Slavery and the American Economy

Scene on a Cotton Plantation.

A Brief History of Slavery

- Slaves came to the New World beginning in the early 1500s on French and Spanish expeditions
- Slaves first arrived in British North America in Virginia in 1619 (just a few miles from here)
- The trans-Atlantic slave trade continued until 1808 when it was banned by both the United States and England
- The internal slave trade continued until the Civil War
- Individual states abolish slavery at different times during the 18th and 19th centuries
- Slavery is officially abolished by the Thirteenth Amendment in 1865

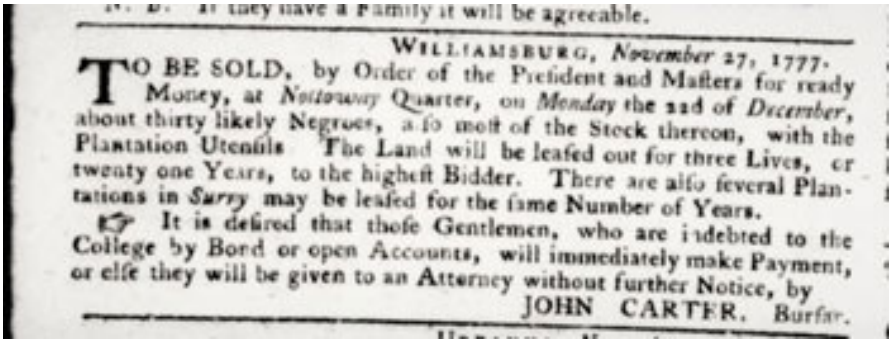
The Trans-Atlantic Slave Trade

A Brief Local History of Slavery

About the latter end of August, a Dutch man of Warr of the burden of a 160 tunnes arriued at Point-Comfort . . . He brought not any thing but 20. and odd Negroes, wch the Governor and Cape Marchant bought for victualls (whereof he was in greate need as he prtended) at the best and easyest rates they could. . . .–John Rolf to Sir Edwin Sandys, 1619

A Brief Local History of Slavery

A Brief Local History of Slavery



If they have a Family it will be agreeable.

WILLIAMSBURG, *November* 27, 1777.

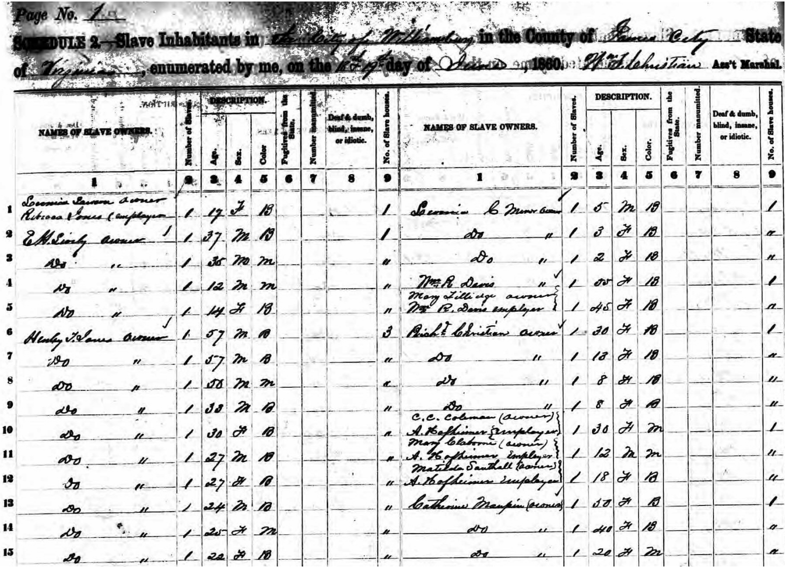
TO BE SOLD, by Order of the President and Maſters for ready Money, at *Nottoway* Quarter, on *Monday* the 22d of *December*, about thirty likely Negroes, alſo moſt of the Stock thereon, with the Plantation Utenſils The Land will be leaſed out for three Lives, or twenty one Years, to the higheſt Bidder. There are alſo ſeveral Plantations in *Surry* may be leaſed for the ſame Number of Years.

☞ It is deſired that thoſe Gentlemen, who are indebted to the College by Bond or open Accounts, will immediately make Payment, or elſe they will be given to an Attorney without further Notice, by

JOHN CARTER, Burſar.

The Lemon Project

A Brief Local History of Slavery



Page No. 1

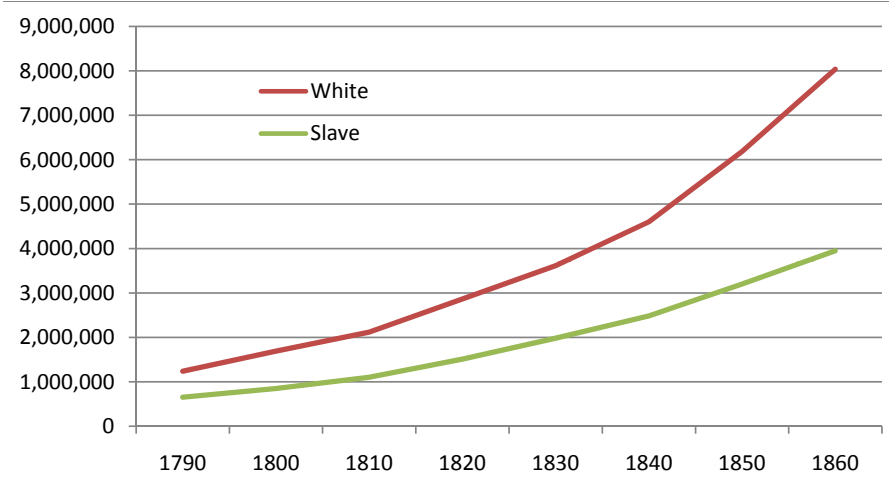
SCHEDULE 2.—Slave Inhabitants in the City of Williamsburg in the County of James City State of Virginia, enumerated by me, on the 18th 19th day of June, 1860. Wm. T. Christian Ass't Marshal.

	Names of Slave Owners. (1)	Number of Slaves. (2)	Description: Age. (3)	Sex. (4)	Color. (5)	Fugitives from the State. (6)	Number manumitted. (7)	Deaf & dumb, blind, insane, or idiotic. (8)	No. of Slave houses. (9)
1	Lavinia Lawson owner / Rebecca Jones (employer	1	17	F	B				1
2	E. H. Lively owner	1	37	M	B				1
3	Do "	1	35	M	M				"
4	Do "	1	12	M	M				"
5	Do "	1	14	F	B				"
6	Henley T. Jones owner	1	57	M	B				3
7	Do "	1	57	M	B				"
8	Do "	1	58	M	M				"
9	Do "	1	33	M	B				"
10	Do "	1	30	F	B				"
11	Do "	1	27	M	B				"
12	Do "	1	27	F	B				"
13	Do "	1	24	M	B				"
14	Do "	1	25	F	M				"
15	Do "	1	22	F	B				"

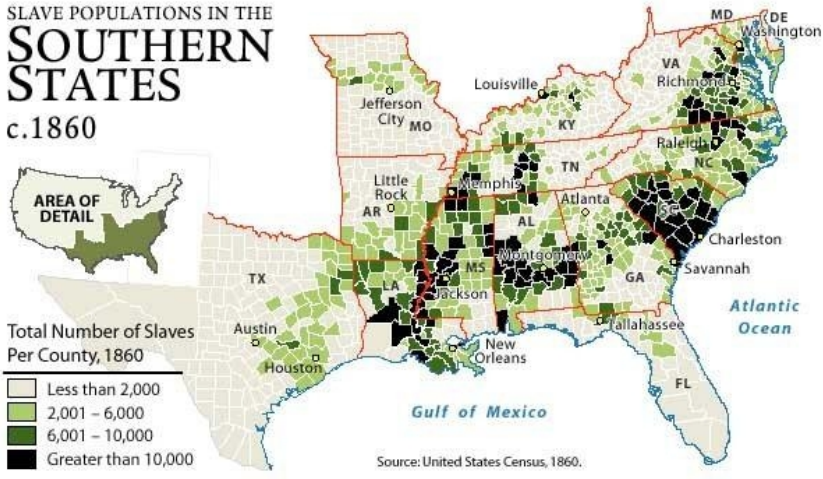
	Names of Slave Owners. (1)	Number of Slaves. (2)	Description: Age. (3)	Sex. (4)	Color. (5)	Fugitives from the State. (6)	Number manumitted. (7)	Deaf & dumb, blind, insane, or idiotic. (8)	No. of Slave houses. (9)
1	Lavinia C Moore owner	1	5	M	B				1
2	Do "	1	3	F	B				"
3	Do "	1	2	F	B				"
4	Wm. R. Davis "	1	55	F	B				1
5	Mary Lillidge owner / Wm. R. Davis employer	1	45	F	B				"
6	Richd. Christian owner	1	30	F	B				1
7	Do "	1	13	F	B				"
8	Do "	1	8	F	B				"
9	Do "	1	8	F	B				"
10	C. C. Coleman (owner) / A. Hofheimer (employer)	1	30	F	M				1
11	Mary Claborne (owner) / A. Hofheimer employer	1	12	M	M				"
12	Matilda Southall (owner) / A. Hofheimer employer	1	18	F	B				"
13	Catherine Maupin (owner)	1	50	F	B				1
14	Do "	1	40	F	B				"
15	Do "	1	20	F	M				"

Slavery Within the United States

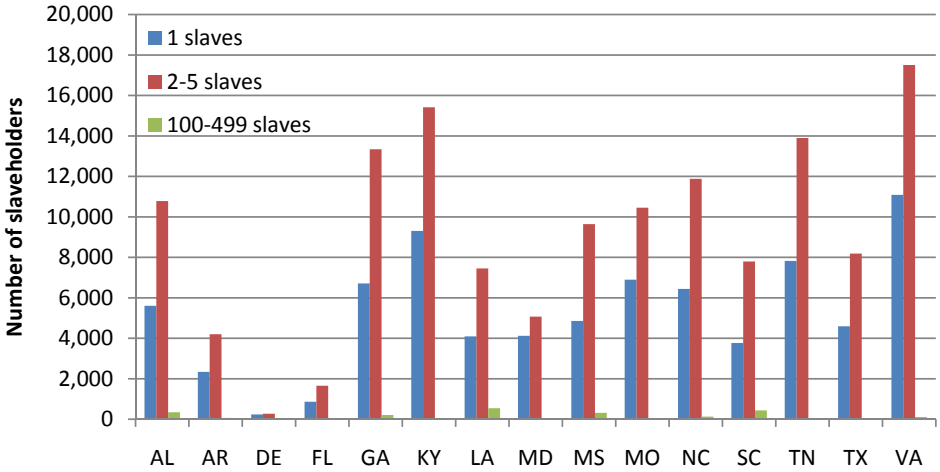
Slave Populations in the South, 1790-1860



Slavery Within the United States

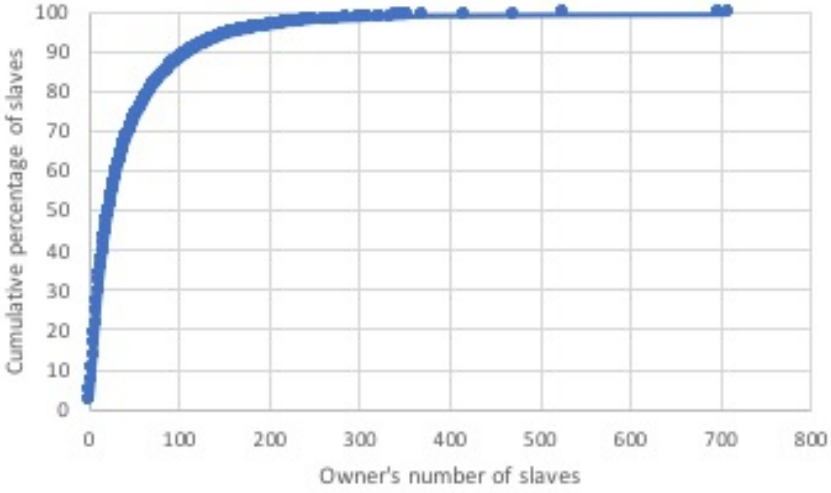


Slaveholders by State and Number of Slaves

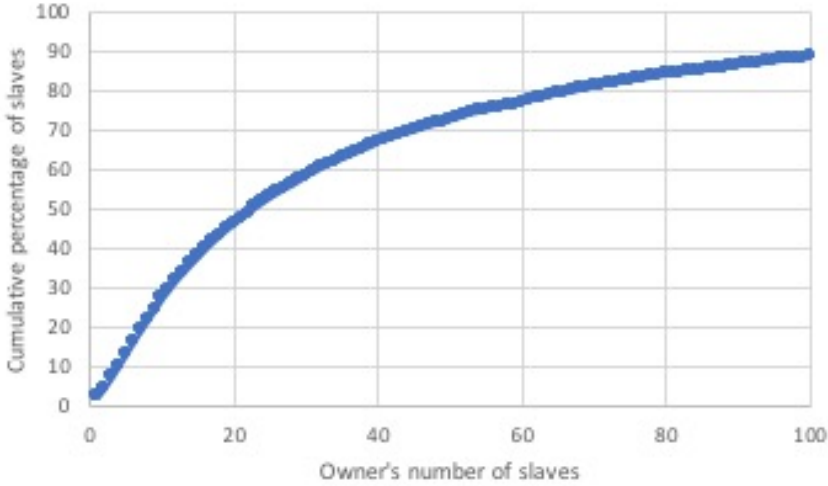


From Historical Statistics of the United States based on federal census slave schedules

Distribution of Slaves



Distribution of Slaves



Some Legal Aspects of Slavery

- Slaves were considered property and the laws governing them were developed from laws regarding personal property, animals, servants and employees
- Laws existed to protect slaves from excessive abuse but still allowed greater punishment than for other employees
- Initially manumission was legal as it was seen as an inherent right of property ownership but by the 1830s, many southern states limited manumission
- Laws regarding slave sales differed from many other types of contracts
- In particular, slave sellers were often required to disclose known defects and were liable for unknown defects
- Laws were often harsh for injuring someone else's slave

