	Yes	No
ln(Distance North) * Year	Yes	Yes	Yes	No
Detrended Dep. Var (1790-1800)	No	No	Yes	Yes
County Specific L.T.	No	Yes	No	Yes
Years	1810-1860	1810-1860	1810-1860	1810-1860
Sample	Full	Full	Inhabited since 1790	Inhabited since 1790

Back

Compute Changes in Slaves Due to Slave-Owners Migration

	% of Slave HH	Mean N Slave HH	N Slaves	Slave HH
Land-Rank$_{it}$	-0.106***	-2.800***	-3188.1***	-164.2***
	(0.0327)	(0.989)	(540.5)	(50.11)
Observations	1214	1198	1214	1214
Mean	0.381	6.209	2911.9	353.0
County FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Region * Year	Yes	Yes	Yes	Yes
ln(Distance North) * Year	Yes	Yes	Yes	Yes
Sample	1830-1840	1830-1840	1830-1840	1830-1840
Cluster	County	County	County	County

- The average slaveholding household within the top 164 in 1830 had 14 slaves.
- Migration explains $(164 \times 14)/3188 = .72$

Back

Potential Mechanisms

Back

1. Selection
   - Slave-owning household migrate to places where slavery is more profitable
   - Mechanically affect the political equilibrium

2. Strategic change in voting behavior

3. Changes in social norms
   - Withdraw of planters' patronage/coercion decrease incentives to support slavery
   - Motivated cognition can affect the need to justify slavery

Compute Changes in Votes Due to Slave-Owners Migration

	Change Slave-Owners	Presidential Election	Gubernatorial Election
	% of Slave-Owning Household	% Jacksonian or Democratic	% Jacksonian or Democratic
Land-Rank$_{it}$	-0.106***	-0.364***	-0.580***
	(0.0327)	(0.131)	(0.127)
Observations	1214	1442	1307
County FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Region * Year	Yes	Yes	Yes
ln(Distance North) * Year	Yes	Yes	Yes
Sample	1830 - 1840	1830 - 1840	1830 - 1840

- The average number of voters per slave-holding household is 1.375
- The average number of voters per non slave-holding household is 1.25
- Ratio of voters $1.375 / 1.25 = 1.1$
- Migration explains a drop in $10.6 \times 1.1 = 11.7$pp.
- Share of the effect explained by migration: $11.7 / 36.4 = 32\%$

Back

Mechanisms: Evidence

Migration can explain up to 30% of the political change

Evidence in support of changes in preferences and/or constraints:

- Withdraw of planters' patronage/coercion decrease incentives to support slavery
  - Land-Rank$_{it}$ increases turnout
  - Plantation counties are the ones with more public good
    Data only 1850: investment in schools, literacy rates, books in libraries
- Land-Rank$_{it}$increases free black population
- Consistent with the hypothesis of motivated cognition:
  - Individuals form beliefs to justify theirs actions
  - Slavery became less relevant thus need to justify beliefs shades away

Attitudes toward Free Blacks

"A free negro is an anomaly — a violation of the unerring laws of nature — a stigma upon the wise and benevolent system of Southern labor - a contradiction of the Bible. The status of slavery is the only one for which the African is adapted; and a great wrong is done him when he is removed to a higher and more responsible sphere."

Jackson, Semi-Weekly Mississippian, 21 May 1858

- Higher number of free black in a county could indicates weaker social norms in favor of slavery
- **Prediction:**
  - Decrease in advantage in slave labor $\uparrow$ Land-Rank$_{it}$ $\uparrow$ free black population

Changes in Free Black Population

Back

	% Free on Black	% Free on Total	ln(Free)
Land-Rank$_{it}$	0.0163***	0.00386***	0.283**
	(0.00604)	(0.00144)	(0.116)
Observations	4470	4471	4471
County FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Region * Year	Yes	Yes	Yes
ln(Distance North) * Year	Yes	Yes	Yes

- Share of free black 5-10%

Pulling Factor Fertility

Decline of Slavery Increases Electoral Turnout

Back

	Gubernatorial		Presidential	
	Tournout Adult	Tournout	Tournout Adult	Tournout
Land-Rank	0.296***	0.140***	0.304***	0.135***
	(0.111)	(0.0453)	(0.101)	(0.0412)
Observations	2032	2037	2235	2240
Mean	0.767	0.331	0.695	0.301
County FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Region * Year	Yes	Yes	Yes	Yes
ln(Distance North) * Year	Yes	Yes	Yes	Yes
Cluster	County	County	County	County

Note: Effect of Land-Rank$_{it}$ on the number of votes cast in the presidential and gubernatorial election divided by the the number of white male and white male above 20 years of age. We restrict the analysis to those states that did not have any franchise restriction, we therefore exclude Virginia, North Carolina, Louisiana, and Mississippi.

Crop Adjustment

	ln(Production)		ln(Value)	
	(1) Cotton	(2) Wheat	(3) Cotton	(4) Wheat
Land-Rank$_{it}$	-3.633***	1.276***	-2.858***	1.308***
	(1.082)	(0.396)	(0.888)	(0.409)
Observations	2790	2785	2790	2785
County FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Region * Year	Yes	Yes	Yes	Yes
ln(Distance North) * Year	Yes	Yes	Yes	Yes
Sample	1840-1860	1840-1860	1840-1860	1840-1860

- Median county increases Land-Rank by 300'000 Km^2
- Effect is for 1'000'000 Km^2

Crop Adjustment and Additional Results

Back

Crop adjustment and slave relocation

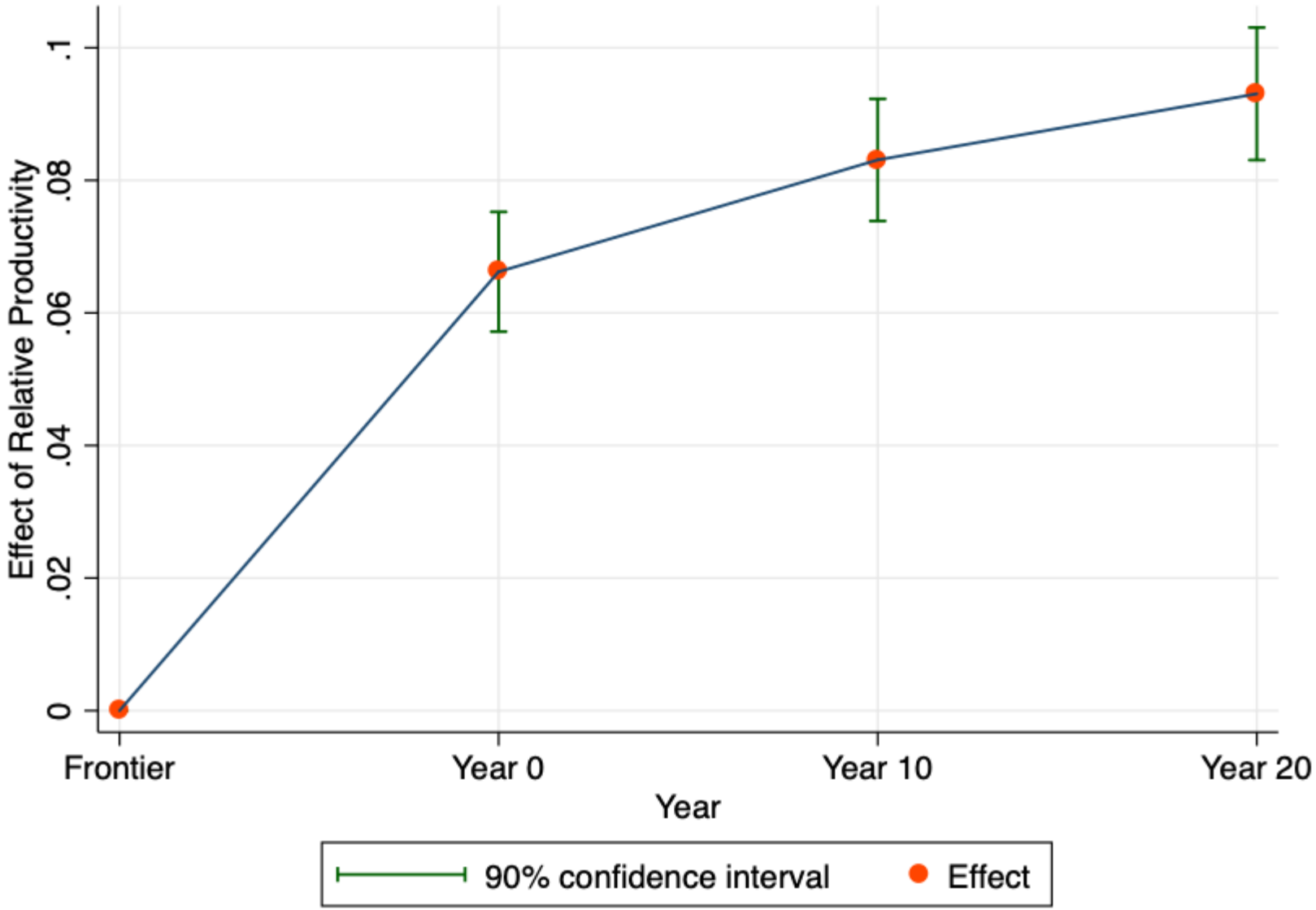
- Effect of Westward expansion on Crop production
  - A county with a median Land-Rank reduced by 1 time the size of cotton production
  - A county with a median Land-Rank increased by 40% the size of wheat production
- The role of crop adjustment in slave relocation:

Map Wheat Map Cotton Map Slaves

- Alternative mechanisms:
  - Slaves and value of the farm
  - Navigable rivers and slave allocation

Effect of Relative Productivity over time in the Frontier

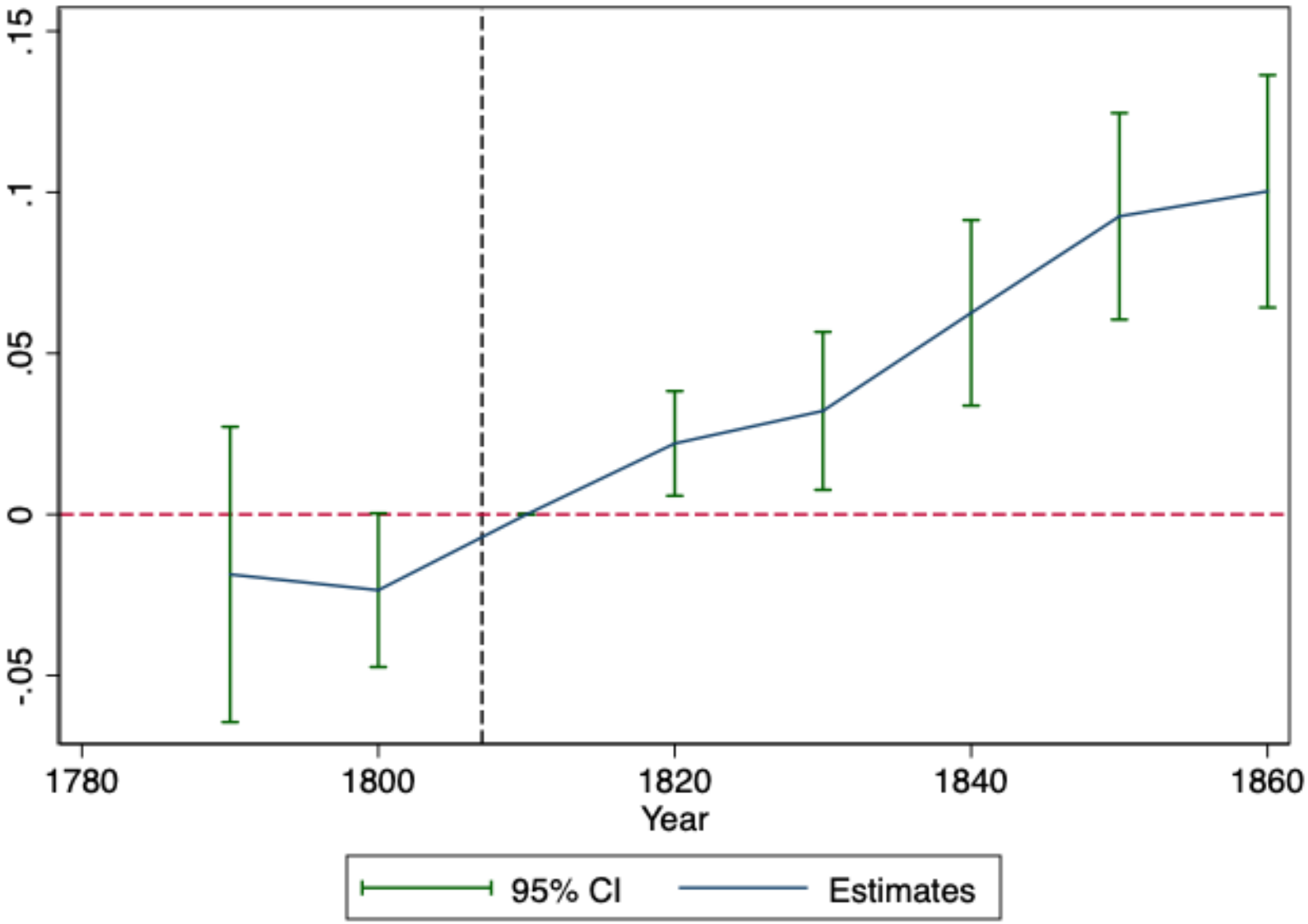
$$y_{i,t} = \alpha_i + \alpha_t + \sum_{j=0,10,20} \beta_j \times \mathbb{1}_{Year\ \ j} \times Z_i + \epsilon_{i,t}$$