Slavery and the Intersection of Law and Economics

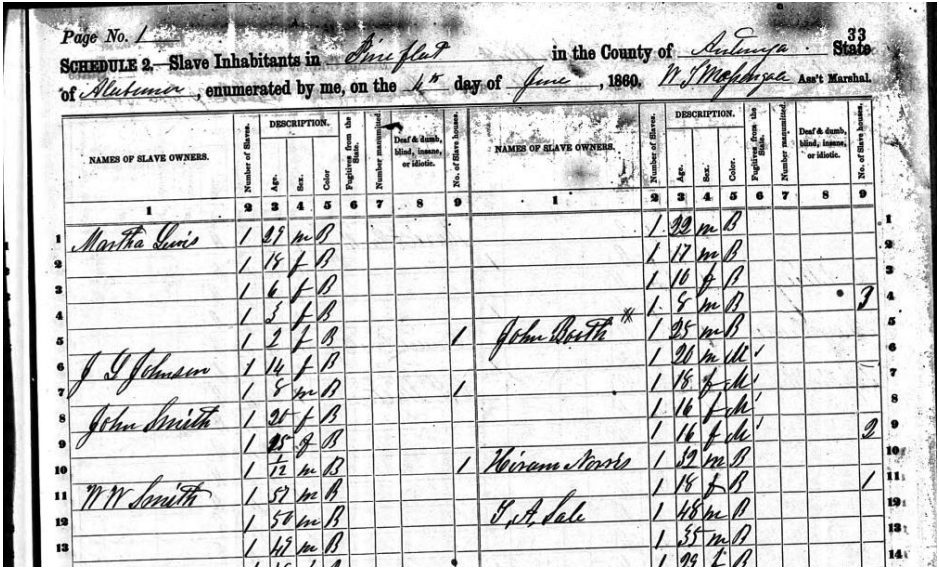
The laws governing slavery were driven in part by economics, some would also provide the foundations for several aspects of consumer protection and contract law that we consider standard today. A few examples:

- Manumission - over time states limited manumission, recognizing that owners had an incentive to free slaves once they were no longer productive
- Laws requiring sellers to disclose defects - some of the first laws recognizing problems of asymmetric information in markets
- Punishment - slaves could be punished more severely than free laborers, part of the justification for this was a difference in available incentive schemes
- Safety - laws made employers of hired slaves and common carriers liable for physical injury to slaves

Studying Slavery

- Because slaves were bought and sold and worked on plantations that kept detailed records, quite a bit of data is available to economic historians
- Data is available both for the market for slaves and for the work slaves did on plantations
- Among the data sources economic historians have used to study slavery:
  - Census slave schedules
  - Slave ship manifests
  - Records of slave sales
  - Probate records
  - Plantation ledgers
  - Slave narratives

Census Slave Schedules



Page No. 1 — 33 — State

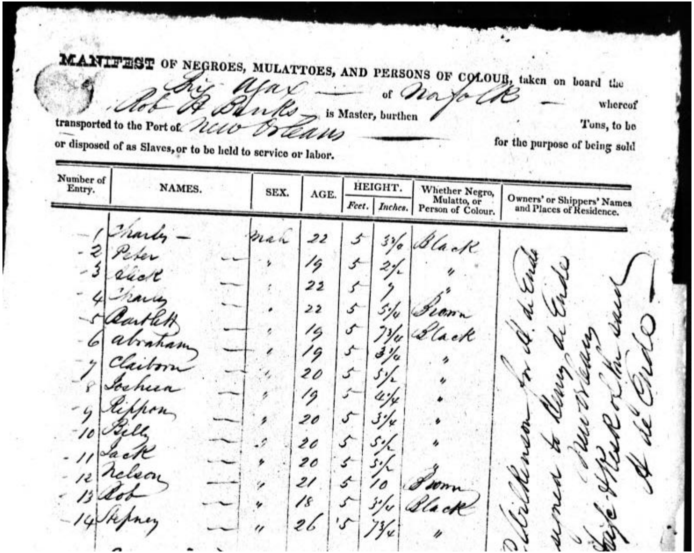
SCHEDULE 2.—Slave Inhabitants in Pine Flat in the County of Sumter

of Alabama, enumerated by me, on the 4th day of June, 1860. W. S. Mayhugh Ass't Marshal.

NAMES OF SLAVE OWNERS.	Number of Slaves.	DESCRIPTION. Age.	Sex.	Color	Fugitives from the State.	Number manumitted.	Deaf & dumb, blind, insane, or idiotic.	No. of Slave houses.
1	2	3	4	5	6	7	8	9
Martha Lewis	1	29	m	B				
	1	14	f	B				
	1	6	f	B				
	1	3	f	B				
	1	2	f	B				1
J. D. Johnson	1	14	f	B				
	1	8	m	B				1
John Smith	1	25	f	B				
	1	25	f	B				
	1	1/12	m	B				1
W. W. Smith	1	57	m	B				
	1	50	m	B				
	1	43	m	B				

NAMES OF SLAVE OWNERS.	Number of Slaves.	DESCRIPTION. Age.	Sex.	Color	Fugitives from the State.	Number manumitted.	Deaf & dumb, blind, insane, or idiotic.	No. of Slave houses.
1	2	3	4	5	6	7	8	9
	1	22	m	B				
	1	17	m	B				
	1	16	f	B				
	1	5	m	B				3
John Booth *	1	25	m	B				
	1	20	m	M	1			
	1	18	f	M	1			
	1	16	f	M	1			
	1	16	f	M	1			2
Hiram Norris	1	39	m	B				
	1	18	f	B				1
J. A. Sale	1	48	m	B				
	1	35	m	B				
	1	29	f	B				

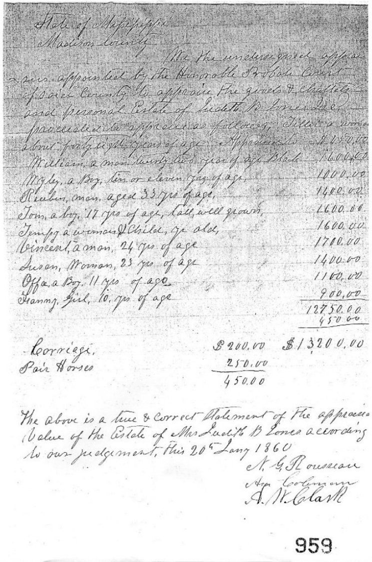
Ship Manifests



MANIFEST OF NEGROES, MULATTOES, AND PERSONS OF COLOUR, taken on board the Brig Ajax — of Norfolk — whereof Rob H Banks is Master, burthen Tons, to be transported to the Port of New Orleans for the purpose of being sold or disposed of as Slaves, or to be held to service or labor.

Number of Entry.	NAMES.	SEX.	AGE.	HEIGHT. Feet.	HEIGHT. Inches.	Whether Negro, Mulatto, or Person of Colour.	Owners' or Shippers' Names and Places of Residence.
1	Charley	male	22	5	3¾	Black	
2	Peter	"	19	5	2½	"	
3	Dick	"	22	5	7	"	
4	Harry	"	22	5	5¼	Brown	
5	Bartlett	"	19	5	7¾	Black	
6	abraham	"	19	5	3¾	"	
7	Claiborn	"	20	5	5½	"	
8	Joshua	"	19	5	4¼	"	
9	Rippon	"	20	5	3¼	"	
10	Billy	"	20	5	5½	"	
11	Jack	"	20	5	5½	"	
12	Nelson	"	21	5	10	Brown	
13	Rob	"	18	5	3¼	Black	
14	Stepney	"	26	5	7¾	"	

Probate and Auction Records



State of Mississippi
Madison County

We the undersigned appraisers appointed by the Honorable Probate Court of said County to appraise the goods & chattels and personal Estate of Judith B Jones Dec proceeded to appraise as follows, Tiller a woman about forty eight years of age Appraised to $450.00

William, a man twenty two years of age Black	1600.00
Wyley, a Boy, ten or eleven yrs of age,	1000.00
Reuben, man, aged 33 yrs of age,	1400.00
Tom, a boy, 17 yrs of age, tall, well grown,	1600.00
Jempy a woman & Child, yr old,	1600.00
Vincent, a man, 24 yrs of age	1700.00
Susan, Woman, 23 yrs of age	1400.00
Offa, a Boy, 11 yrs of age	1100.00
Fanny, Girl, 10. yrs of age	900.00
	12750.00
	450.00
	$13200.00

Carriage,	$200.00	
Pair Horses	250.00	
	450.00	

The above is a true & correct statement of the appraised value of the Estate of Mrs Judith B Jones according to our judgement, this 20th Jany 1860

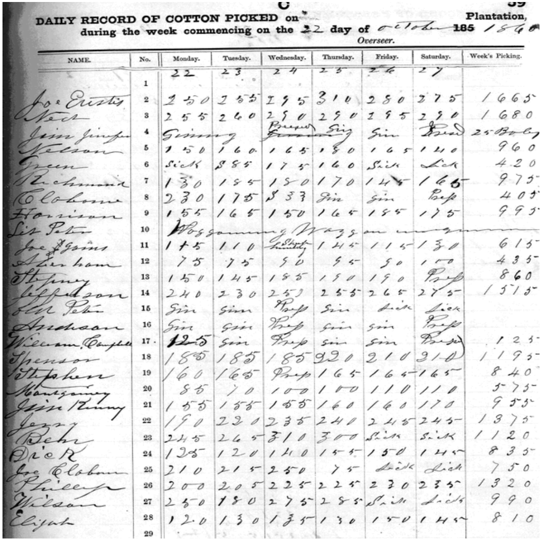
N. G. Rousseau
Asa Coleman
A. W. Clark

959

Probate and Auction Records

4 Iron Pott Racks 30/. 1 weeding hoe 3/9.	1.13. 9
1 spade 1/. 1 Hilling hoe 6d 1 Hair Sifter 1/.	. 2. 6
1 Old Copper Coffee Pott	. 0. 6
3 Old Pewter Dishes & 4 Plates 4/.	. 4. 0
3 Pewter Spoons 3d 1 Iron Bread Toster 2d	. 0. 5
1 Negro Woman Named Nel Aged 64 Years	1. 0. 0
1 Negro Woman Named Amery do 54 Do	10. 0. 0
1 Old Black Horse aged 22 Years	.15. 0
1 Mans Saddle & Bridle	.15. 0
1 Cow	2. 5. 0
1 Small Leather Trunk 2/. 1 Japaned Tea Board 2/6.	. 4. 6
2 Bark Bottles 6d 1 Snuff Bottle 1½d	. 0. 7½

Plantation Records



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DAILY RECORD OF COTTON PICKED on ______ Plantation,
during the week commencing on the 22 day of October ~~185~~ 1860
Overseer.

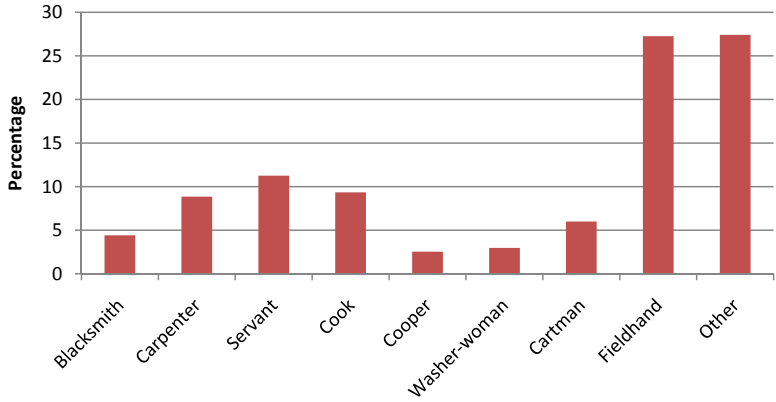
NAME.	No.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.	Week's Picking.
		22	23	24	25	26	27	
	1							
Joe Eustis	2	250	255	295	310	280	275	1665
Ned	3	255	260	290	290	295	290	1680
Jim Jinper	4	Ginning		Pressed ~~Ginning~~	Gin	Gin	Press	25 Bales
Nelson	5	150	160	165	180	165	140	960
Green	6	Sick	85	175	160	Sick	Sick	420
Richmond	7	130	185	150	170	145	165	975
Claborne	8	230	175	[illegible]	Gin	Gin	Press	405
Harrison	9	155	165	150	165	185	175	995
Lit Peter	10	Waggoning	Waggon					
Joe Ferguson	11	145	110	Short handed	145	115	130	615
Abraham	12	75	75	90	95	90	100	435
Stephney	13	150	145	185	190	190	Press	860
Jefferson	14	240	230	255	255	265	275	1515
Old Peter	15	Gin	Gin	Press	Gin	Sick	Sick	
Anderson	16	Gin	Gin	Press	Gin	Gin	Press	
William Campbell	17	125	Gin	Press	Gin	Gin	Press	125
Spenser	18	185	185	185	220	210	210	1195
Stephen	19	160	165	Press	165	165	165	840
Montgomery	20	85	70	100	100	110	110	575
Jim Kinny	21	155	155	155	160	160	170	955
Jerry	22	190	220	235	240	245	245	1375
Ben	23	245	265	310	300	Sick	Sick	1120
Dick	24	125	120	140	155	150	145	835
Joe Claborne	25	210	215	250	75	Sick	Sick	750
Phillip	26	200	205	225	225	230	235	1320
Wilson	27	250	180	275	285	Sick	Sick	990
Elijah	28	120	130	135	130	150	145	810
	29							

The Federal Writers' Project Slave Narratives

that would 'commodate a whole fence rail, it wuz so big, an' had pot hooks, pots, big old iron ones, an' everything er round to cook on. Aunt Winnie had a great big wooden tray dat she would fix all us little niggers' meals in an' call us up an' han' us a wooden spoon apiece an' make us all set down 'round the tray an' eat all us wanted three times ev'ry day. In one corner of the kitchen set a loom my Mother use to weave on. She would weave way into the night lots of times.

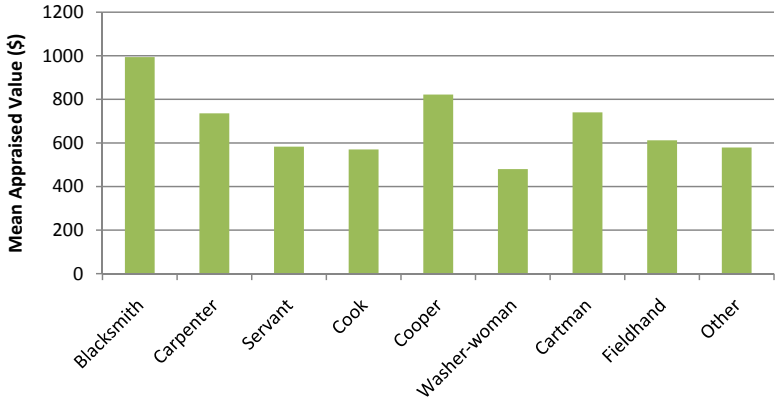
The fust thing I 'members is follerin' my Mother er 'round. She wuz the housegirl an' seamstress an' ev'rywhere she went I wuz at her heels. My father wuz the overseer on the Hunt place. He never had no ha rd work to do. My fust work wuz 'tendin' the calves an' shinin' my Master's shoes. How I did love to put a Sunday shine on his boots an' shoes! He called me his nigger an' wuz goin' ter make a barber out o' me if slavery had er helt on. As it wuz, I shaved him long as he lived. He lived in the Quarters over on a high hill 'cross the spring-branch from the white peoples' house. We had comfortable log cabins an' lived over there an' wuz happy. Ole Uncle Alex Hunt wuz the bugler an' ev'ry mornin' at 4:00 o'clock he blowed the bugle fer us ter git up, 'cept Sunday mornin's, us all slept later on Sundays.