Event Study: Slave Trade Abolition 1807

Back

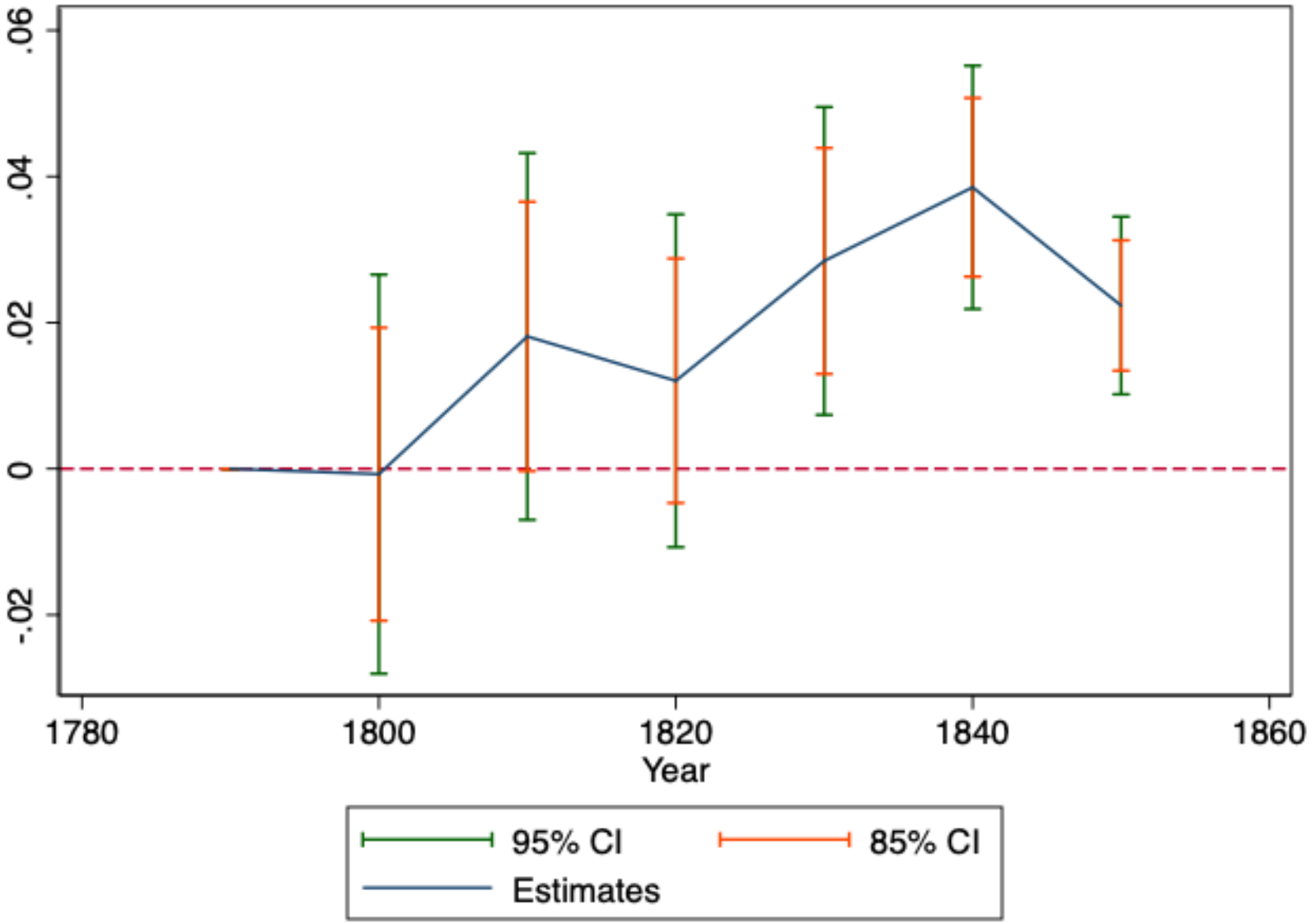
$$y_{i,t} = \alpha_i + \alpha_t + \sum_t \times RP_i \mathbb{1}(Year\ t) + \gamma X_{it} + \epsilon_{i,t}$$



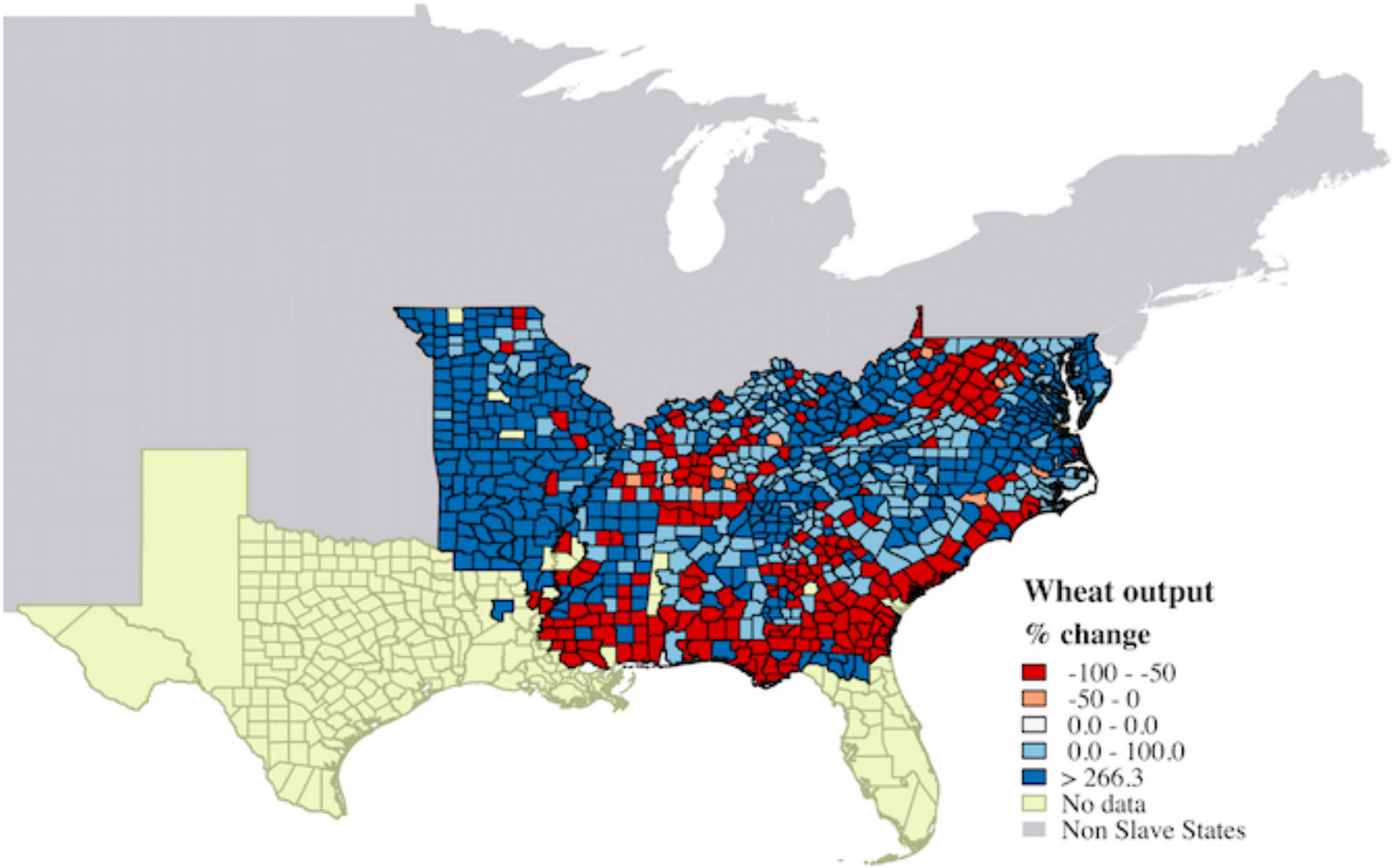
Event Study with County Specific Trends

Back

$$y_{i,t} = \alpha_i + \alpha_t + \alpha_i \times t + \sum_t \times RP_i \mathbb{1}(Year\ t) + \epsilon_{i,t}$$

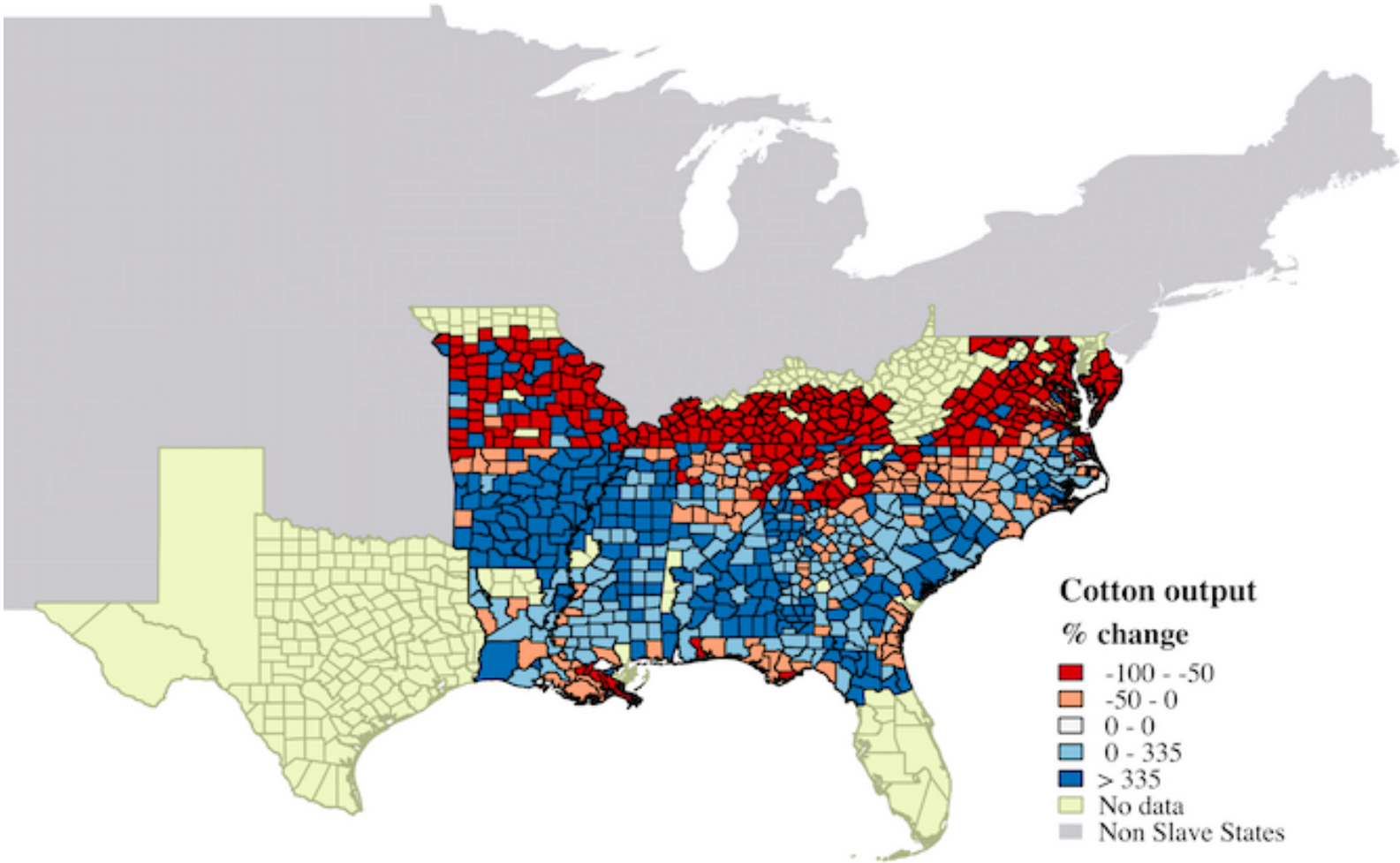


Differences in Wheat Production: 1840 - 1860



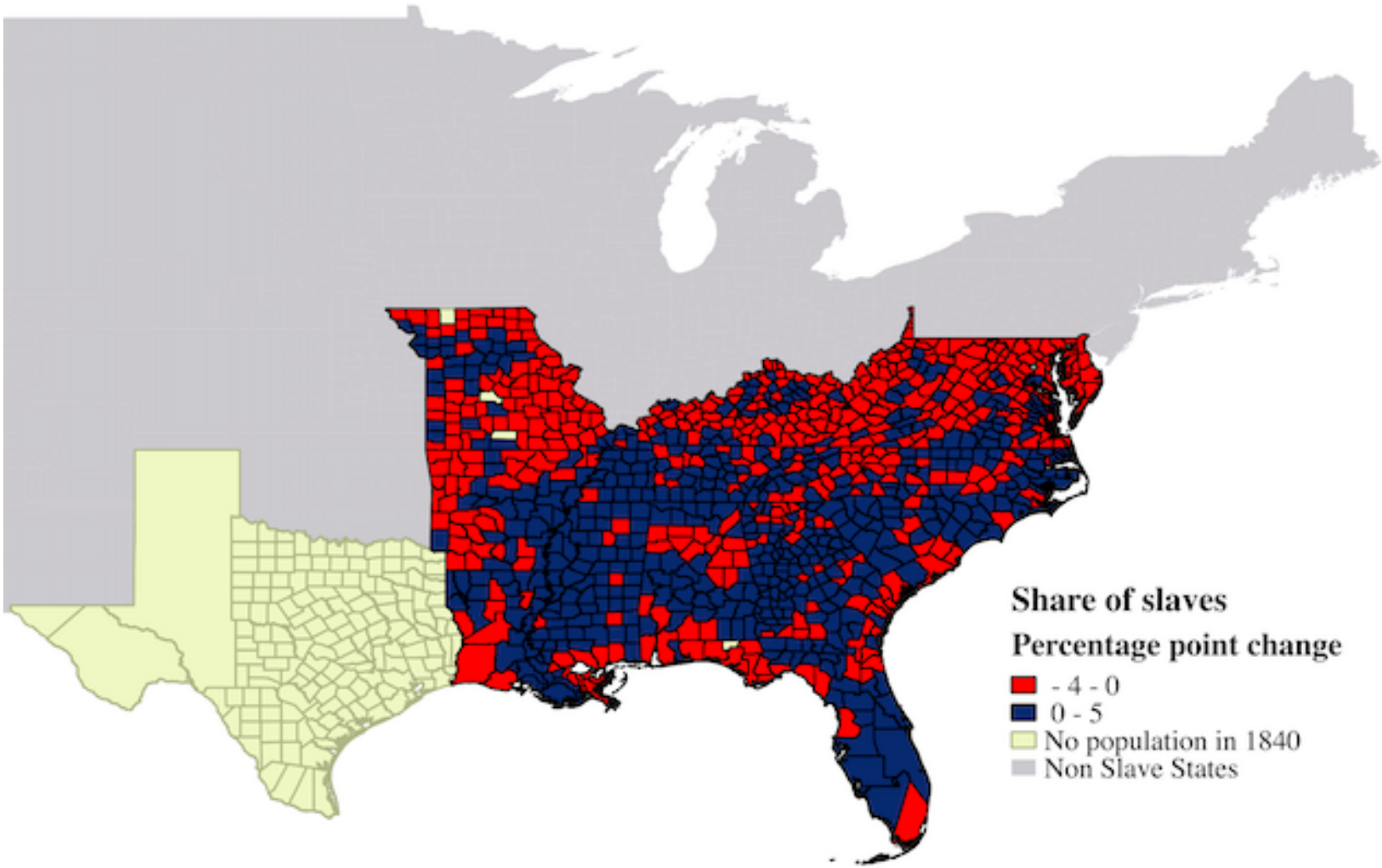
Back Source: NHGIS and ICPSR

Differences in Cotton Production: 1840 - 1860



Back Source: NHGIS and ICPSR

Differences in Share of Slaves: 1840 - 1860



Back

Farm Value and Comparative Advantage

Back

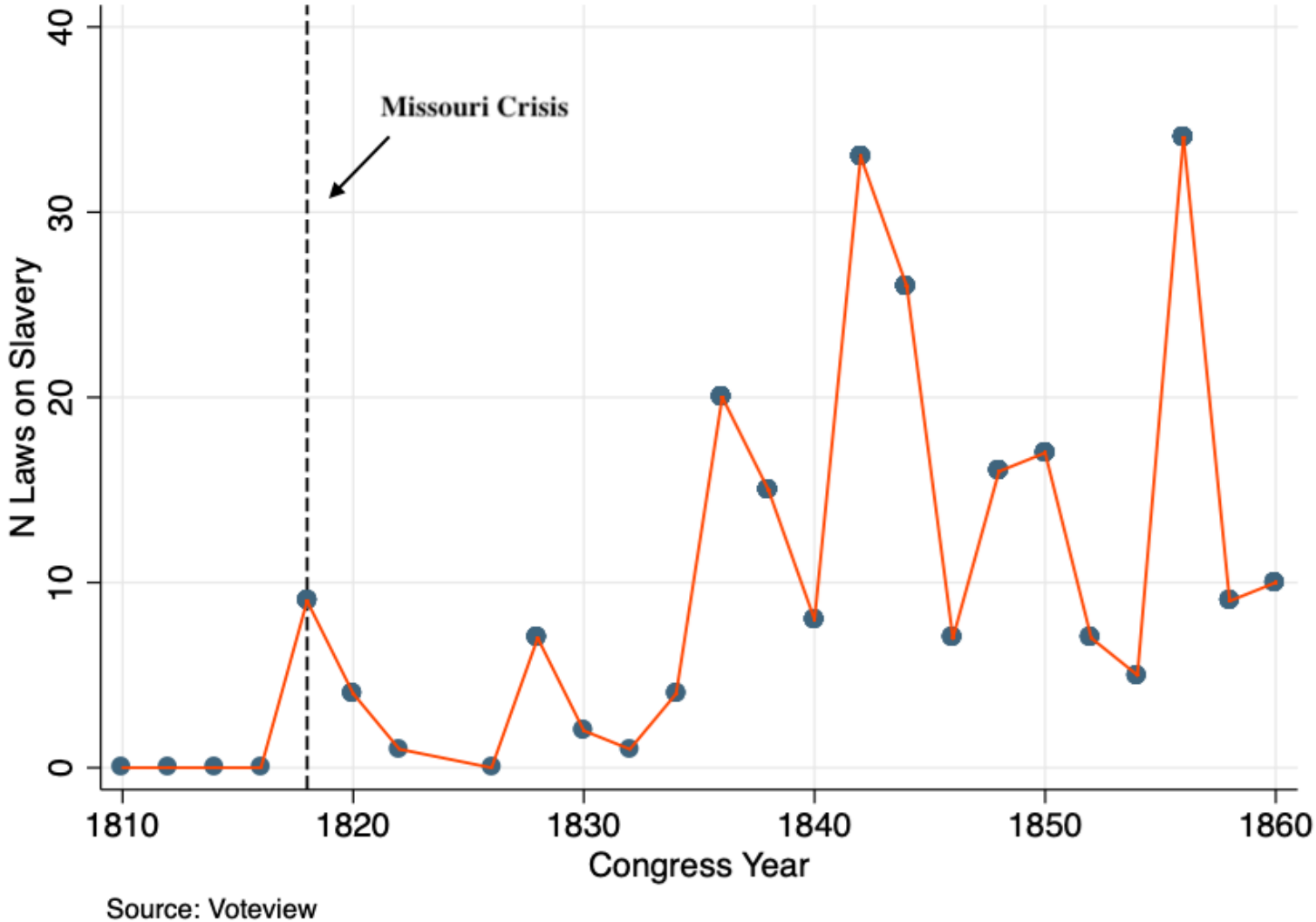
	% Improved Acres	Ln Value of Farms	Ln Value of Equipment	% Slaves
	(1)	(2)	(3)	(4)
Land-Rank	-0.170***	0.987***	1.129***	-0.0920***
	(0.0635)	(0.308)	(0.309)	(0.0290)
% Improved Acres				0.119***
				(0.0162)
Ln Value of Farm Equipment				0.0119**
				(0.00538)
Ln Value of Farms				0.0345***
				(0.00499)
Observations	1936	1934	1934	1934
County FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Region * Year	Yes	Yes	Yes	Yes
ln(Distance North) * Year	Yes	Yes	Yes	Yes
Sample	1850-1860	1850-1860	1850-1860	1850-1860
St. Error Cluster Level	County	County	County	County

Role of Navigable Rivers

Back

	% Slaves	Slaves per 1000 km^2	N. Slaves
	(1)	(2)	(3)
Land-Rank	-0.110***	-1923.2***	-2675.5***
	(0.0141)	(233.2)	(352.8)
Ln Distance to Navigable Rive	-0.00180	-142.5***	-150.0***
	(0.00191)	(33.77)	(53.32)
Observations	4534	4534	4534
Adj. Within R^2	0.198	0.144	0.170
County FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Region * Year	Yes	Yes	Yes
ln(Distance North) * Year	Yes	Yes	Yes
Sample	Full	Full	Full
St. Error Cluster Level	County	County	County

Congressional Votes on Slavery



Source: Voteview

Back

Effect on Party Politics and Polarization

- Differences on slavery across southern parties developed over time

	Federalist vs. Rep-Dem 1818 - 1828		Anti-Jackson Vs. Jacksonian 1828 - 1838		Whig Vs. Democrat 1838 - 1860	
	All Votes	Drop Abstain	All Votes	Drop Abstain	All Votes	Drop Abstain
Difference	-0.0211	-0.0183	-0.1046***	-0.1378***	-0.0951***	-0.0915***
	(0.0301)	(0.0324)	(0.0150)	(0.0178)	(0.0053)	(0.0056)
Observations	1009	835	2915	2280	15851	12515
Number Laws	14	14	34	34	187	187

- Jacksonian and Democratic parties vote more in favor of slavery

Back

Electoral Outcomes: 1828 - 1860

	Presidential Election	Gubernatorial Election
	% Jacksonian or Democratic	% Jacksonian or Democratic
Land-Rank$_{it}$	-0.120***	-0.114***
	(0.0394)	(0.0397)
Observations	5960	6344
County FE	Yes	Yes
Year FE	Yes	Yes
Region * Year	Yes	Yes
ln(Distance North) * Year	Yes	Yes

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

- Average share of Democratic party: 54%
- Share of white male voting in 1860: 70%.