Slaves by Skill



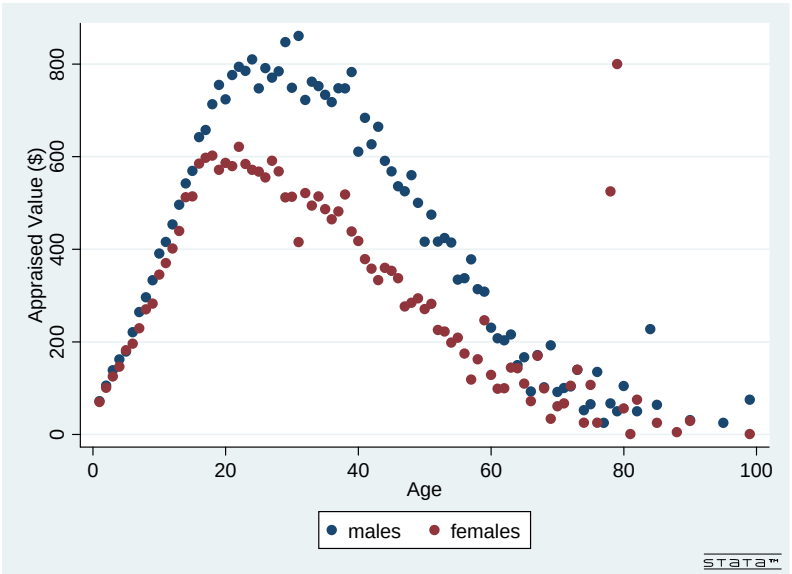
For data files, see Fogel and Engerman, "Slave Sales and Appraisals, 1775-1865" ICPSR 7421

Slave Value by Skill



For data files, see Fogel and Engerman, "Slave Sales and Appraisals, 1775-1865" ICPSR 7421

Slave Value by Gender and Age

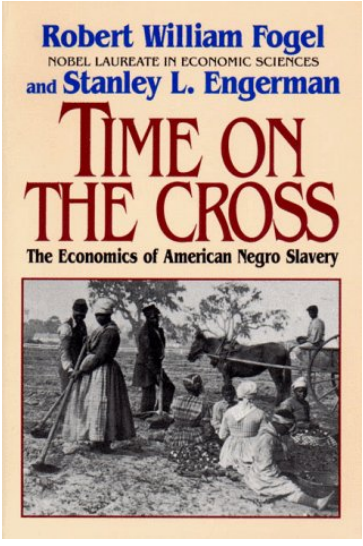


For data files, see Fogel and Engerman, "Slave Sales and Appraisals, 1775-1865" ICPSR 7421

The Study of Slavery

- So we have a tremendous amount of detailed data on slavery
- This includes quantitative data on slaveholders, slave plantations, and slaves themselves
- It's the sort of data that economists routinely use in IO, agricultural economics, labor economics, etc.
- But should we apply simply take the methods of economics and apply them to these data?
- Let's start thinking about this with some polls and discussion

Igniting the Modern Debate over Slavery



See Tom Weiss's review on EH.net for a nice history of the controversy surrounding the book.

Fogel and Engerman's 'Principal Corrections'

Fogel and Engerman argued for ten 'corrections' to the traditional view of slavery:

- (1) Slave owners were not irrational, slaves were generally a highly profitable investment
- (2) There is no evidence that economic forces alone would have ended slavery
- (3) Slave owners anticipated future prosperity
- (4) Slave agriculture was more efficient than free agriculture
- (5) The typical slave field hand was more productive than his white counterpart

Fogel and Engerman's 'Principal Corrections'

- (6) Slavery was not incompatible with an industrial system
- (7) Slave breeding did not destroy the black family
- (8) The material conditions of slaves compared favorably with those of free industrial workers
- (9) Slave income was expropriated by owners but at a lower rate than previously assumed
- (10) The southern economy wasn't stagnating and was instead growing rapidly between 1840 and 1860

The Reaction to Time on the Cross

"[Time on the Cross is] simply shot through with egregious errors" – Paul David

"[Time on the Cross should be consigned] to the outermost ring of the scholar's hell, obscurity" – Thomas Haskell

"Time on the Cross is a failure" – Richard Sutch

The Reaction to Time on the Cross

"The mystique of empirical social research, in short, leads its acolytes to accept as significant only the questions to which the quantitative magic can provide answers. As a humanist, I am bound to reply that almost all important questions are important precisely because they are not susceptible to quantitative answers."

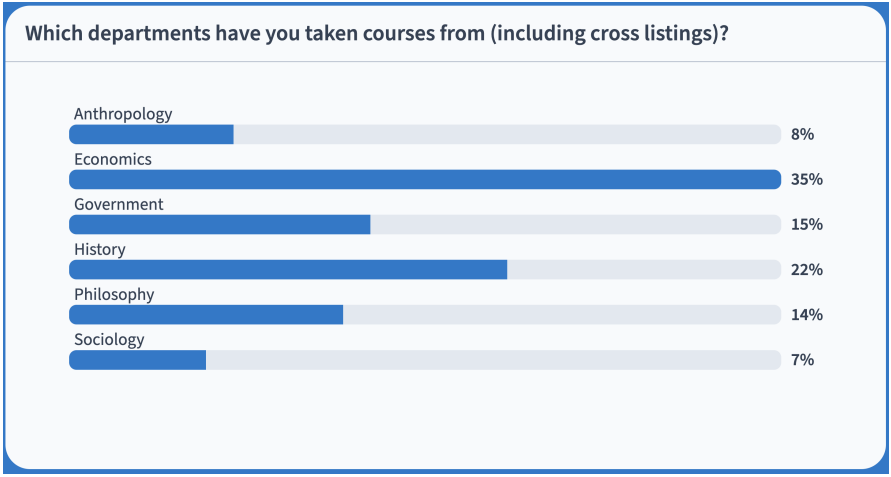
– Arthur Schlesinger, Jr., 1962

The Reaction to Time on the Cross

"The finest historians will not be those who succumb to the dehumanizing methods of social sciences, whatever their uses and values, which I hasten to acknowledge. Nor will the historian worship at the shrine of ... QUANTIFICATION."

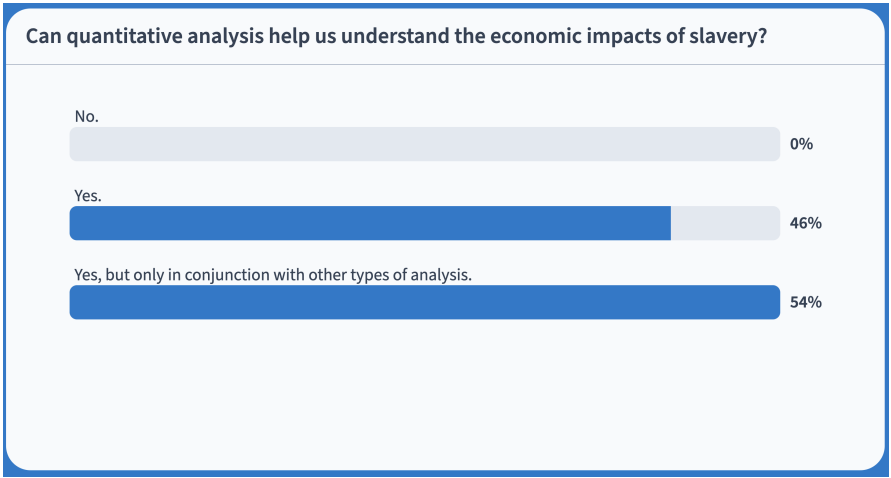
– Carl Bridenbaugh, president of the American Historical Association, 1962

The Study of Slavery

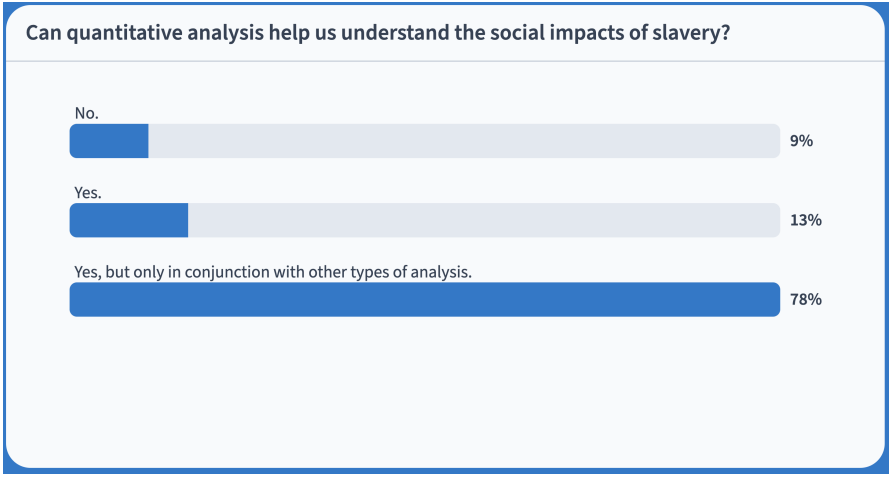


The Study of Slavery

The Study of Slavery



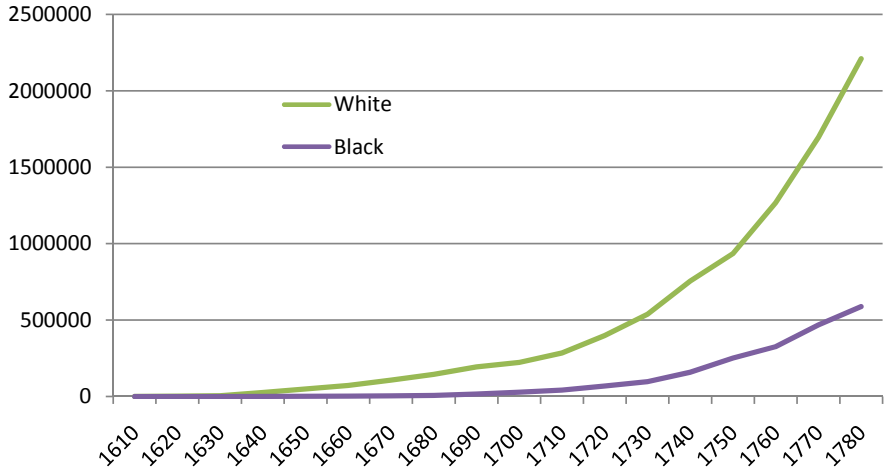
The Study of Slavery



The Study of Slavery

- Fogel and Engerman are going to apply economic modeling and quantitative analysis to the study of slavery
- They lean on the plantation records, slave ship manifests and slave auction records we saw last class
- Much of this analysis relates to estimating worker productivity in ways that are already familiar to us from an earlier topic: indentured servitude
- Before getting to Fogel and Engerman's results, it is useful to go back to indentured servitude and show how simple economic modeling can help explain that institution's decline and the emergence slavery

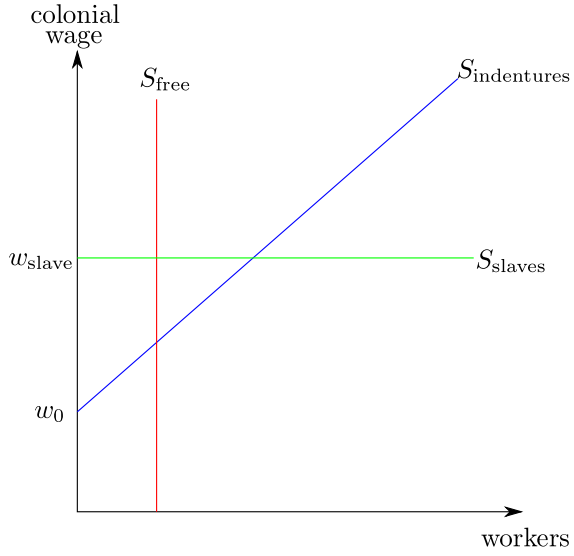
Growth of the Colonial Population - Free laborers, indentured servants and slaves



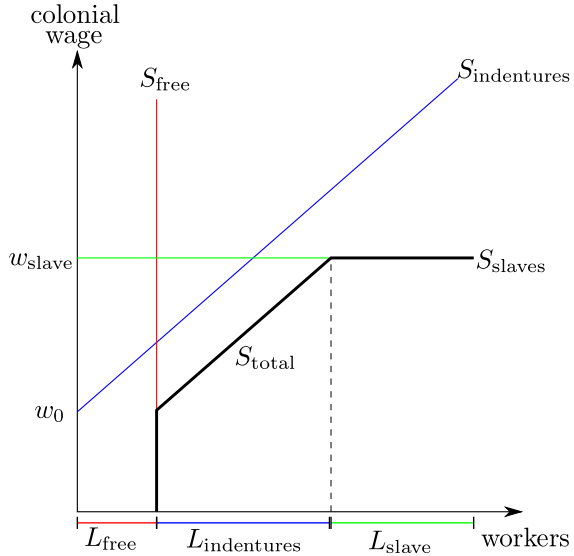
The Disappearance of Indentured Servitude

- Two big changes altered the incentives to enter into indentured servitude: British wages rose and the cost of transatlantic passage dropped
- Higher British wages both reduced the incentive to migrate and made it easier to save up money for passage
- Lower cost of passage made it easier for laborers to finance the trip themselves
- Lower cost of passage also made it cheaper for employers in the colonies to acquire slaves