Back

Legislators' Ideology: DW-Nominate scores

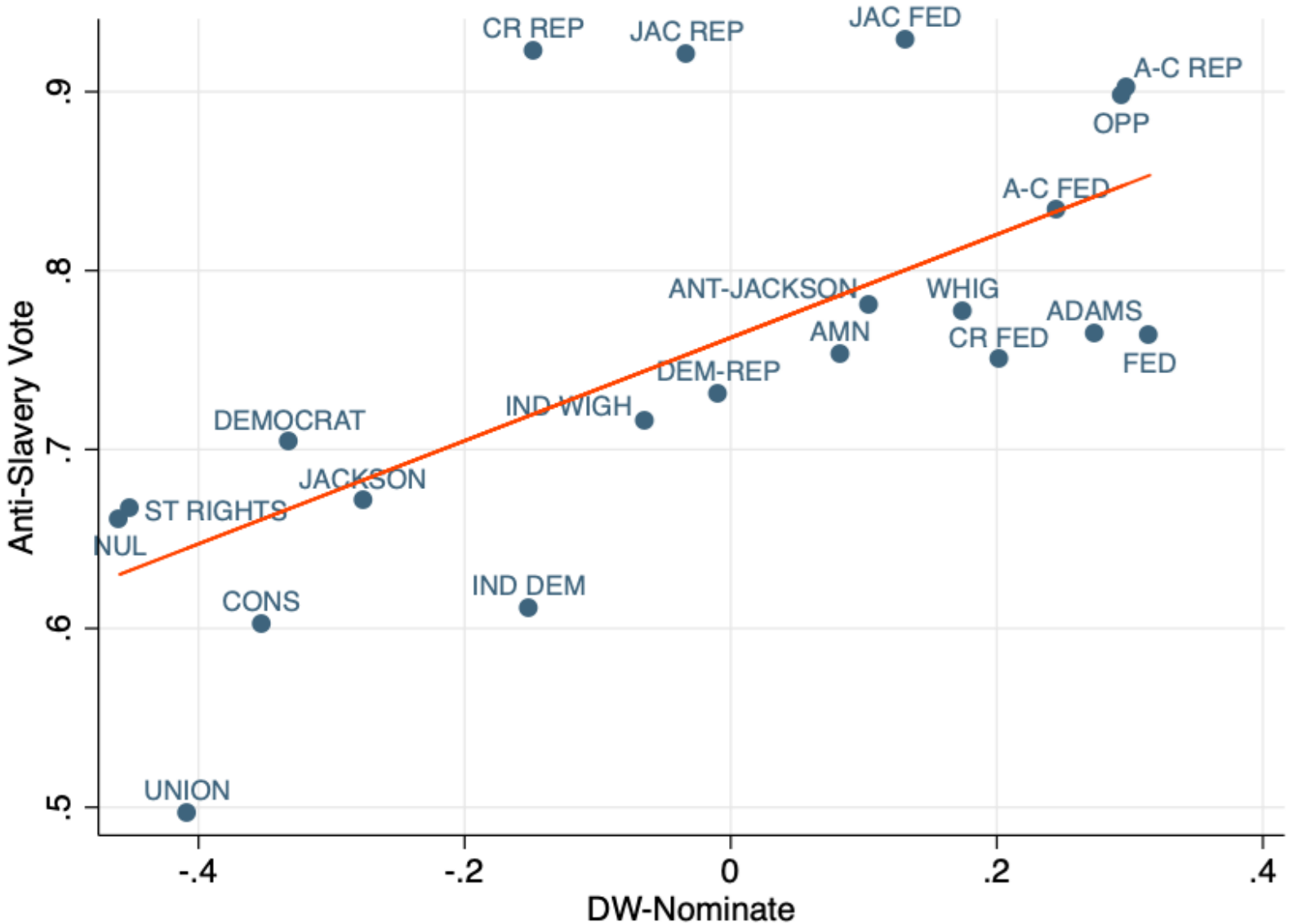
Politicians Voting Behavior: DW-Nominate scores

(Poole and Rosenthal, 1985 and 1991)

- Rank congressional legislators on an ideological scale according to their roll-call votes:
- Each legislator is assigned an ideal point in a 2-dimensional space
- Relative distance between congressmen is a measure of their ideological relative distance
  - **Nominate** - **NP**: Computed for each congressman in a given Congress
  - **Nominate**: Computed for each congressman during all his service
  - **Position**: Relative position w.r.t. the Congress

Back

Political Spectrum: Proslavery Vote and DW-Nominate



Ideology: DW Nominate Score

	Nominate - NP (1)	Nominate (2)	Position (3)	Nominate - NP (4)	Nominate (5)	Position (6)
Land-Rank$_{it}$	-12.94***	-13.09***	-28.12***	-11.43***	-10.59***	-23.76***
	(3.228)	(3.453)	(7.439)	(2.417)	(2.688)	(6.041)
Observations	1575	1575	1575	1570	1570	1570
Cong. District FE	Yes	Yes	Yes	Yes	Yes	Yes
Congress Num. FE	Yes	Yes	Yes	Yes	Yes	Yes
Region * Cong.	Yes	Yes	Yes	Yes	Yes	Yes
ln(Distance North) * Cong.	Yes	Yes	Yes	Yes	Yes	Yes
Party * Cong.	No	No	No	Yes	Yes	Yes

Standard errors in parentheses Clusters: Region $\times$ Year

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Back

Secession Conventions

Cross-sectional Estimates: Relative Productivity explains share of votes in favor of secession

	% Votes for Secession			
	(1)	(2)	(3)	(4)
RP_i	0.111^{***}	0.103^{***}	0.104^{***}	0.111^{***}
	(0.0153)	(0.0162)	(0.0180)	(0.0186)
Observations	660	653	516	509
State FE	Yes	Yes	Yes	Yes
ln(Distance North)	Yes	Yes	Yes	Yes
Agricultural Controls	No	Yes	Yes	Yes
Manufacturing Controls	No	No	Yes	Yes
Religion Controls	No	No	No	Yes

Average votes pro secession 67%

List of Controls Back

Newspaper Ideological Equilibrium Supply

- N partisans nwespapers in area c
- Newspapers n have ideology $g_n \in \{-1, 1\}$
- Level of ideological content published by n is K_n

Newspaper's slant is given by:

$$\rho_n = g_n K_n$$

Individual i in c demands newspaper n iff

$$U_{icn} = \bar{u}_{cn} - \gamma(\rho_n - \text{ideal}_c)^2 + \epsilon_{icn} > 0$$

Newspaper Ideological Equilibrium Supply

Newspaper n choses the level of ideological content K_n to minimize:

$$\gamma(\rho_n - \text{ideal}_c)^2$$

where

$$\rho_n = g_n K_n$$

Equilibrium behavior:

$$\begin{cases} \frac{\partial K_n}{\partial \text{ideal}_c} > 0 & \text{if} \quad g_n = 1 \\ \\ \frac{\partial K_n}{\partial \text{ideal}_c} < 0 & \text{if} \quad g_n = -1 \end{cases}$$

Back

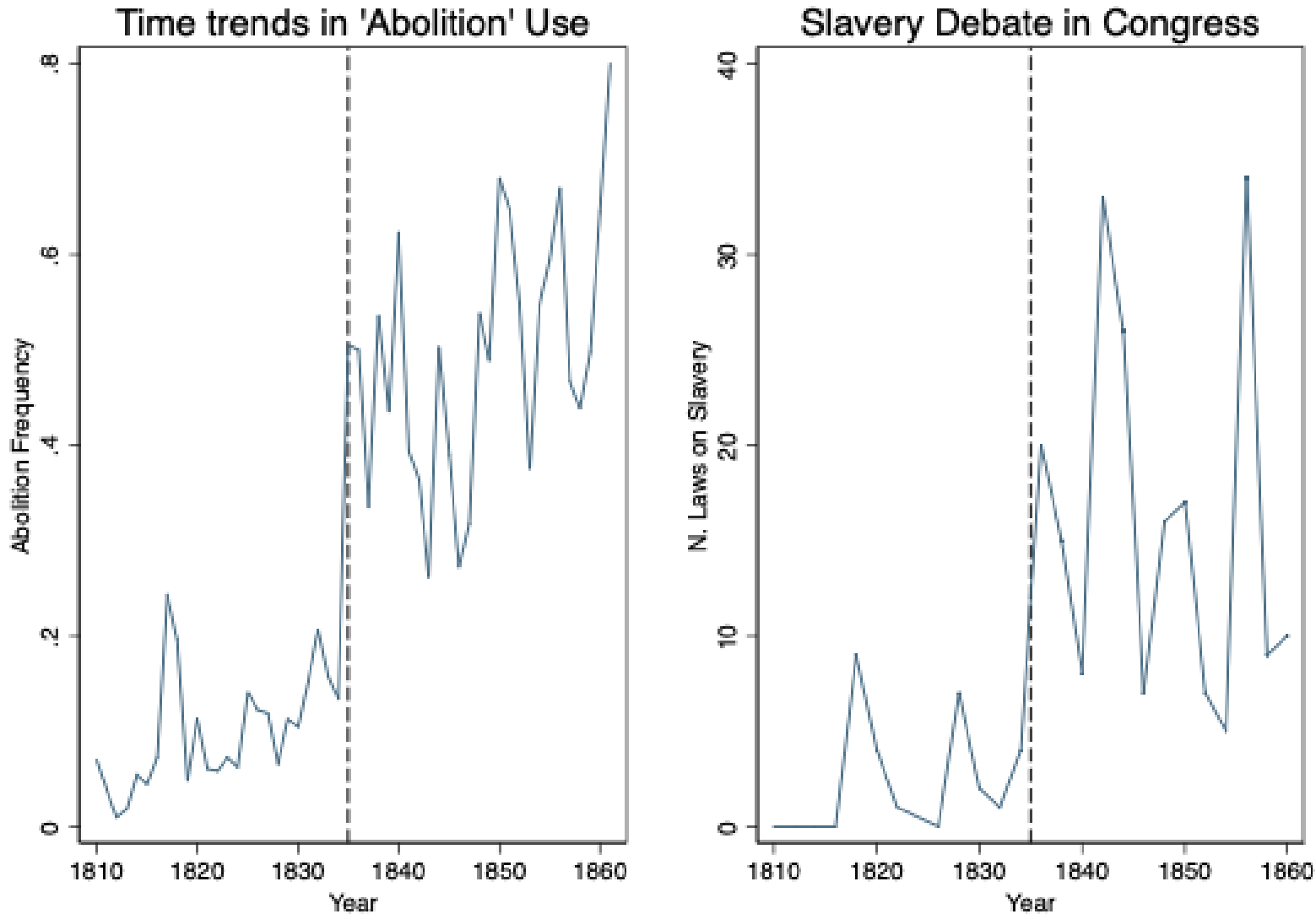
Coding Newspaper's Affiliation: Chronicling America

- "In November 1850, Thomas Palmer, editor/proprietor of the local Whig publication the Southron (1840-50) renamed it the Flag of the Union (1850-53)."

- "The Carrollton Democrat (1852?-1860?) reflected Southern sentiments on the eve of the Civil War: '. . . it is the duty of Congress to protect the slaveholder in the enjoyment of his rights, in the common territories.' Unsurprisingly, the paper supported the southern Democratic Party candidate for President, Kentuckian John C. Breckinridge."

Back

Abolition Salience: Congress and Newspapers

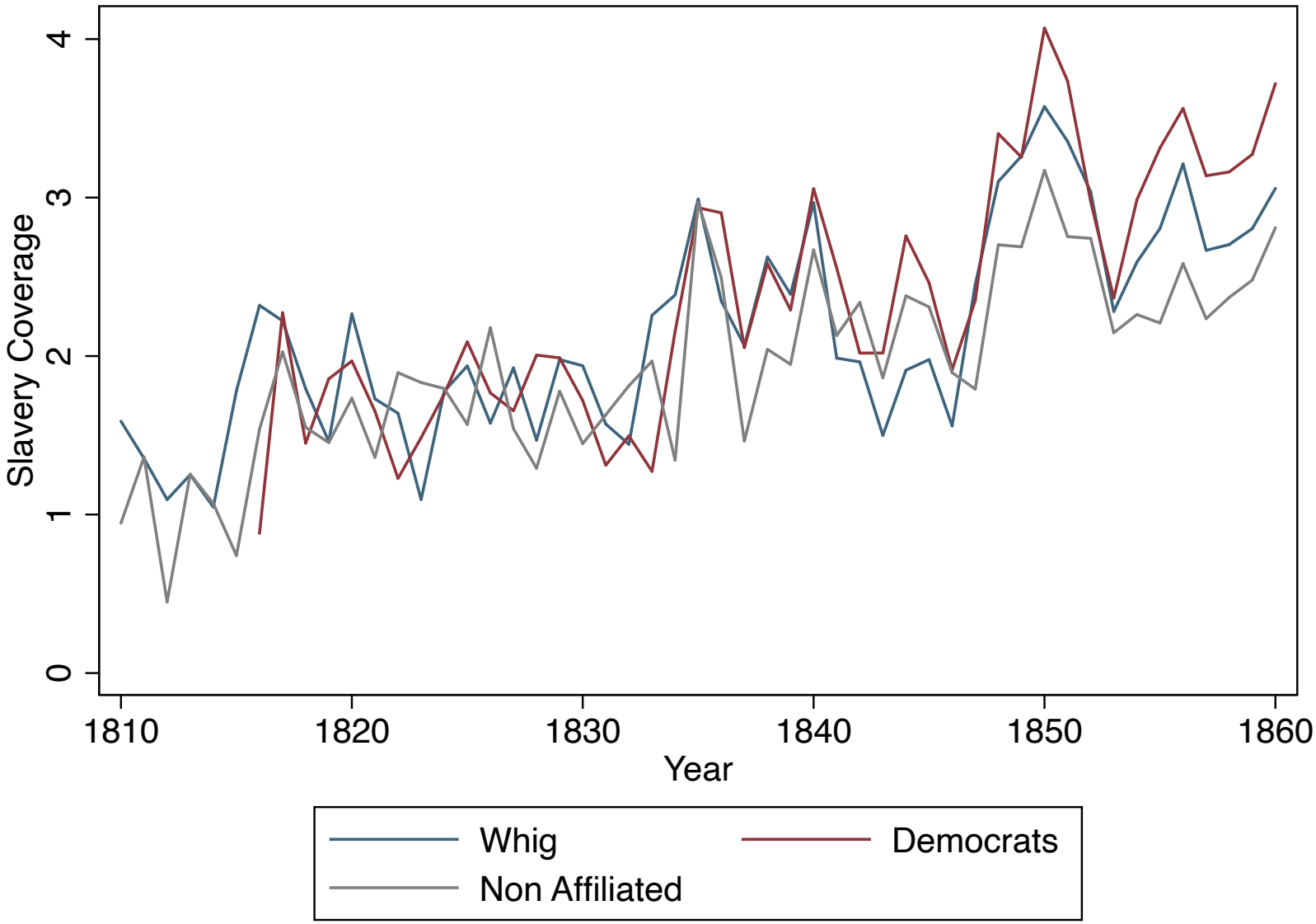


Left: Share of newspaper issues using world abolition per year.