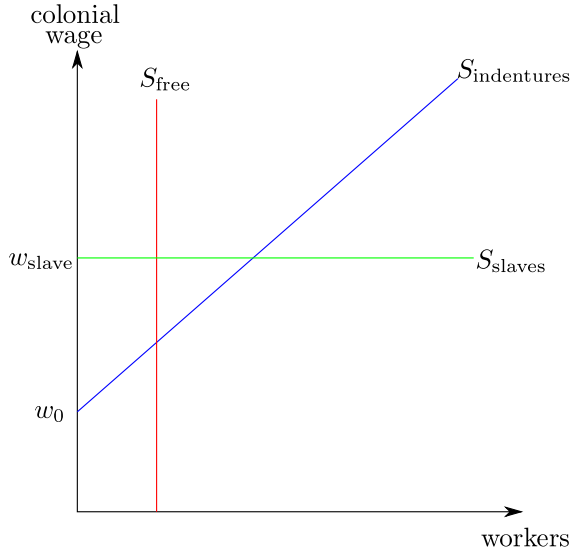
The Disappearance of Indentured Servitude



The Disappearance of Indentured Servitude



The Disappearance of Indentured Servitude



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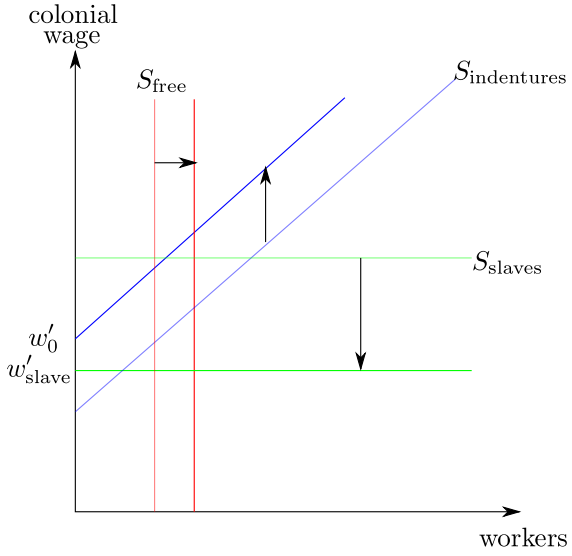
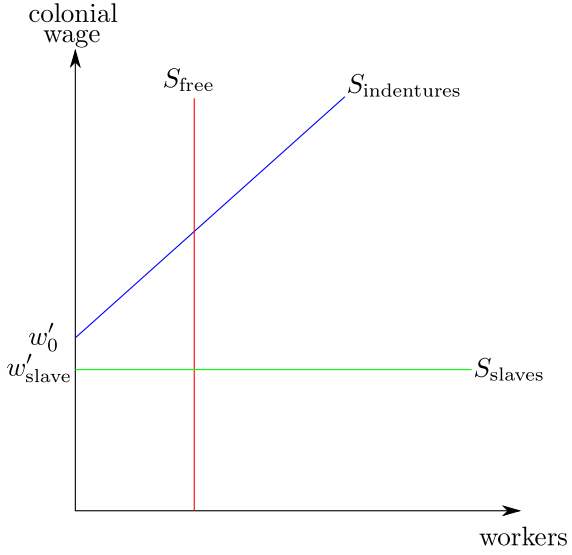


The Disappearance of Indentured Servitude



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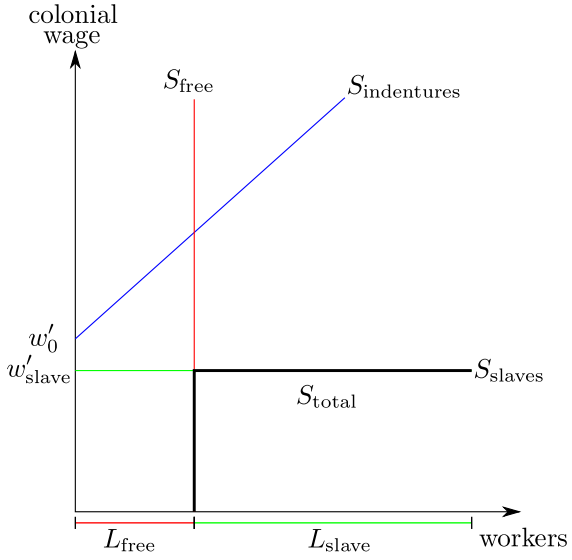


The Geography of Slavery

- So economics does seem to help us understand the transition from indentured servitude to forced labor, it also helps us understand the geography of slavery
- Slavery is typically thought of as a Southern phenomenon and the patterns of slaveholding seem to confirm this
- This doesn't mean that slavery wouldn't work in the Northern economy
- The Northern farms faced the same labor constraints as Southern farms and in fact slaves were occasionally used in wheat production
- The growth of Southern slavery had a lot to do with the productivity of slaves in growing the southern staple crops of cotton and tobacco (and sugar in Louisiana)
- It was this high productivity in cotton and tobacco that allowed southern farmers to compete for slave labor with Caribbean sugar plantations

The Geography of Slavery

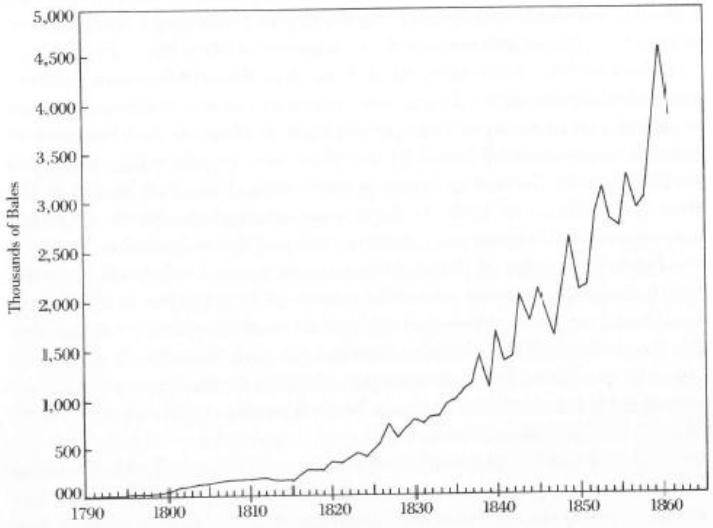
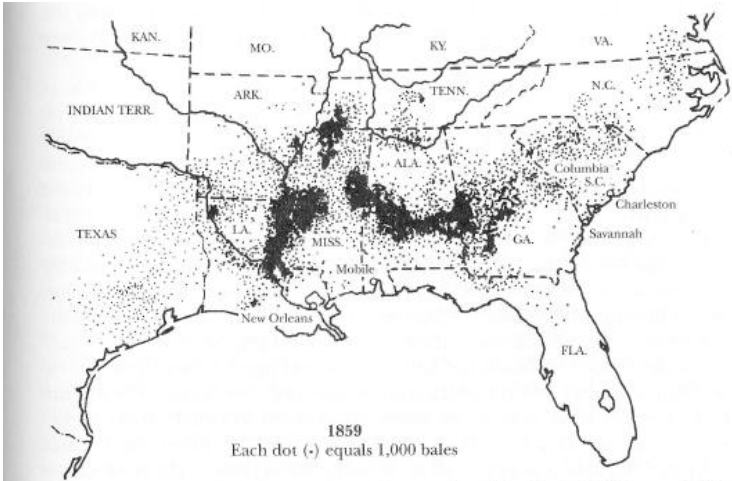


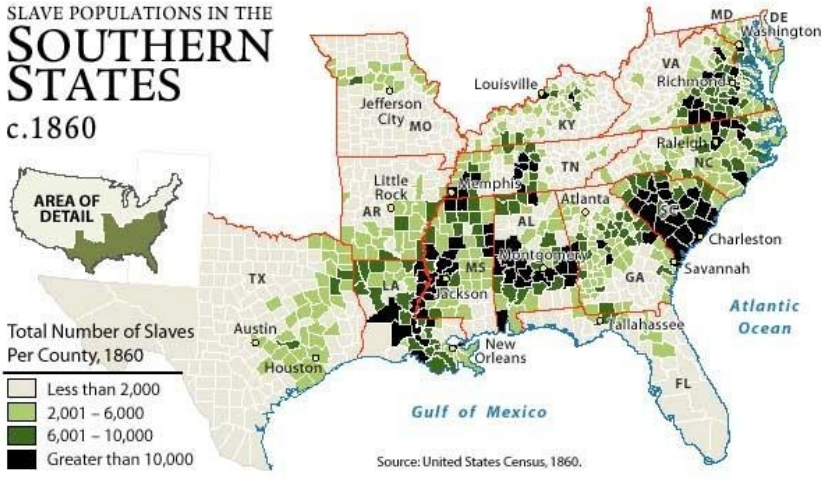
Figure 2. The course of U.S. cotton production, 1791–1861.

The Geography of Slavery



Source: Gavin Wright, *The Political Economy of the Cotton South* (New York: W. W. Norton, 1978): 16, adapted from USDA, *Atlas of Agriculture*, Part V, Advance Sheets (December 15, 1915).

The Geography of Slavery



The Productivity and Profitability of Slaves

- The patterns of slaveholding suggest that slaves were most productive in the South on cotton and tobacco plantations but this doesn't tell us whether slavery was more profitable than accomplishing the same tasks with free labor
- One of the big debates in economic history was whether or not slavery was profitable and efficient as an institution (very important to note here that economists' efficiency is independent of morality)
- This questions speaks to whether slavery was an economically viable institution (whether it would have continued if the Civil War didn't happen) and how important slavery was to American economic development, these questions matter outside of economics

The Traditional Economic View of Slavery

"[I]t was widely believed that the slave plantations were unprofitable and inefficient enterprises that were kept in operation by a class prepared to sacrifice its private economic interest, enduring economic stagnation for the South, in order to maintain its political and cultural hegemony."

–Fogel and Engerman, 1980

The Traditional Economic View of Slavery

Up until the 1970s, the traditional view of the economics of slavery could be summarized as follows:

- Slavery was an unprofitable investment
- Slavery was a dying institution
- Slave labor was economically inefficient
- Slavery retarded the growth of the southern economy
- Slavery provided extremely poor living conditions for the typical slave (in terms of consumption, health and physical abuse)

Coerced Labor and Efficiency

Why did people think slave labor was inefficient?

- The general belief was that coerced labor would put in less effort than paid labor and would be more likely to engage in forms of resistance
- People thought that even with the threat of punishment to get slaves to work, the productivity of a slave simply wouldn't be as high as that of a paid worker
- Under this view, using slave labor requires potentially costly supervision and lower levels of output per worker
- Slavery would be an inefficient institution that would have held back the southern economy

Back to Fogel and Engerman's 'Principal Corrections'

Fogel and Engerman argued for ten 'corrections' to the traditional view of slavery:

- (1) Slave owners were not irrational, slaves were generally a highly profitable investment
- (2) There is no evidence that economic forces alone would have ended slavery
- (3) Slave owners anticipated future prosperity
- (4) Slave agriculture was more efficient than free agriculture
- (5) The typical slave field hand was more productive than his white counterpart

Back to Fogel and Engerman's 'Principal Corrections'

- (6) Slavery was not incompatible with an industrial system
- (7) Slave breeding did not destroy the black family
- (8) The material conditions of slaves compared favorably with those of free industrial workers
- (9) Slave income was expropriated by owners but at a lower rate than previously assumed
- (10) The southern economy wasn't stagnating and was instead growing rapidly between 1840 and 1860

What was so controversial?

- Several of Fogel and Engerman's points had already been conceded (the profitability of purchasing slaves, the role of slaves in industry and cities)
- The big controversy centered around the claims of efficiency and slave welfare
- The strongest objections were to the following assertions:
  - Slave plantations were more efficient than farms using free labor
  - The rate of expropriation was low and the material living conditions decent for slaves
  - Punishment was used less often than previously assumed
  - The family was the basic social unit under slavery

Slavery and Efficiency

Total Factor Productivity on Southern Farms Relative to Northern Farms (Northern Farms=100), 1860

Farm Size (number of slaves)	Old South	New South
0	98.4	112.7
1 to 15	103.3	127.2
16 to 50	124.9	176.1
51 or more	135.1	154.7
All slave farms	118.9	153.1
All farms	116.2	144.7

Slavery and Efficiency

Work hours per year for slaves and free farmers

Group	Hours per year
Southern slaves	2,800
Northern farmers	3,200
Corn belt farmers	3,365
Western dairy farmers	3,365

Where was the efficiency gain coming from?

- Slaves weren't more productive because they were working longer hours
- They were actually producing more with a shorter work year
- One part of this increased productivity may have been scale economies
- Another reason might be that large plantations effectively used a different labor technology
- Larger plantations using slave labor could employ the gang system

The Task System vs The Gang System

- There are two general approaches to using slave labor on a farm: the task system and the gang system
- The task system:
  - Each slave is assigned an amount of work to get done by the end of the day (perhaps longer)
  - The work might require several different actual tasks
  - Amount of work was proportional to ability (hand rating)
  - Example: the day's work might be to plow, seed and hoe a certain area of land
- The task system could be implemented on any size of farm

Hand Ratings

The field-hands are all divided into four classes, according to their physical capacities. The children beginning as "quarter-hands," advancing to "half-hands," and then to "three-quarter hands;" and, finally, when mature, and able-bodied, healthy and strong, to "full hands." As they decline in strength, from age, sickness, or other cause, they retrograde in the scale, and proportionately less labor is required of them. Many, of naturally weak frame, never are put among the full hands. Finally, the aged are left out at the annual classification, and no more regular field-work is required of them, although they are generally provided with some light, sedentary occupation. I saw one old woman

Frederick Law Olmsted, "A Journey in the Seaboard Slave States" (1856)

The Task System vs The Gang System

Some typical tasks for slaves (based on a full hand):

- Ditcher: 1,000 cubic feet in light meadow, 200 cubic feet in cypress swamp
- Sewing rice: 2 acres per day
- Reaping rice: .75 acres per day
- Cooper: 18 barrels per week
- Wood chopper: cut and split 1 cord per day

The Task System vs The Gang System

The basic characteristics of the gang system used on plantations:

- Slaves were divided into groups (gangs) with specialization of tasks
- These groups might be based on skill and ability
- The division of labor within a gang made a member responsible for a precise task but also made performance dependent on the actions of the others in the gang
- The gangs were typically composed of 10 to 20 slavehands and headed by a single driver
- In many ways the gang system was achieving for plantations what the assembly line would accomplish for manufacturing

The Task System vs The Gang System

There are a few different explanations for why the gang system could lead to greater efficiency:

- Sorting slaves by physical capability led to greater productivity through exploiting comparative advantages
- Direct supervision in the gang system produced greater effort than incentive structure of the task system
- Steady and intense pace of work under the gang system (keep up to the people ahead you, don't get in the way of people behind you)

Gang System Efficiency: Comparative Advantage

An example of comparative advantage:

- Suppose that a strong worker can plow one acre per day or pick 50 pounds of cotton per day
- Suppose that a weak worker can plow one quarter of an acre per day or pick 25 pounds of cotton per day
- Notice that the strong worker has an *absolute advantage* in both tasks and a *comparative advantage* in plowing

Gang System Efficiency: Comparative Advantage

Total output with both workers' time divided evenly between tasks:

$$\text{Plowed acres} = \frac{1}{2}\ \text{day} \cdot 1\ \text{acre/day} + \frac{1}{2}\ \text{day} \cdot \frac{1}{4}\ \text{acre/day} = \frac{5}{8}\ \text{acres}$$

$$\text{Cotton picked} = \frac{1}{2}\ \text{day} \cdot 50\ \text{lbs/day} + \frac{1}{2}\ \text{day} \cdot 25\text{lbs/day} = 37.5\ \text{lbs}$$

Gang System Efficiency: Comparative Advantage

Total output having weak worker specialized in picking and still aiming for $\frac{5}{8}$ acres plowed:

$$\text{Plowed acres} = \frac{5}{8}\ \text{day} \cdot 1\ \text{acre/day} + 0 = \frac{5}{8}\ \text{acres}$$

$$\text{Cotton picked} = \frac{3}{8}\ \text{day} \cdot 50\ \text{lbs/day} + 1\ \text{day} \cdot 25\ \text{lbs/day} = 43.75\ \text{lbs}$$

Question: Could you profit from these comparative advantages the same way if you paid wages?