Right: Number of laws on slavery per year. Back

Slavery Coverage by Political Affiliation

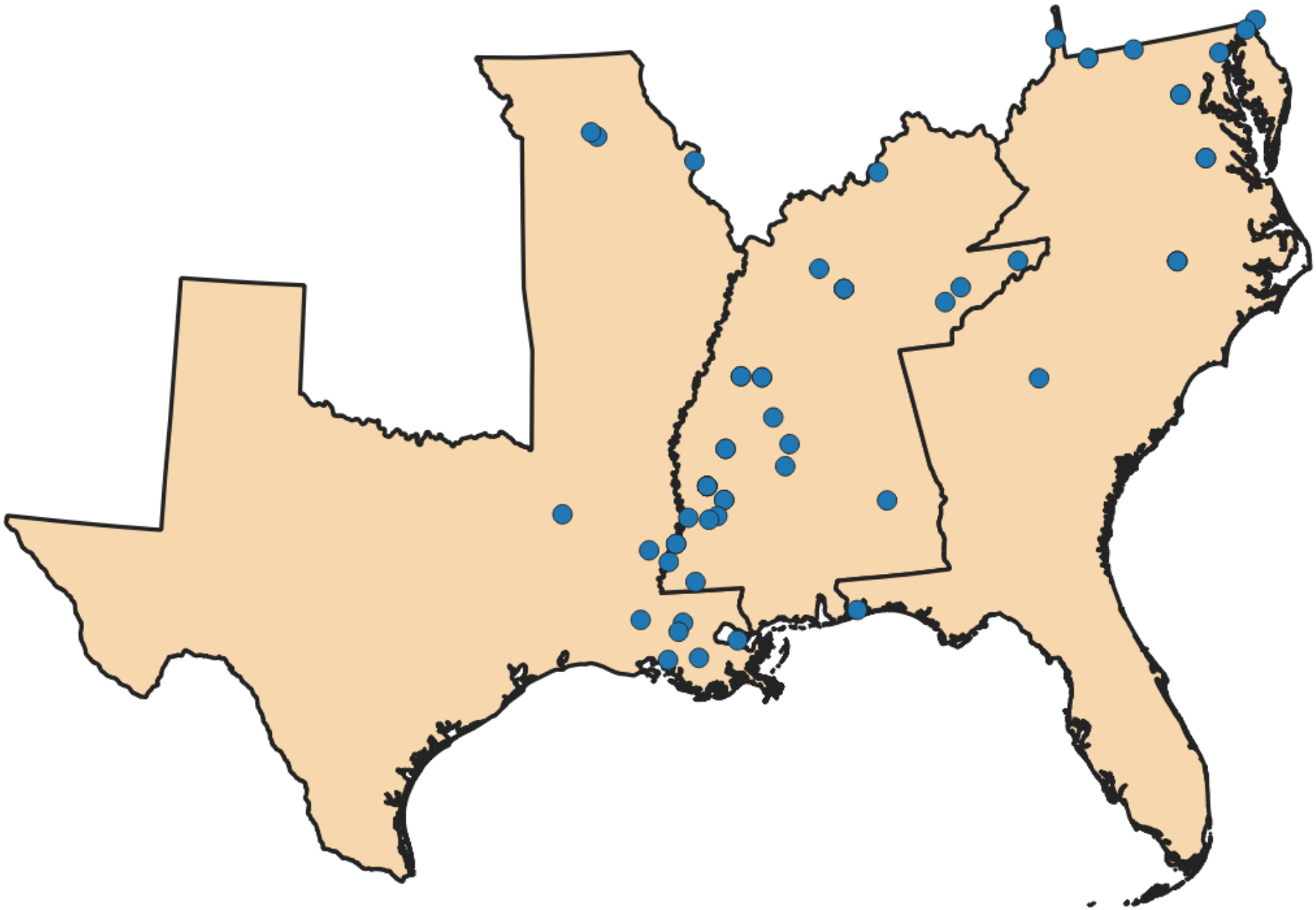
Back



Coverage: Log of average number of slave-related words per issue in a year-newspaper