Gang System Efficiency: Steady and Intense Pace

> own supervisor.[1] Upon many estates of small dimensions the owner would lead the plow-gang, making his own furrow, and requiring the negroes to keep pace with him, while his son would do likewise with the hoe-gang. Or if the planter spared himself from the manual labor, he would oversee the work either in person or through a hired overseer, or in many cases through a reliable slave whom he constituted foreman or "driver" and vested with authority subordinate to his own. In some localities, as in most of the Carolina rice district, the negroes instead of being worked strictly in gangs were given tasks of hoeing or plowing a specified area for each day.

Uldrich Phillips, "The Origin and Growth of the Southern Black Belts" (1905)

Gang System Efficiency: Steady and Intense Pace

Slavery and Efficiency

Total Factor Productivity on Southern Farms Relative to Northern Farms (Northern Farms=100), 1860

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All slave farms	118.9	153.1
All farms	116.2	144.7

The Gang System and Efficiency

- The gang system allowed plantations to achieve much higher levels of output per worker than farms using free labor
- Potential efficiency gains came from specialization, assigning slaves to tasks based on ability, enforcing an intense rate of work, and creating interdependence and tension within and between gangs
- A slave in a gang system produced as much output in 35 minutes as a farmer (free or slave) using traditional methods did in an hour
- The net result of the gang system was that total factor productivity was 39 percent higher for gang system plantations than for free farms

The Gang System and Efficiency

Marginal product of slave labor by gender, in percent

	Task system	Gang system	Ratio of gang MPL to task MPL
Male	.20	.25	1.25
Female	.08	.15	1.875

Results are from Toman (2005).

Why not use the gang system everywhere?

- First, the gang system worked well for only a handful of crops: hemp, sugar, tobacco, cotton and rice
- Of these crops, the efficiency gains of the gang system were greatest for sugar, still substantial for cotton and rice, and relatively small for tobacco
- This limited the geographic area in which large slave plantations would have a big efficiency edge

Why not use the gang system everywhere?

- Another problem with the adoption of the gang system was that it was hard to implement with free labor
- The work was awful, when plantations tried to get free laborers to work in a gang system, they had to pay a premium of $75 a year
- Problem is, the gains in efficiency only amounted to roughly $23 a year

Getting the gang system to function

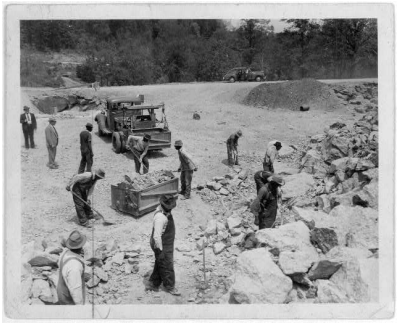
- So the efficiency gains were potentially large from using the gang system
- However, the work was so grueling that it wouldn't survive in the absence of slavery
- How did owners get the slaves to maintain such high levels of effort?
- Both punishment and rewards were used
- Punishment included whippings and loss of privileges
- Rewards included days off, material goods, better jobs

Getting the gang system to function

Stefano Fenoaltea's model of slavery and supervision:

- Distinguishes between effort-intensive and care-intensive production
- Punishment can get higher work effort at the expense of carefulness
- Rewards are better for achieving greater levels of carefulness
- Therefore, punishment gets used in effort-intensive work (plantation agriculture)
- Rewards get used in care-intensive work (real and human-capital intensive work)
- Explains patterns of slavery and patterns of punishment vs rewards across sectors

Getting the gang system to function



Getting the gang system to function

"[S]ince the predominant response to Emancipation was the breaking up of the gangs, rather than their reconstitution with free labor, the superior productivity of the gang slaves appears attributable specifically to their subjection to the lash, and not to conventional economies of scale."

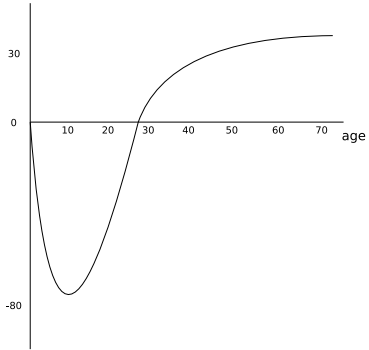
–Stefano Fenoaltea

Rates of Return on Southern Slaves, 1830-1860 (Evans, 1962)

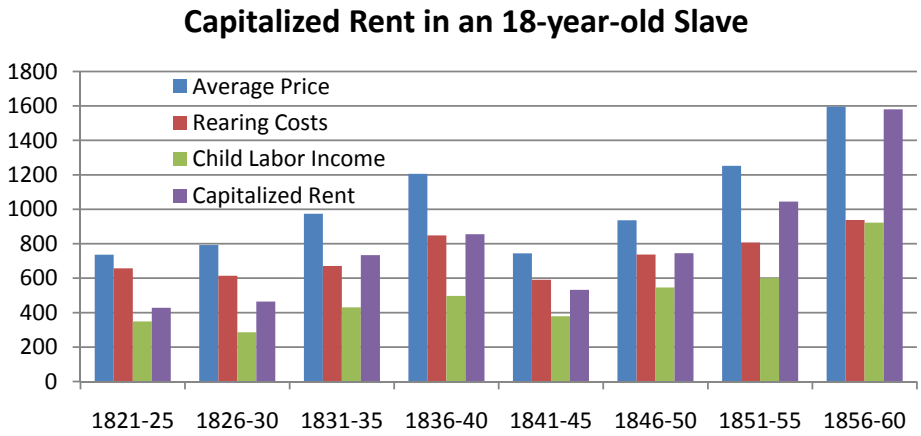
Period	Rate of Return
1830-35	11.25
1836-40	9.5
1841-45	16.4
1846-50	14.8
1851-55	12.9
1856-60	10.8

The Economic Viability of Slavery

Average Accumulated Value (in dollars) of Income Expropriated from Slaves



The Economic Viability of Slavery



The Welfare of Slaves

- The data suggest that slavery was both profitable and would potentially continue to be profitable: slaveholders had economic incentives to perpetuate slavery
- Another big question, with as much debate surrounding it as the efficiency and profitability of slavery, is how slaves fared under the system
- From the owner's perspective, healthy slaves were important for productivity and happy slaves may also have improved productivity
- Concerns over productivity would guide decisions about the provision of food and material goods and the extent of physical abuse taking place

The Welfare of Slaves

"I am very certain, from an attentive observation to this subject, that a negro deprived of a meat diet is not able to endure the labor that those can perform who are liberally supplied with it; and that the master who gives his field hands a half a pound of meat per day and two quarts of meal...is better compensated by slave labor than those who give the ordinary quantity."

–Virginia planter, 1837

Slave Diets

A Comparison of Diets (pounds per day)

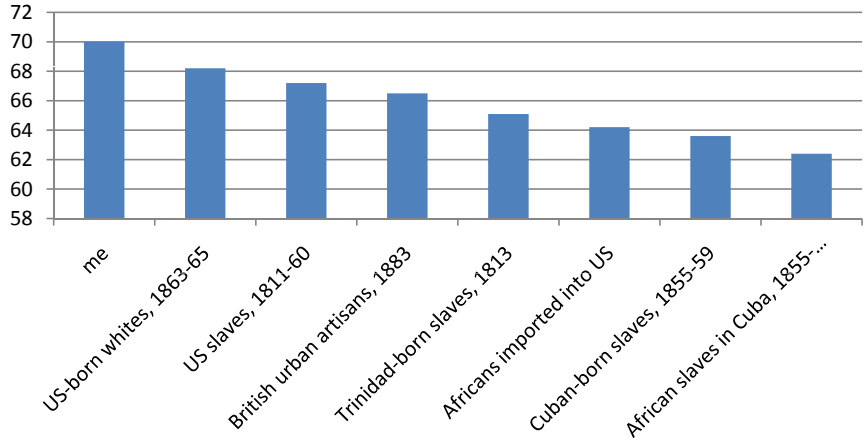
	Least-cost diet	Fogel and Engerman slave diet	Sutch slave diet
Pork	--	0.31	0.53
Beef	--	0.15	0.1
Mutton	--	0.01	--
Butter	--	0.01	0.01
Milk	0.6	0.6	0.41
Sweet potatoes	0.25	1.12	0.72
Irish potatoes	--	0.08	0.06
Cowpeas	0.58	0.35	0.12
Corn	1.74	1.78	2.23
Wheat	--	0.12	0.12
Cost per day (cents)	4.4	8.2	8.7

Slave Diets

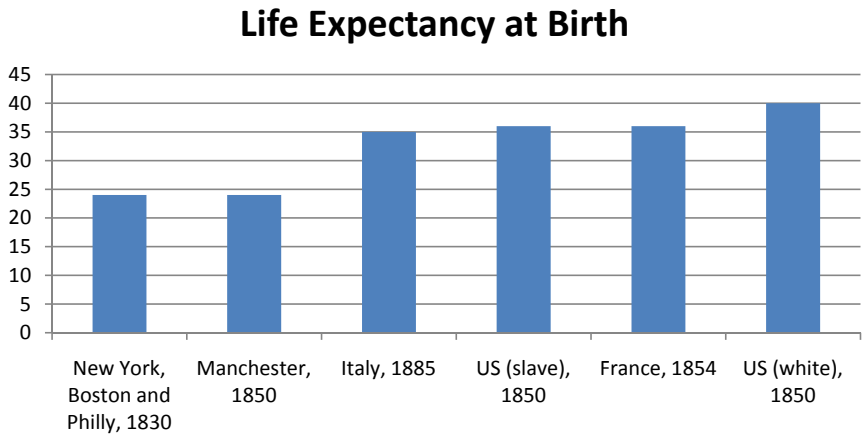
Based on the information you provided, this is your daily recommended amount from each food group.

GRAINS 10 ounces	VEGETABLES 4 cups	FRUITS 2 1/2 cups	MILK 3 cups	MEAT & BEANS 7 ounces
Make half your grains whole Aim for at least **5 ounces** of whole grains a day	**Vary your veggies** Aim for these amounts **each week:** **Dark green veggies** = 3 cups **Orange veggies** = 2 1/2 cups **Dry beans & peas** = 3 1/2 cups **Starchy veggies** = 9 cups **Other veggies** = 10 cups	**Focus on fruits** Eat a variety of fruit Go easy on fruit juices	**Get your calcium-rich foods** Go low-fat or fat-free when you choose milk, yogurt, or cheese	**Go lean with protein** Choose low-fat or lean meats and poultry Vary your protein routine—choose more fish, beans, peas, nuts, and seeds

Slave Heights Relative to Other Groups



Slave Longevity Relative to Other Groups



The Health of Slave Children

- Along the dimensions of food consumption, adult height and longevity slaves didn't appear to be drastically behind other population groups
- Where the welfare of the slave population does look quite poor is among newborns and young children
- Newborns had very low birth weights, there were high rates of infant mortality and health problems persisted through early childhood
- Possible explanations:
  - Work patterns of mothers
  - Disease environment
  - Diets of slave children

Slave Mortality Rates

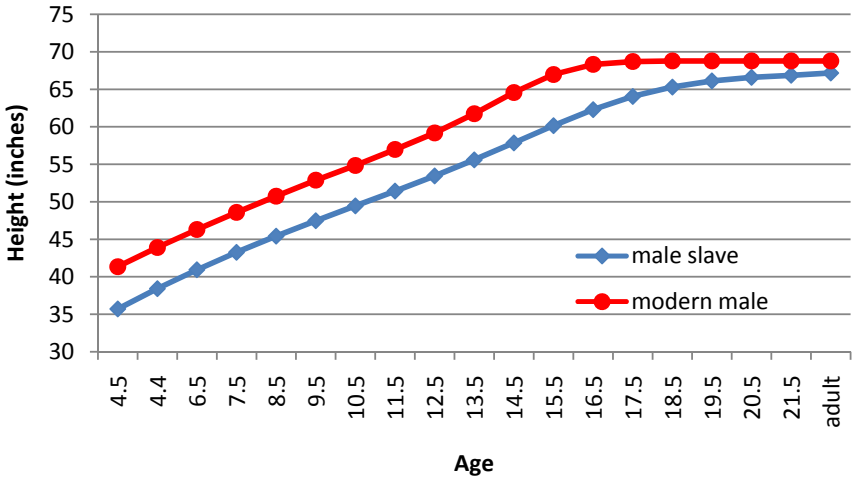
Mortality Rates per Thousand in the Antebellum Period

Age group	Slaves	Entire US population
0	350	179
1 to 4	201	93
5 to 9	54	28
10 to 14	37	19
15 to 19	35	28
20 to 24	40	39

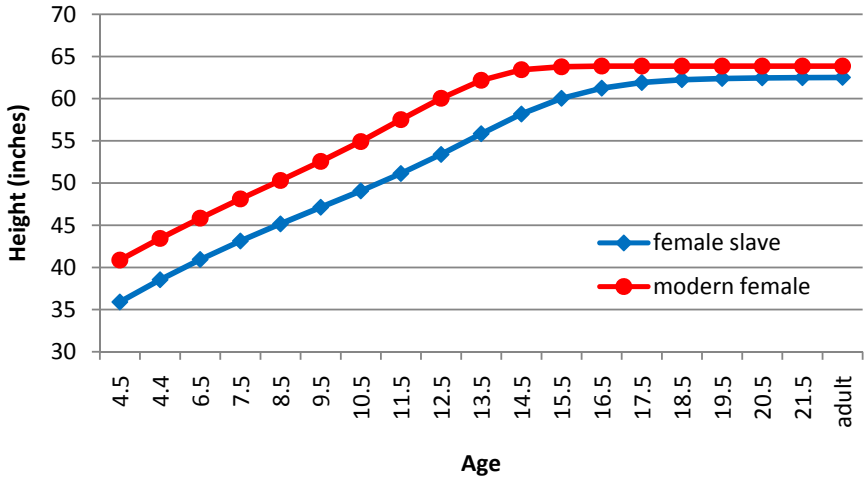
The Health of Slave Children

The Health of Slave Children

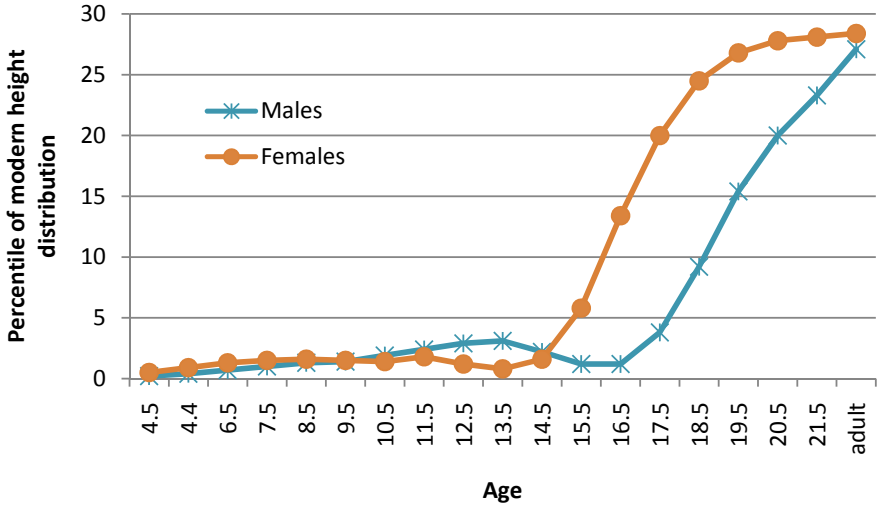
The Unusual Growth Patterns of Slave Children



The Unusual Growth Patterns of Slave Children



The Unusual Growth Patterns of Slave Children



The Unusual Growth Patterns of Slave Children

- So it appears that slave children experienced very poor nutrition but then substantial catch-up growth in their late teens
- This is not simply a pattern of undernourished populations (developing countries with small children tend to have small teens and adults)
- Steckel argues it is a product of poor nutrition resulting from owners' investment decisions
- The return to additional productivity from better nutrition was considered less than the cost of that nutrition for children

Another Explanation: Selection

Mortality Rates per Thousand in the Antebellum Period

Age group	Slaves	Entire US population
0	350	179
1 to 4	201	93
5 to 9	54	28
10 to 14	37	19
15 to 19	35	28
20 to 24	40	39

Is there now consensus among economists?

SLAVERY

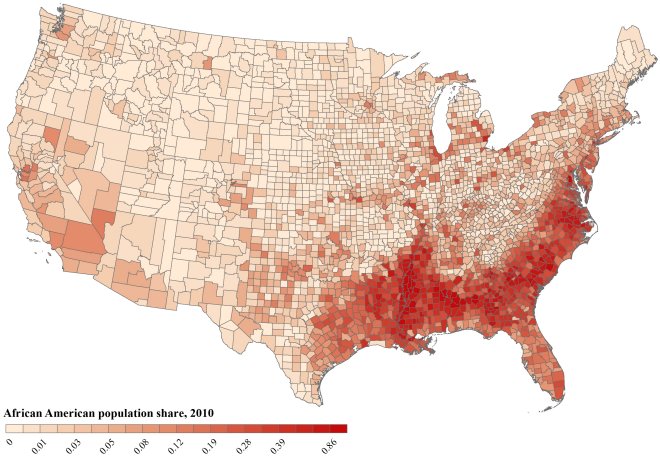
	A	P	D	
E	2	4	93	14. Slavery was a system irrationally kept in existence by plantation owners who failed to perceive or were indifferent to their best economic interests.
H	3	8	90	
Pr	20/46			
%	100/100			
	A	P	D	15. The slave system was economically moribund on the eve of the Civil War.
E	0	2	98	
H	3	3	95	
Pr	54/52			
%	98/92			
	A	P	D	16. Slave agriculture was efficient compared with free agriculture. Economies of scale, effective management, and intensive utilization of labor and capital made southern slave agriculture considerably more efficient than nonslave southern farming.
E	48	24	28	
H	30	35	35	
Pr	67/49			
%	100/95			
	A	P	D	17. The material (rather than psychological) conditions of the lives of slaves compared favorably with those of free industrial workers in the decades before the Civil War.
E	23	35	42	
H	22	19	58	
Pr	75/85			
%	94/92			

From Whaples (1995) "Where is there consensus among American economic historians? The results of a survey on forty propositions"

Long Run Consequences of Slavery

- One reason for assessing the material conditions of slaves on the eve of the Civil War is to think about convergence in outcomes after the war
- Knowing the gap in economic and health outcomes at the time of emancipation is critical for knowing whether progress was made in closing that gap
- We'll consider a few different dimensions of how progress was or was not made after the Civil War

Long Run Consequences of Slavery



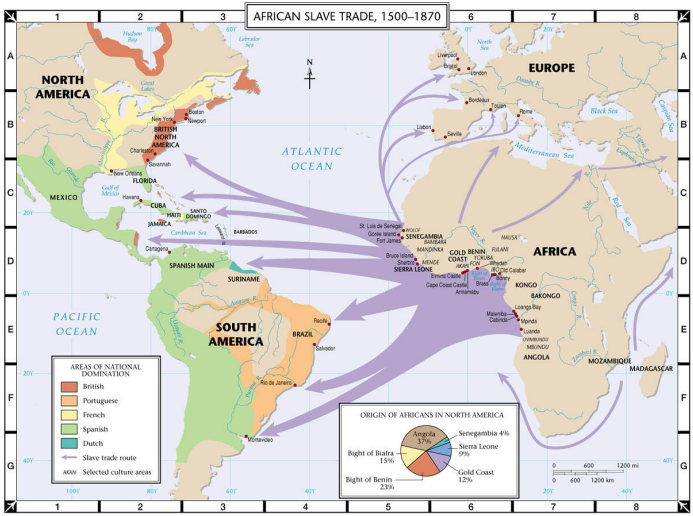
Slavery and the Economic Development of Africa

- Before focusing on the US, let's look at Africa
- Slavery as an institution had profound impacts on the development of Africa
- Consider Nathan Nunn's "The Long Term Effects of Africa's Slave Trade"
- Nunn looks at the effects of slave trading in Africa on modern economic outcomes of African countries
- He explores the argument of whether slave trades and colonialism are an explanation of African underdevelopment
- His basic story: slavery's impact on governmental institutions and social institutions helps explain the persistence of bad institutions and poor economic outcomes in parts of Africa today

Quick Review of the Slave Trade in Africa

- Slave trade lasted from roughly 1400 to 1900
- Colonial rule in Africa lasted between 1885 to 1960
- Four different slave trades:
  - Trans-Atlantic: slaves taken from West Africa, West-Central Africa and Eastern Africa to European colonies in the New World
  - Trans-Saharan: slaves taken from south of the Saharan desert to Northern Africa
  - Red Sea: slaves taken from inland Africa and shipped to Middle East and India
  - Indian Ocean: slaves taken from Eastern Africa and shipped to Middle East, India and plantation islands in the Indian Ocean

Quick Overview of the Slave Trade



Quick Overview of the Slave Trade

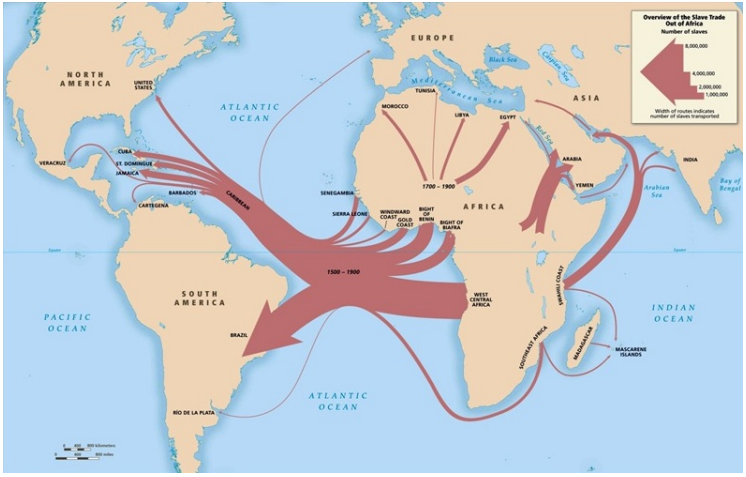
- Over 18 million slaves were exported (12 million were through trans-Atlantic trade)
- Estimated that by 1850, Africa's population was half of what it would have been without the slave trade
- Slave trade led to social and ethnic fragmentation, political instability, weakening of states, corruption of judicial institutions

Countries Exporting the Most Slaves, 1400-1900

Estimated Total Slave Exports between 1400 and 1900 by Country

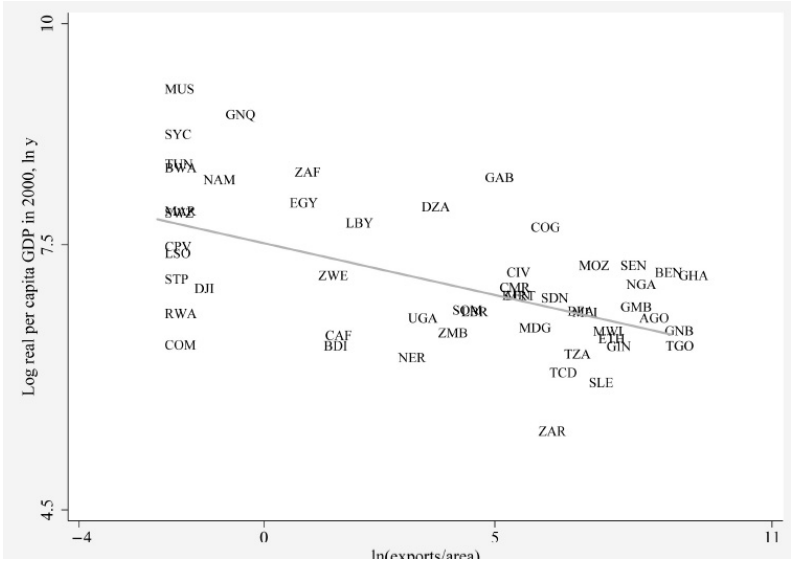
Isocode	Country name	Trans-Atlantic	Indian Ocean	Trans-Saharan	Red Sea	All slave trades
AGO	Angola	3,607,020	0	0	0	3,607,020
NGA	Nigeria	1,406,728	0	555,796	59,337	2,021,859
GHA	Ghana	1,614,793	0	0	0	1,614,793
ETH	Ethiopia	0	200	813,899	633,357	1,447,455
SDN	Sudan	615	174	408,261	454,913	863,962
MLI	Mali	331,748	0	509,950	0	841,697
ZAR	Democratic Republic of Congo	759,468	7,047	0	0	766,515
MOZ	Mozambique	382,378	243,484	0	0	625,862
TZA	Tanzania	10,834	523,992	0	0	534,826
TCD	Chad	823	0	409,368	118,673	528,862

Countries Exporting the Most Slaves, 1400-1900

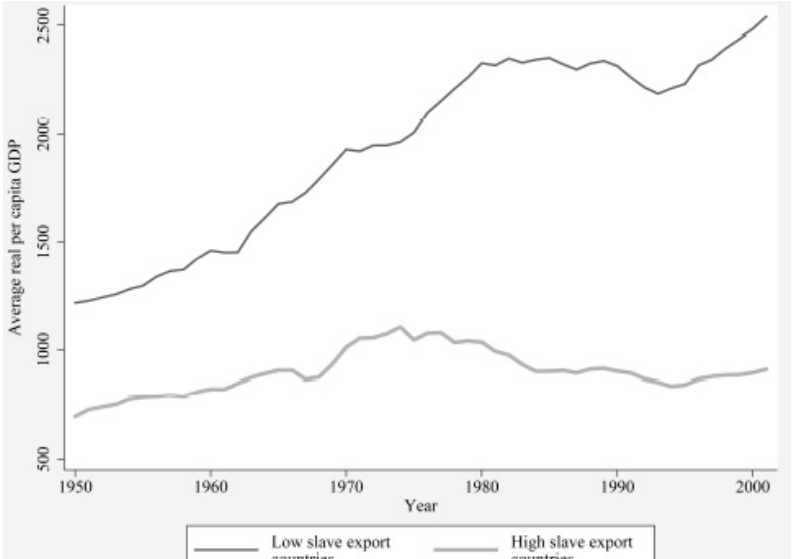


Countries Exporting the Most Slaves, 1400-1900

Slaves Exports and Modern GDP per Capita



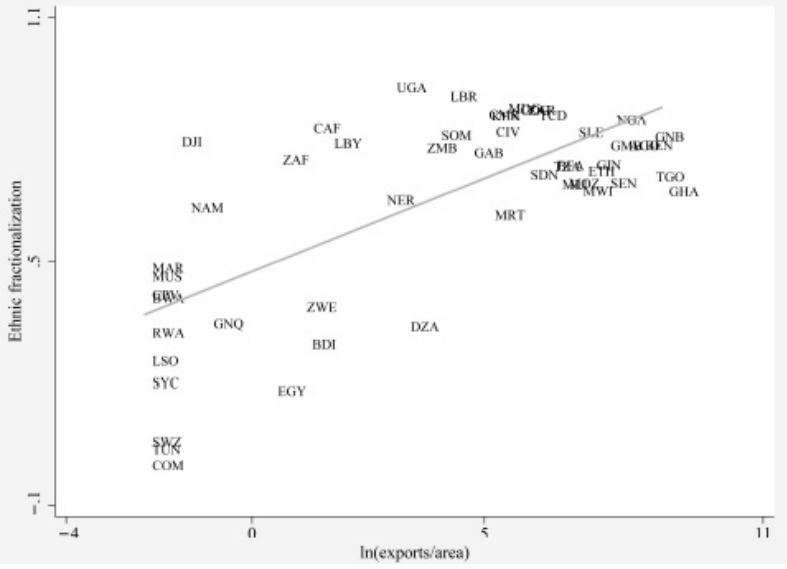
Economic Growth for Countries with the Lowest and Highest Slave Exports