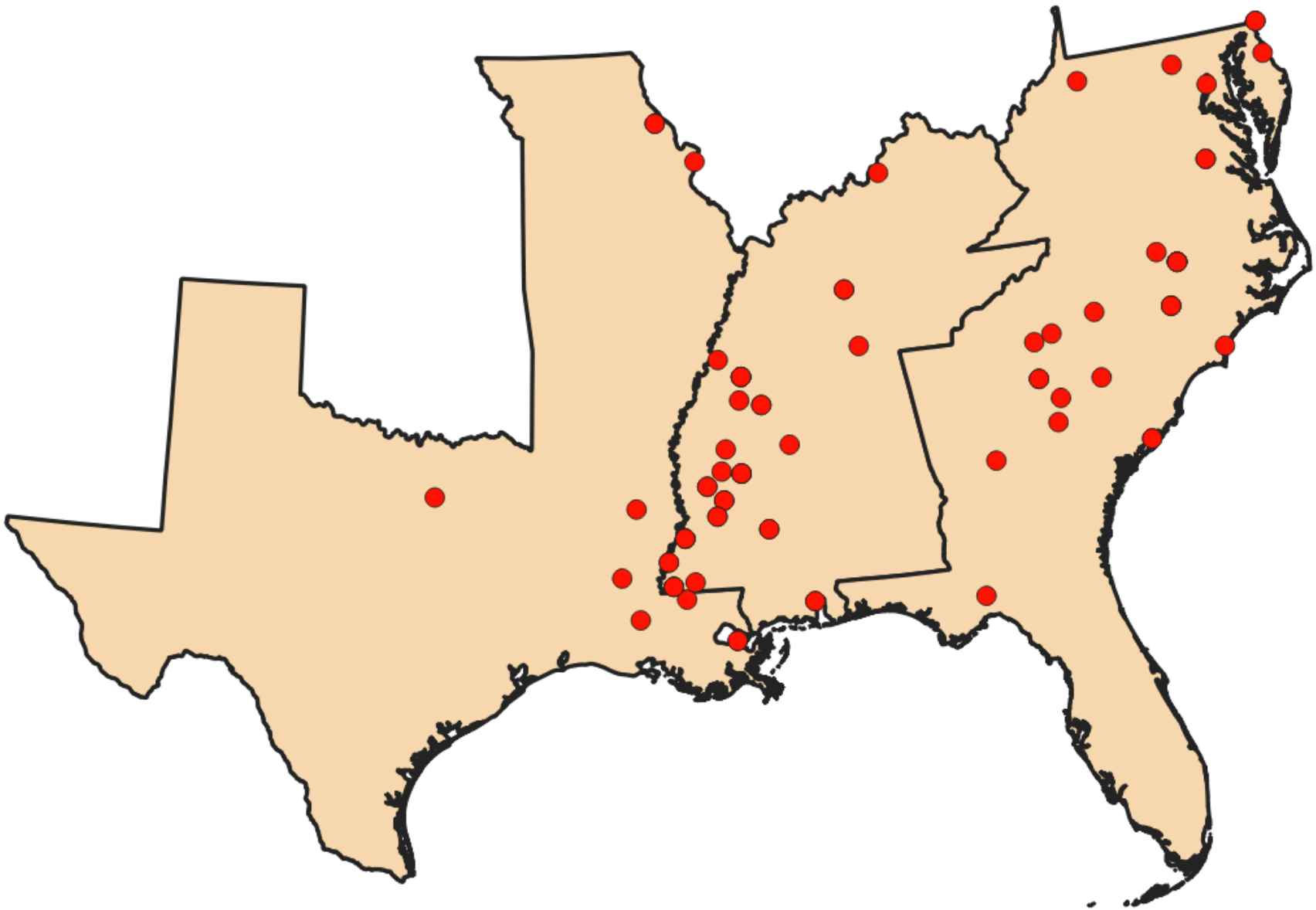
Newspapers' Location: Non Pro-Slavery

Back



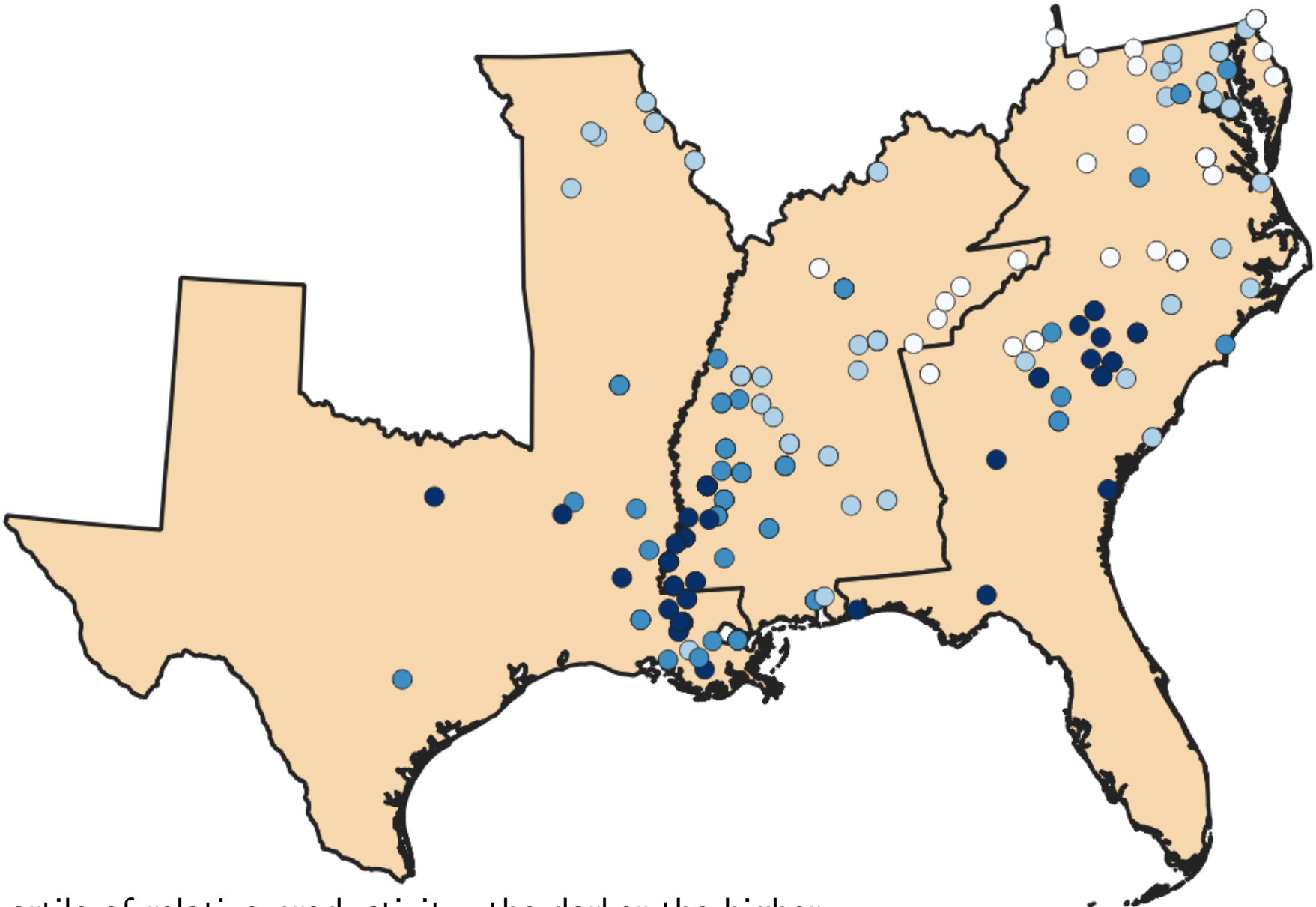
Newspapers' Location: Pro-Slavery

Back



Newspapers' Location: Relative Productivity

Back



Quartile of relative productivity: the darker the higher

Newspapers: Placebo

	Work	Tax	Price	Bibl*	Dollar
Pro-slavery	0.041	-0.367	-0.252	0.065	-0.353
	(0.330)	(0.422)	(0.496)	(0.330)	(0.466)
Other Affiliation	-0.312	-0.164	-0.430	-0.257	0.025
	(0.308)	(0.832)	(0.274)	(0.558)	(0.352)
Observations	1505	1505	1505	1505	1505
Year FE	Yes	Yes	Yes	Yes	Yes
Newspaper FE	Yes	Yes	Yes	Yes	Yes
Affiliation * Year	Yes	Yes	Yes	Yes	Yes
Region * Year	Yes	Yes	Yes	Yes	Yes
ln(Distance North) * Year	Yes	Yes	Yes	Yes	Yes

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Top 20 Bigrams in Sample

Back

United State (8,735)	New York (6,063)	Van Buren (2,618)	Southern State (2,222)
Democratic Party (2,145)	Free State (2,113)	Anti Slavery (2,101)	Slave State (2,028)
South Carolina (1,969)	Fugitive Slave (1,836)	Slave Trade (1,713)	North Carolina (1,629)
Abolition Slavery (1,465)	Whig Party (1,392)	District Columbia (1,387)	Slave Law (1,239)
State Union (1,205)	North South (1,195)	Know Nothing (1,158)	Wilmot Proviso (1,128)

Sample: articles mentioning 'abolition' and 'slavery' at least once. Frequency in parenthesis. *Sources:* Gale and Chronicling America.

Pulling Factors

Back

	% Free on Black		Ln Free Black	
	(1)	(2)	(3)	(4)
Land-Rank$_{it}$	0.0160***	0.0140*	0.255***	0.546***
	(0.00510)	(0.00772)	(0.0911)	(0.178)
Ln Urban Pop.	0.00355***	0.00194**	0.0810***	0.0751***
	(0.00102)	(0.000947)	(0.0109)	(0.0205)
Ln Distance River	0.000683		-0.0291	
	(0.00154)		(0.0310)	
Ln Manufacturing Capital		0.0000936		0.0147***
		(0.000250)		(0.00449)
Observations	4470	2606	4471	2606
Adj. Within R^2	0.271	0.0763	0.282	0.107
County FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Region * Year	No	No	No	No
State * Year	Yes	Yes	Yes	Yes
St. Error Cluster Level	County	County	County	County
ln(Distance North) * Year	Yes	Yes	Yes	Yes
Sample	Full	1840 - 1860	Full	1840 - 1860

Pulling Factors

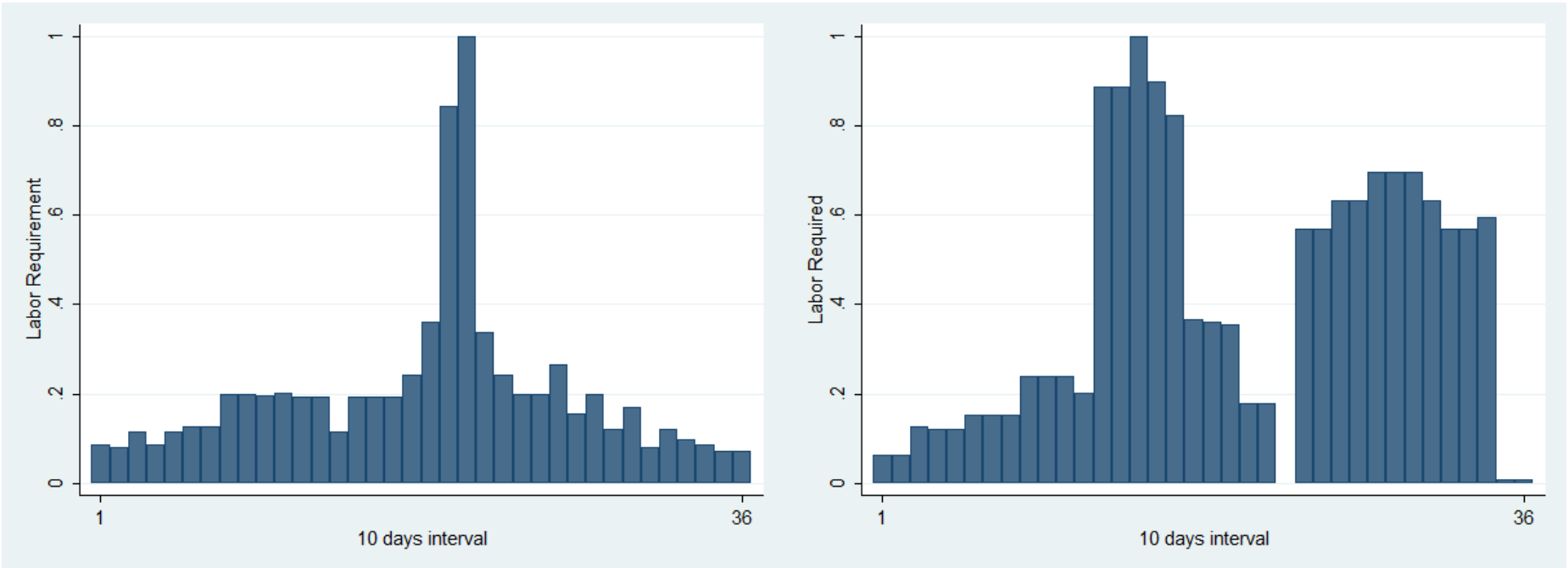
	Free Black Fertility		Slave Fertility	
	(1)	(2)	(3)	(4)
Land-Rank$_{it}$	-0.138	-0.181	-0.088***	-0.092***
	(0.10)	(0.13)	(0.03)	(0.04)
Observations	1250	1250	1933	1933
Mean Dep. Var.	3.896	3.896	3.679	3.679
County FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Region * Year	Yes		Yes	
State * Year		Yes		Yes
ln(Distance North) * Year	Yes	Yes	Yes	Yes

Back

Crop and Labor Choice

1. Higher turnover costs higher advantage in the use of slave labor
   Hanes (1996), Wright (2006)
   - More peaks of labor requirement higher advantage in the use of slave labor (Cotton vs. Wheat)
2. Lengthier labor requirement Earle (1978)
   - Lower average cost of slave labor (Cotton, Sugar, Tobacco vs Wheat)
3. Efficiency gains from the use of "gang labor" system in effort vs. care intensive activities
   - Cotton and Sugar high effort activity
     Fogel and Engerman (1974), Fenoaltea (1984)

Labor Seasonality



(a) Wheat Labor Requirement (b) Cotton Labor Requirement

Source: Yearbook of the Department of Agriculture, 1917 pp. 545-46 in Wright (2006). Washington and Georgia respectively. Back

Agricultural Productivity GAEZ - FAO

Rain fed model:

- For each crop and grid cell the model uses as inputs:
  - Information on lenght of the period when sufficient water is available for crop growth
  - Soil moisture characteristics
  - Temperature characteristics (radiation and temperature)
- Calculate potential biomass production
- Provide an index of crop specific productivity for each grid-cell
  - 0 worst conditions worldwide
  - 100 best conditions worldwide

Back

Data on Slavery and Land Productivity

- GAEZ-FAO (2002) soil productivity database
  FAO-GAEZ Model
- Demographic Information (US Census)
  IPUMS-NHGIS (2018), ICPSR (2010)
  - Enslaved population (1810-1860)
  - Slaveholding household (1810-1840)
  - Agricultural production and Manufacture (1840-1860)
- Geographic Information
  - Network of navigable rivers (1810-1860)
    Atack (2017)

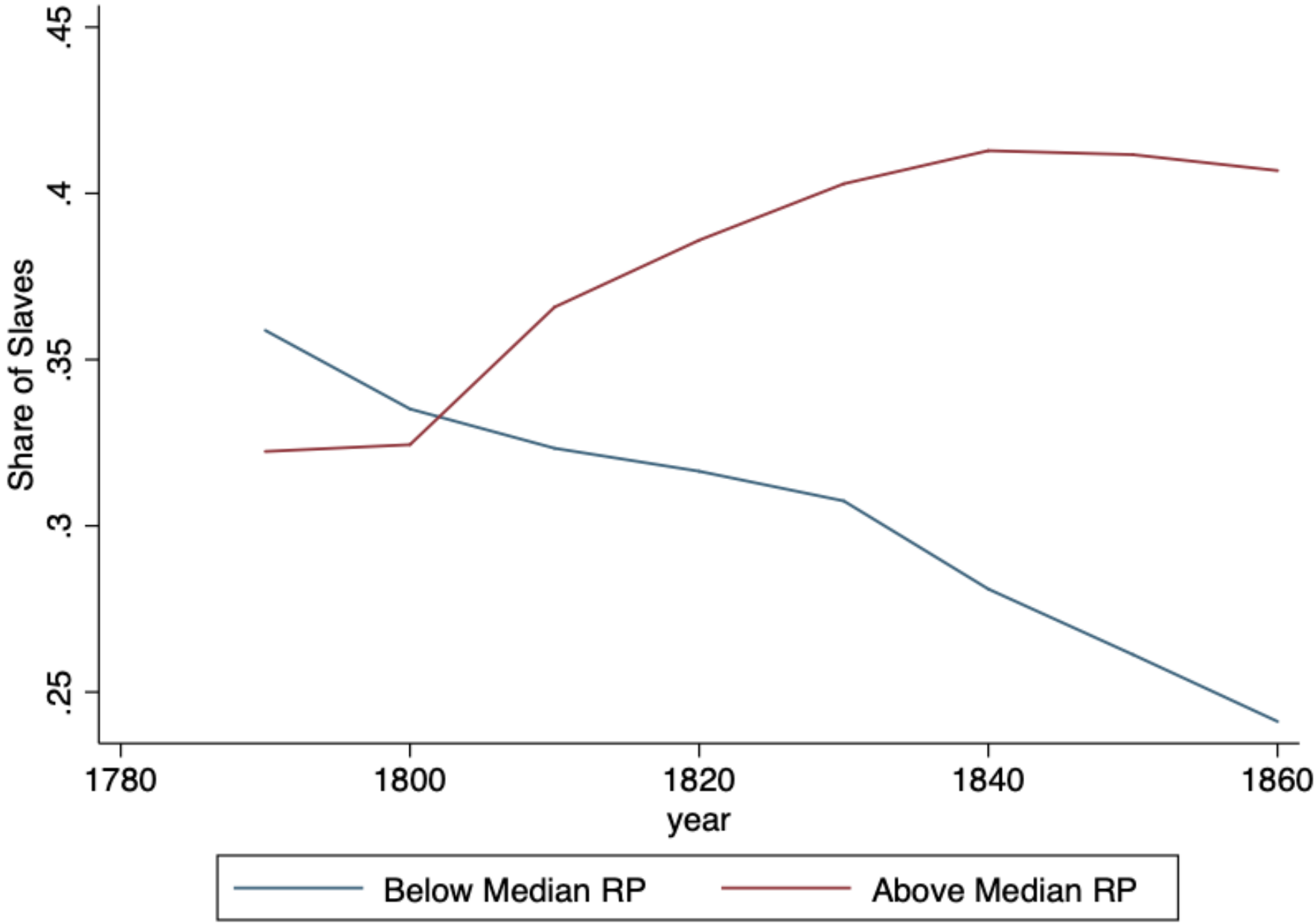
Data on Voting Behavior and Ideology

- Votes
  - Votes share in favor of secession (1860)
    Secession Conventions original sources and Wooster (1954, 1956, 1958)
  - Congressmen votes on issue of slavery (1810-1860)
    Voteview (2019) - Congressmen roll-call votes
  - Parties' votes share (1824-1860)
    ICPSR (1999) - Presidential, Gubernatorial Election