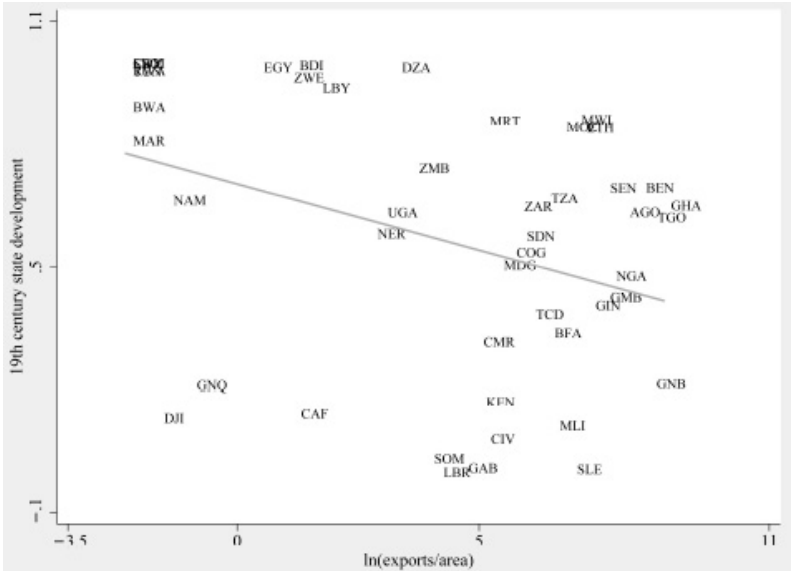
The Long Term Effects of Slavery

- Clearly some areas of Africa were far more affected by slavery than others
- Today, those areas that exported the most slaves are less economically developed
- So why do we get persistent effects of slavery well after the slave trade ended?
- Nunn's answer is that the slave trade had profound impacts on several features of institutional development:
  - Ethnic fractionalization
  - State development
  - Levels of distrust

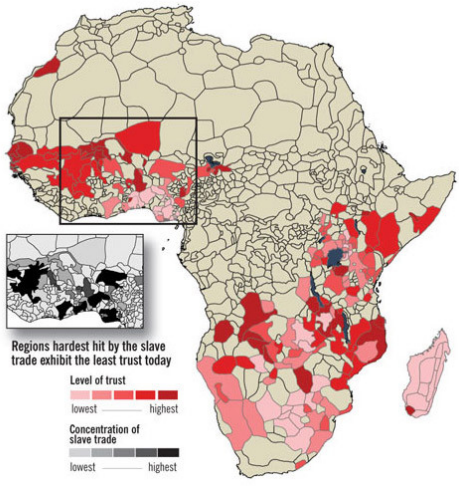
Slaves Exports and Modern Ethnic Fractionalization



Slaves Exports and 19th Century State Development

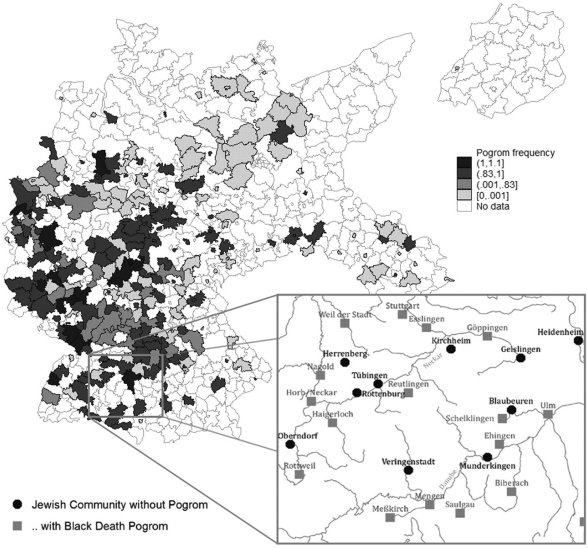


Slaves Exports and Modern Distrust

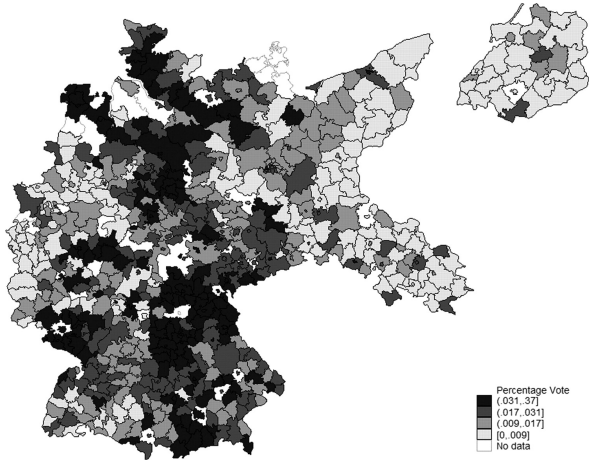


Beyond Africa

Beyond Africa

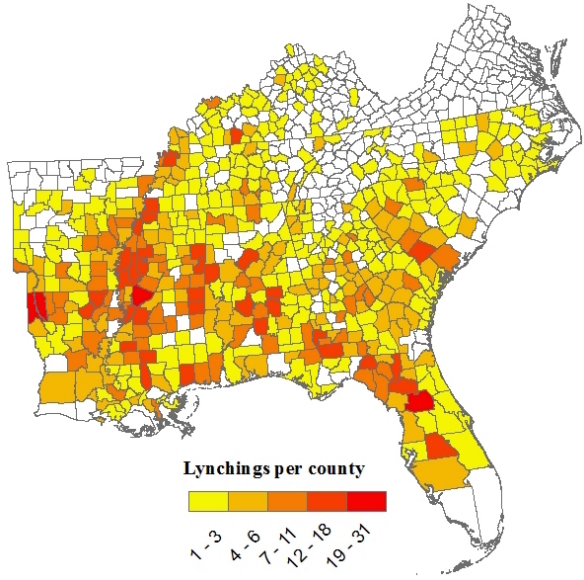


Beyond Africa



Percentage of votes for the NSDAP in the German National Election of 1928
(Voigtlander and Voth, 2012)

Back to America



Back to America

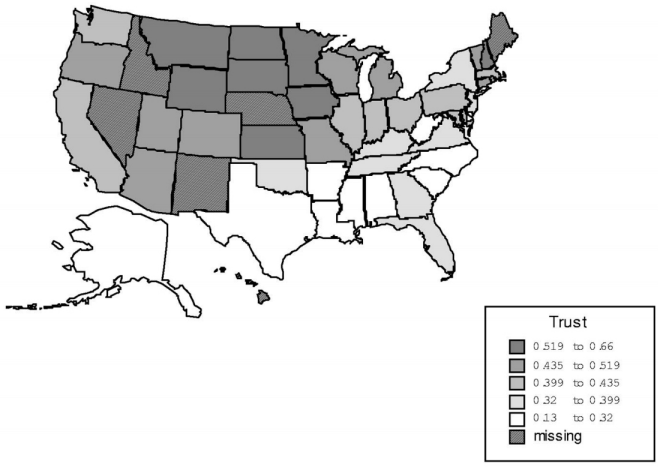


Fig. 1. Trust.

From Alesina and La Ferrara (2002) "Who Trusts Others?"

Back to America

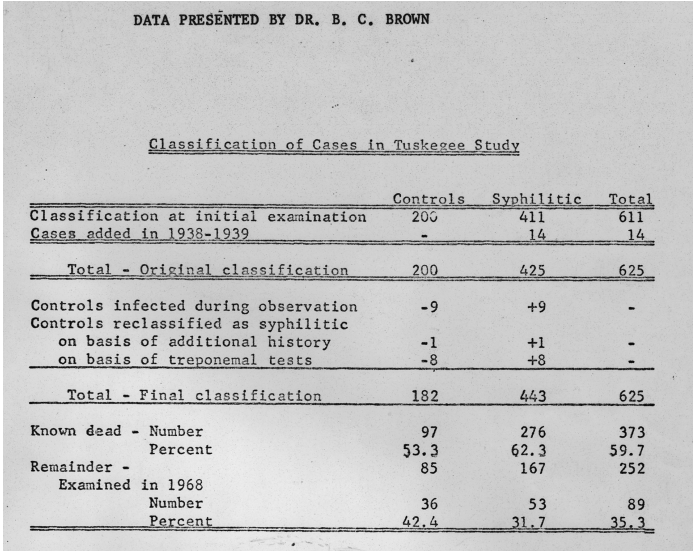
Table 1
Descriptive statistics[a]

	Means [1]	Correlations with trust [2]
Trust	0.40	1
Confidence in banks & financial institutions	0.27	0.06*
Confidence in major companies	0.25	0.14*
Confidence in organized religion	0.30	0.04*
Confidence in education	0.32	0.01
Confidence in executive branch of federal government	0.17	0.06*
Confidence in organized labor	0.12	−0.03*
Confidence in press	0.19	0.01
Confidence in medicine	0.49	0.06*
Confidence in television	0.15	−0.04*
Confidence in supreme court	0.32	0.12*
Confidence in scientific community	0.40	0.15*
Confidence in congress	0.14	0.02
Confidence in military	0.35	−0.03*
Gini	0.41	−0.10*
Racial fragmentation	0.36	−0.10*
Ethnic fragmentation	0.67	−0.03*

[a] Notes: *denotes significance at the 1 percent level.

From Alesina and La Ferrara (2002) "Who Trusts Others?"

Back to America



DATA PRESENTED BY DR. B. C. BROWN

Classification of Cases in Tuskegee Study

	Controls	Syphilitic	Total
Classification at initial examination	200	411	611
Cases added in 1938-1939	-	14	14
Total - Original classification	200	425	625
Controls infected during observation	-9	+9	-
Controls reclassified as syphilitic			
on basis of additional history	-1	+1	-
on basis of treponemal tests	-8	+8	-
Total - Final classification	182	443	625
Known dead - Number	97	276	373
Percent	53.3	62.3	59.7
Remainder -	85	167	252
Examined in 1968			
Number	36	53	89
Percent	42.4	31.7	35.3

Back to America

"All the News That's Fit to Print"

The New York Times

LATE CITY EDITION

VOL. CXXI . . . No. 41,810 NEW YORK, WEDNESDAY, JULY 26, 1972 15 CENTS

Dean at Columbia Is Shot; Suspended Student Sought

U.S. ARMY DOCTS AIDE OF MACHAL

Most Power Back in City; Voltage Cut in Some Areas

Nixon Accord With Soviet Embitters NATO Officials

10 MILLION FREED FROM WAGE CURBS

School Board Will Create Office of Safety Director

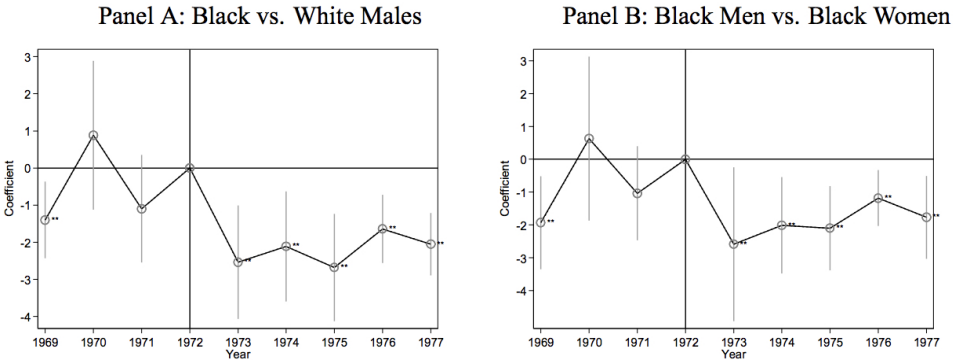
Britain Faces Paralysis in Labor Dispute

Syphilis Victims in U.S. Study Went Untreated for 40 Years

Sheriff Frees Green Berets' 'P.O.W.s'

Back to America

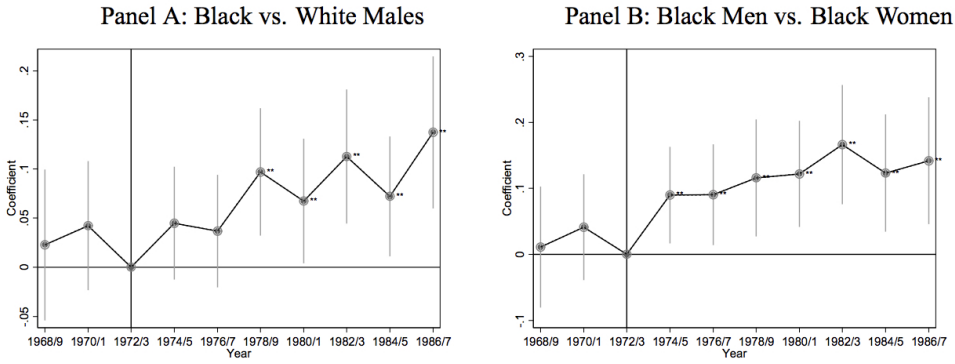
FIGURE 4: EVENT STUDY ON UTILIZATION



From Alsan and Wanamaker (2017) "Tuskegee and the Health of Black Men"

Back to America

FIGURE 5: EVENT STUDY ON MORTALITY



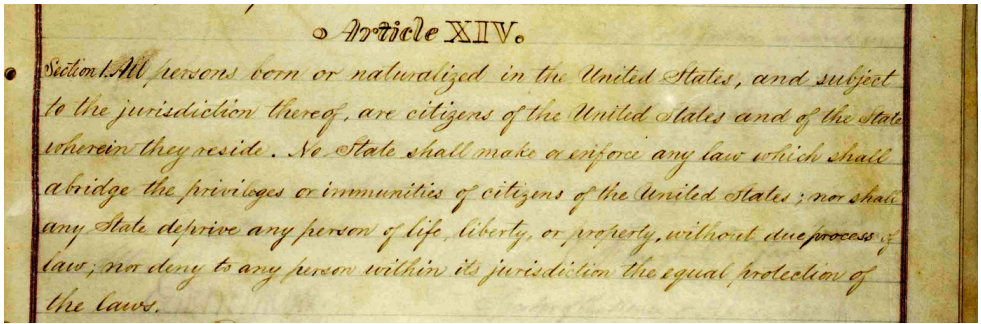
From Alsan and Wanamaker (2017) "Tuskegee and the Health of Black Men"

Back to America

- Let's switch back from these big issues of trust to more narrow questions about economic outcomes after emancipation
- Emancipation certainly wasn't the end of differential treatment of black Americans in the US economy
- We're going to think about progress during Reconstruction and then during the Jim Crow era

Reconstruction

Reconstruction

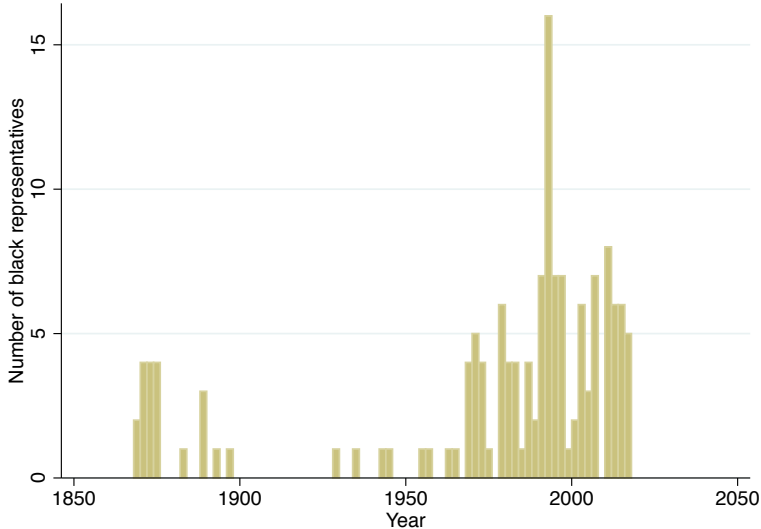


Article XIV.