- Ideology and Social Norms
  - Legislator's ideology (1810-1860)
    Voteview (2019) - Congressmen roll-call votes
    Method in Poole and Rosenthal (1985)
  - 285 Souther Historical Newspapers (N $\approx$ 2.7 billion words)
    Chronicling America and Gale(2019)
    Intensity of slavery-related debate
  - Number of free blacks (1810-1860)
    IPUMS-NHGIS (2018)

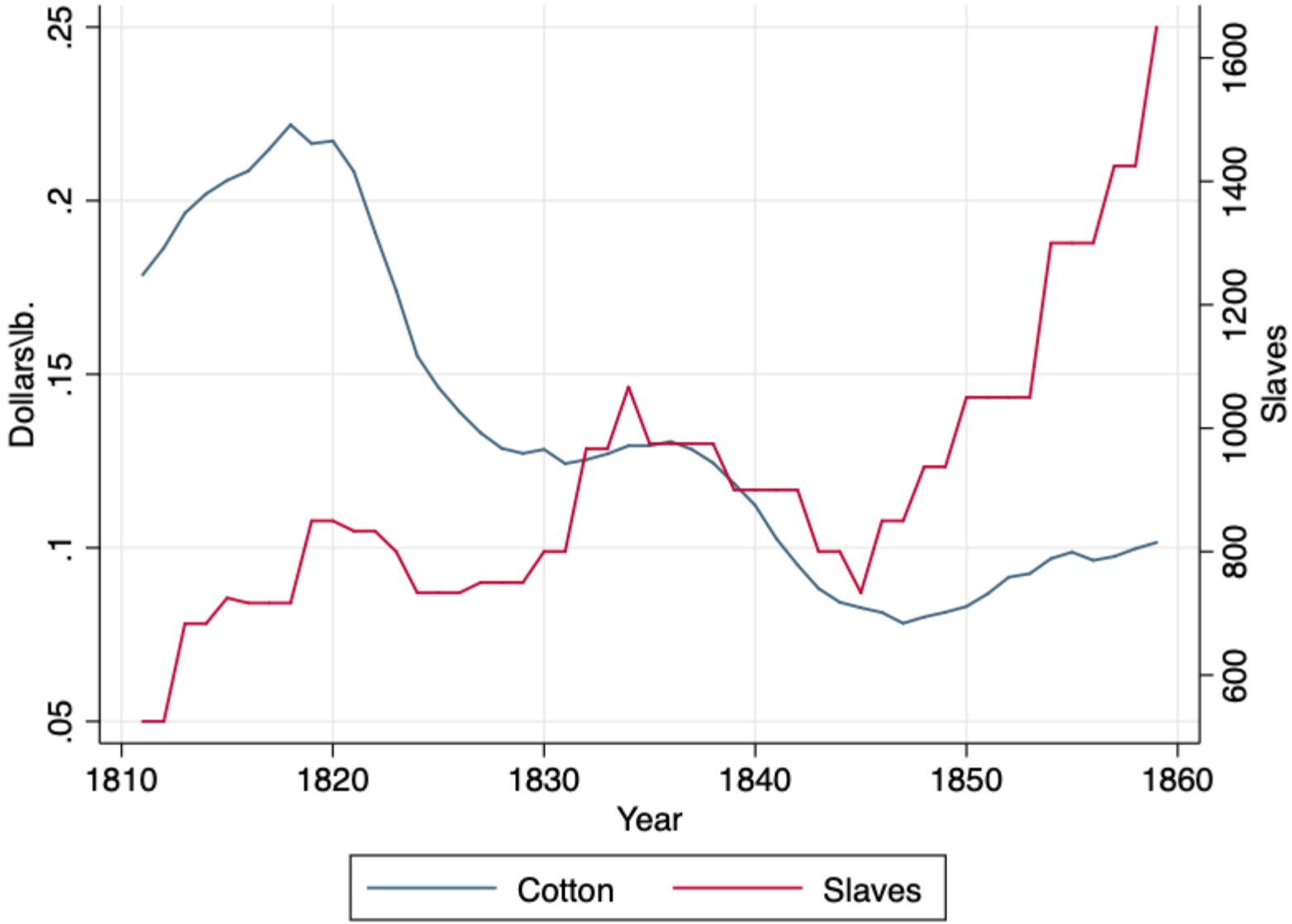
Share of Slaves Below and Above 1860 Median RP

Back



Changes in Prices

Back



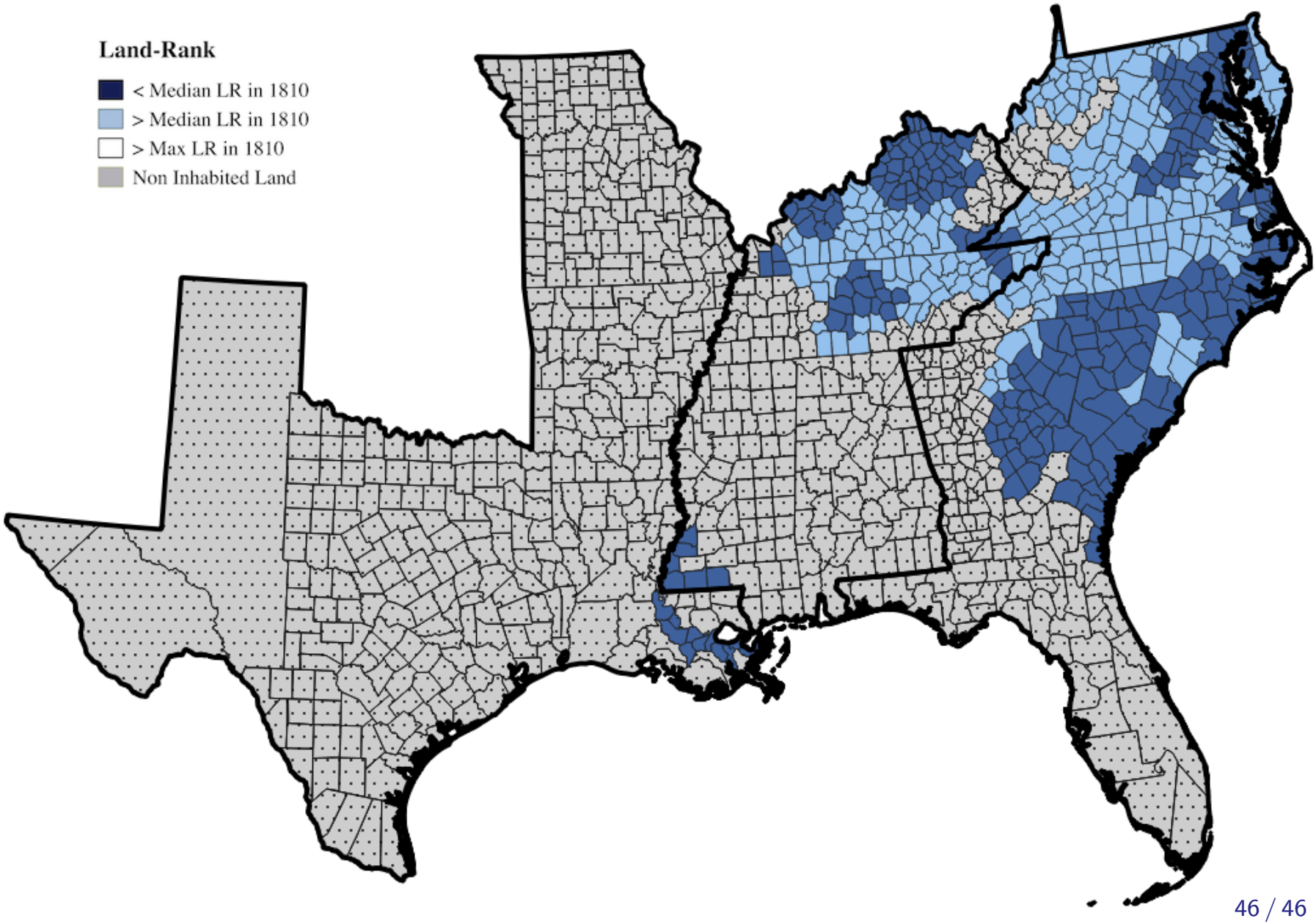
Ten years moving average. Slave prices from Phillips (1905). Cotton prices from Clark (2005).

Controls in Secession Votes

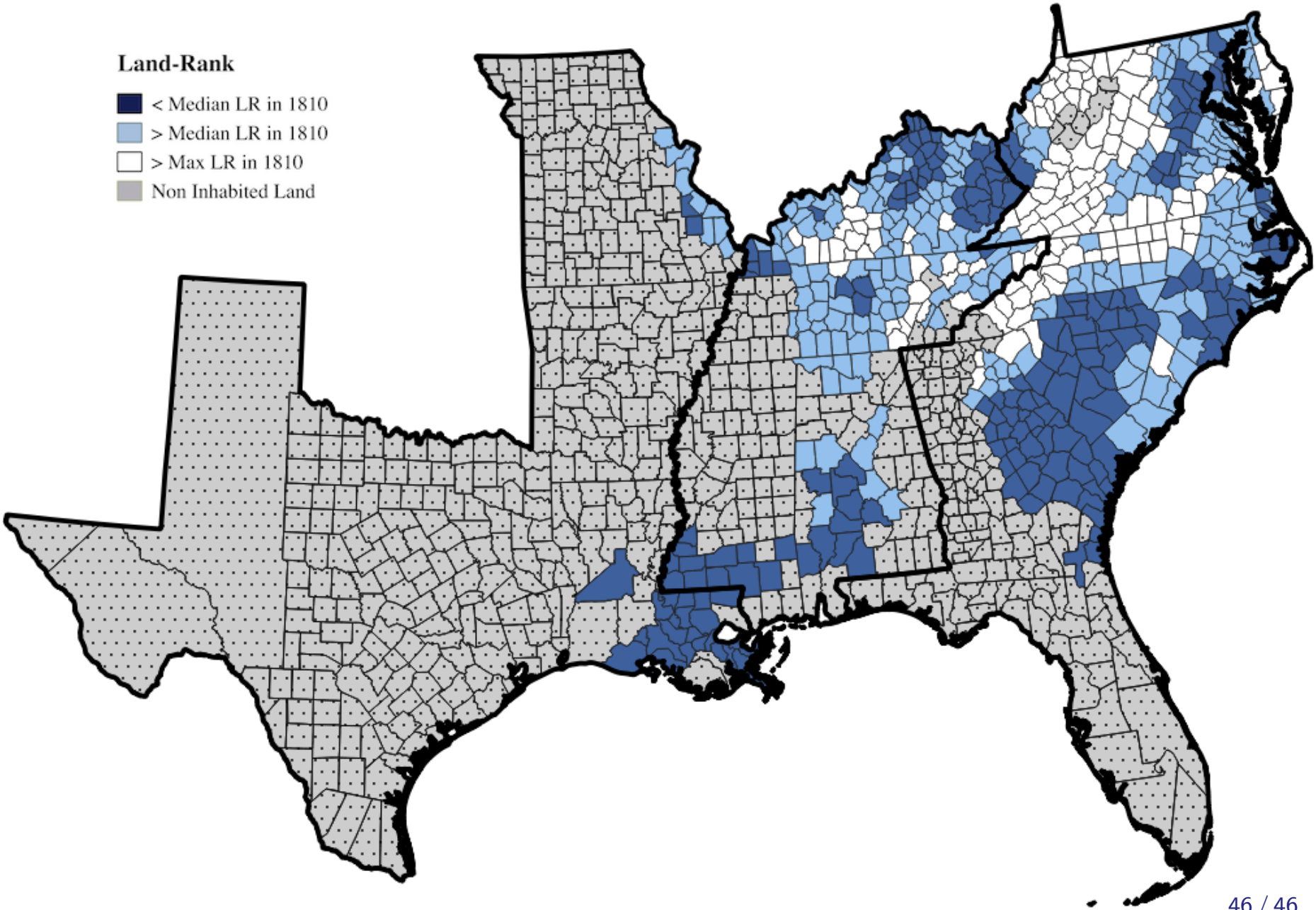
Back

- Agricultural Controls
  - Ln Value of Farms
  - Ln Value of Livestock
  - Ln Value of Farm Equip.
  - % Improved Acres
- Manufacturing Controls
  - Ln Value Home Manufac.
  - Ln Manufacture Raw Material
  - Ln Value Manufacture Output
  - Ln Value Manufacture Capital
  - N. Manufacture Establishment
  - Share of Employed in Manufacture
- Religion Controls
  - Churches per Capita
  - % Baptist Ch.
  - % Methodist Ch.

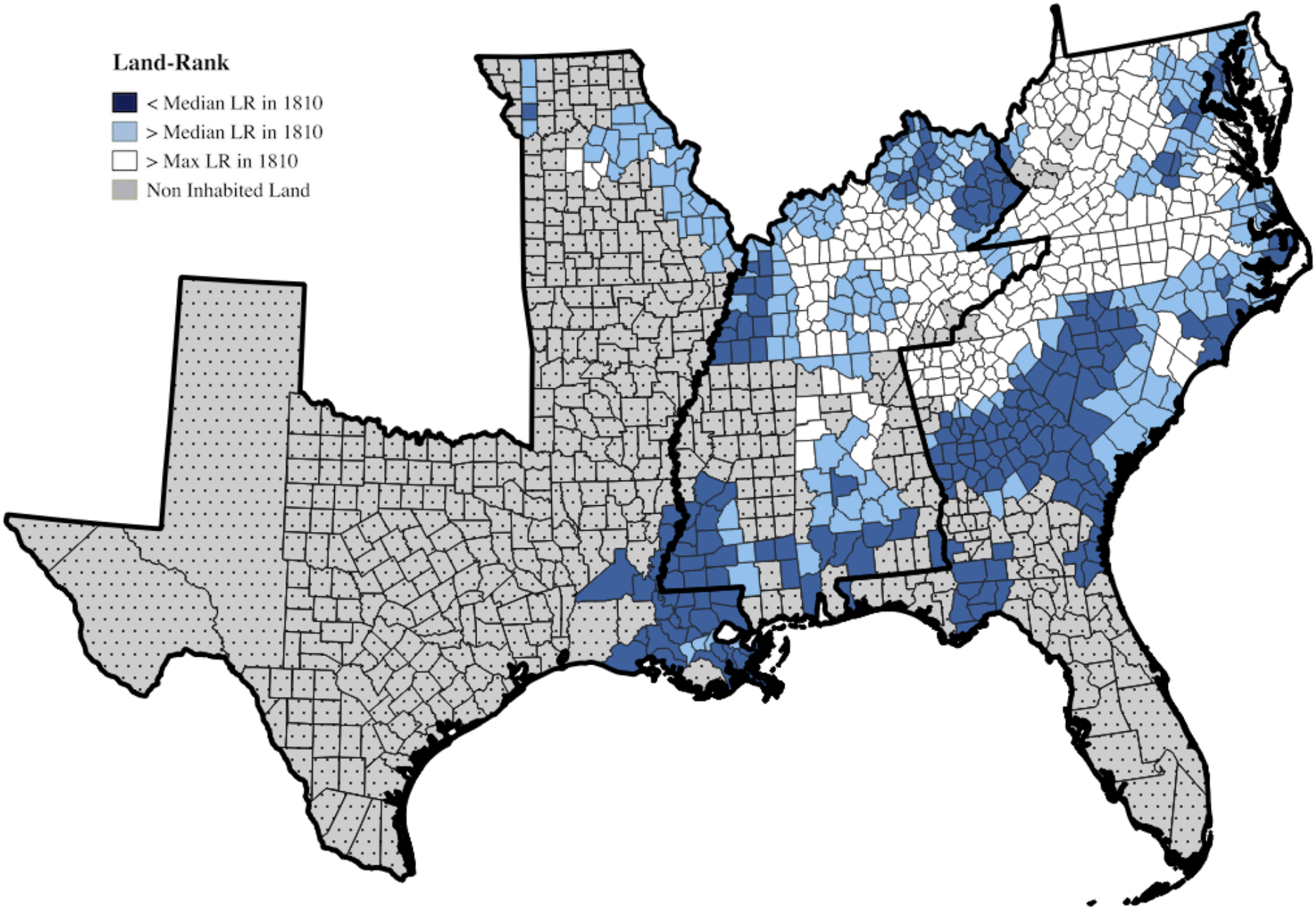
Land Rank in 1810



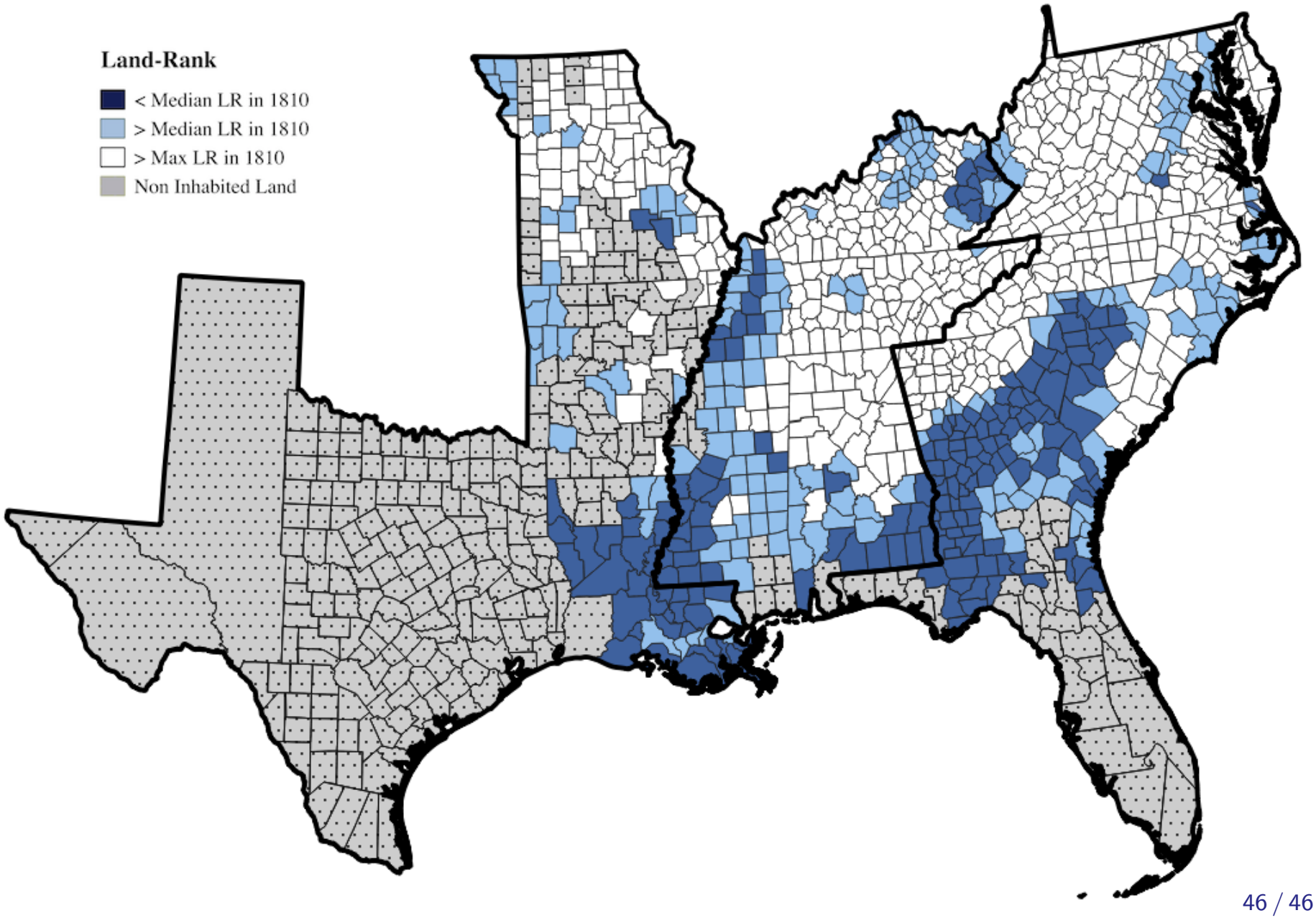
Land Rank in 1820



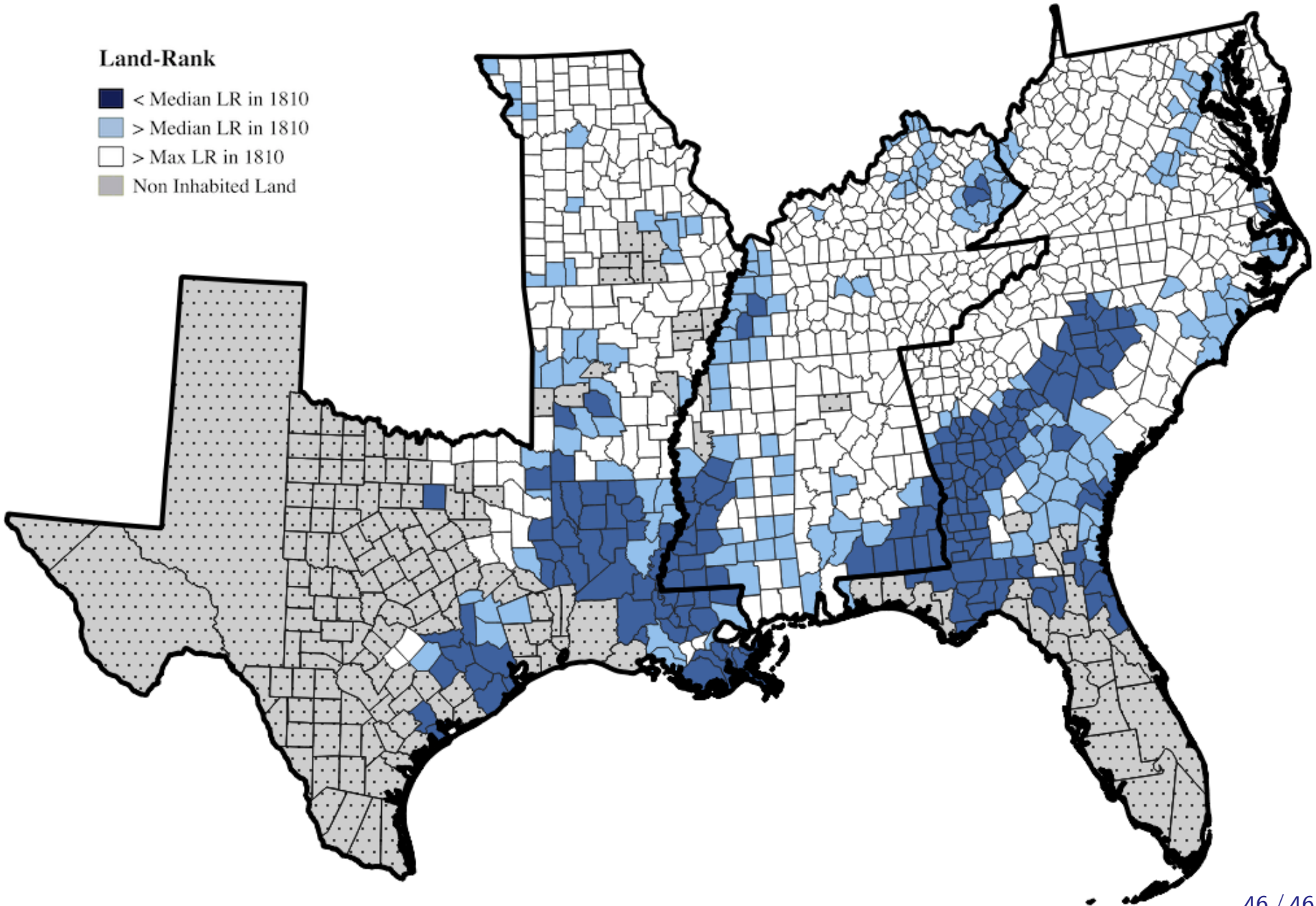
Land Rank in 1830



Land Rank in 1840



Land Rank in 1850



Land Rank in 1860