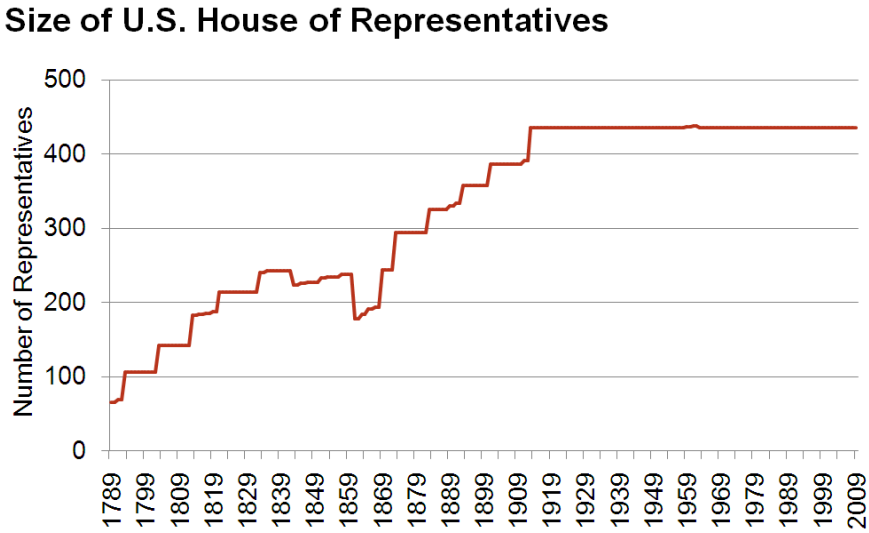
Section 1. All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.

Fourteenth Amendment, adopted 1868

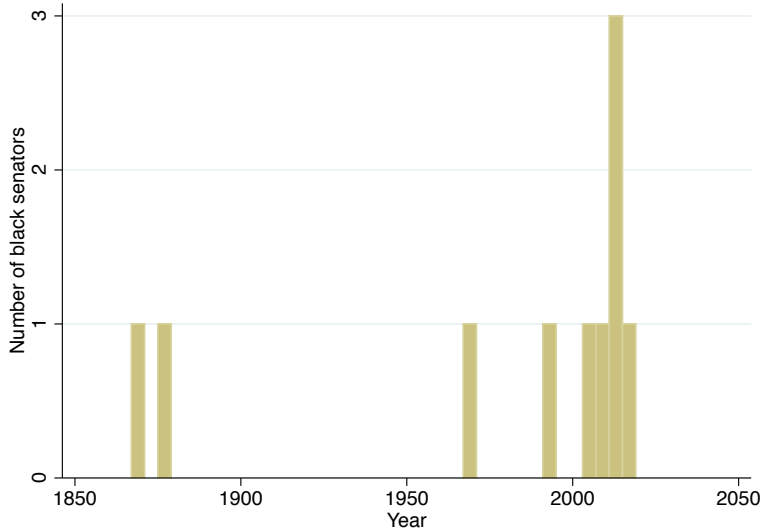
Reconstruction



Reconstruction



Reconstruction



Reconstruction

- To think about the effects of black enfranchisement during Reconstruction, let's look at Logan (2018)
- Logan wants to think about how the election of black officials affected local government finance
- Before we get into the details, let's quickly look at a modern case cited by Logan
- We'll consider Beach and Jones (2017) "Gridlock: Ethnic Diversity in Government and the Provision of Public Goods"

Race and Modern Elections

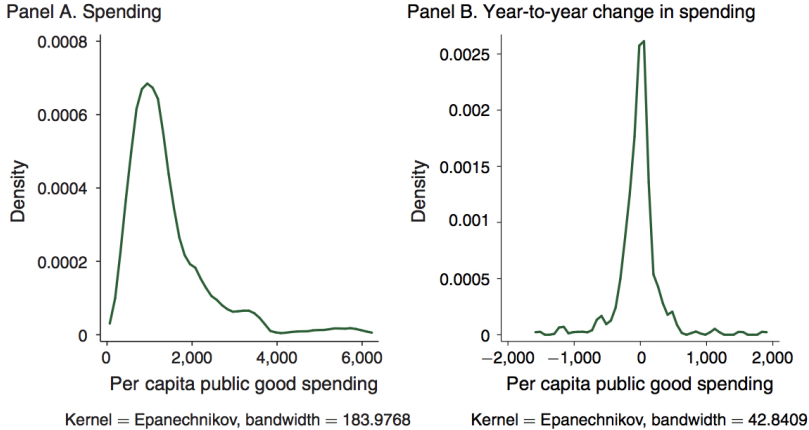


FIGURE 1. DISTRIBUTION OF PER CAPITA PUBLIC GOOD SPENDING PATTERNS (*RD sample*)

Notes: Sample is restricted to the set of cities that ever experience a close election between a modal and non-modal candidate (i.e., an election that was decided by a margin of less than 7.1 percent). A modal candidate is a candidate whose ethnicity matches the city's modal ethnicity.

Race and Modern Elections

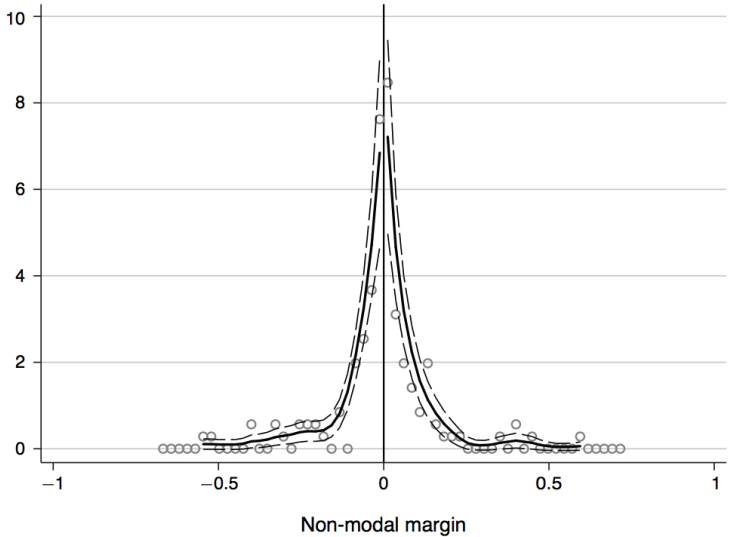


FIGURE 2. DISTRIBUTION OF NON-MODAL MARGIN OF VICTORY

Race and Modern Elections

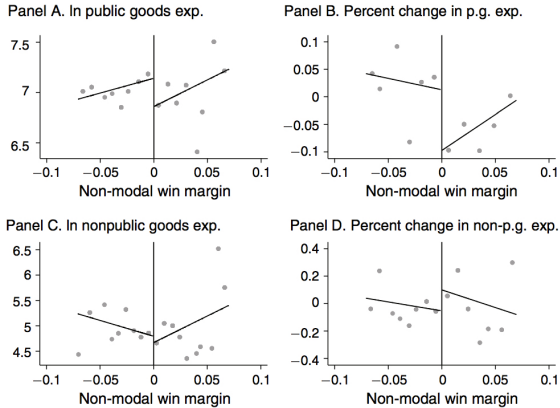


FIGURE 3. BINNED SCATTER PLOT OF PER CAPITA SPENDING AND THE NON-MODAL CANDIDATE'S MARGIN OF VICTORY

Notes: Sample restricted to the set of cities that ever experience an election between a modal and non-modal candidate (i.e., an election that was decided by a margin of less than 7.1 percent). A modal candidate is a candidate whose ethnicity matches the city's modal ethnicity. Each "public goods" is simply total expenditures minus expenditures on "government administration" and debt repayment. The "public goods" category therefore includes all spending on roads, parks, police protection, sewerage, public transportation, etc.

TABLE 6—THE IMPACT OF A GROUP-SPECIFIC VICTORY ON LOG PUBLIC GOOD SPENDING PER CAPITA

	Asian (1)	Black (2)	Hispanic (3)	White (4)
Group wins	−0.034	0.081	0.036	−0.058
	(0.075)	(0.088)	(0.047)	(0.044)
Observations	110	128	354	377
R^2	0.974	0.958	0.915	0.935

Notes: Robust standard errors (clustered at the council level) are in parentheses. Column 1 is restricted to the set of cities that ever experience a close election between an Asian and non-Asian candidate. Column 2 is restricted to the set of cities that ever experience a close election between a black and nonblack candidate. Column 3 is restricted to the set of cities that ever experience a close election between a Hispanic and non-Hispanic candidate. Column 4 is restricted to the set of cities that ever experience a close election between a white and nonwhite candidate. Each regression includes city and year fixed effects. Close elections are defined as elections that were decided by a margin of less than 7.1 percent. All specifications include year and city fixed effects. The "group wins" indicator is also interacted with margin of victory.

Race and Elections during Reconstruction

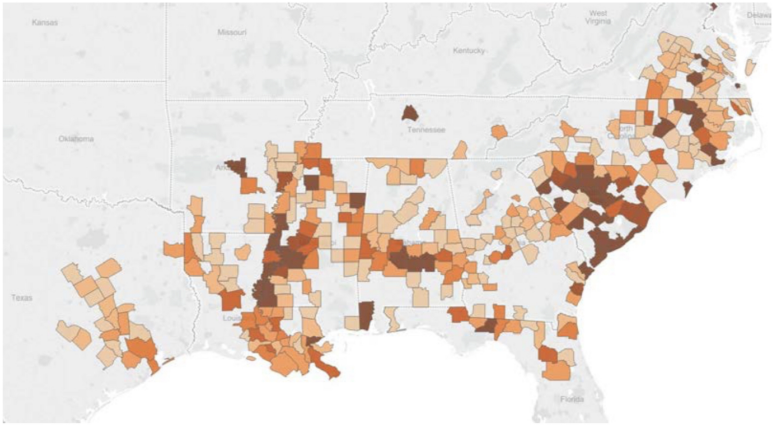


Figure 1: Spatial Distribution of Black Officials During Reconstruction. Source: Foner (1996)

Race and Elections during Reconstruction

Table 1: Summary Statistics for Black Officials During Reconstruction

Variable	N	Mean	Std. Dev.
Entered Office	1331	1869.016	2.677765
Left Office	1331	1873.63	5.650746
Birth Year	1096	1832.479	11.56974
Death Year	366	1893.825	17.96578
Literate	1331	0.642957	0.479295
Victim of Violence	1331	0.104603	0.306147
Born a Slave	1331	0.288703	0.453318
Property Owner (>$100)	1331	0.233612	0.423276
Executive	1331	0.334728	0.47206
Legislative	1331	0.567643	0.495576
Judicial	1331	0.094142	0.292128

Note: Data come from Foner (1996) for each unique black officeholder.

Race and Elections during Reconstruction

Table 3: OLS Estimates of 1870 County Taxes Per Capita

	Dependent Variable : 1870 County Taxes per Capita			
	I	II	III	IV
Black Officials Per County	0.0993***	.0993***	0.0986***	0.0925***
	(0.0106)	(0.0105)	(0.0132)	(0.0133)
Total Value of Farms 1870	6.11e-08***	8.93e-08***	8.51e-08***	7.24e-08***
	(1.88e-08)	(2.03e-08)	(2.01e-08)	(2.06e-08)
Segregation Measure	0.214	0.3028	0.271	0.348
	(0.318)	(0.352)	(0.349)	(0.348)
Percent Black	0.251	1.109***	0.988***	0.903***
	(0.214)	(0.252)	(0.252)	(0.253)
Total Population	-2.77e-06	0.0000279***	-1.72e-05	-1.48e-05
	(2.98e-06)	(7.66e-06)	(1.28e-05)	(1.27e-05)
Manufacturing Wages		-1.27e-06***	-1.77e-06***	-1.80e-06***
		(2.45e-07)	(2.69e-07)	(2.68e-07)
Value of Manufacturing Output		3.37e-07***	3.68e-07***	3.67e-07***
		(6.25e-08)	(6.23e-08)	(6.21e-08)
Number Illiterate		-0.0001638***	-9.40e-05***	-8.66e-05***
		(0.0000249)	(2.94e-05)	(2.94e-05)
Rail Access?		0.011499	0.0382	0.0404
		(0.085)	(0.0823)	(0.0820)
Water Access?		0.04222	0.0460	0.0408
		(0.08053)	(0.0800)	(0.0797)
Urban?		0.0231714	0.106	0.0680
		(0.17859)	(0.178)	(0.178)
County Wealth			4.95e-08***	4.89e-08***
			(1.13e-08)	(1.12e-08)
Republican Vote Share 1868 President				0.00123***
				(0.000462)

Race and Elections during Reconstruction

- We have an endogeneity problem here, what type of counties decide to elect black politicians?
- It could be the type of county, and not the politician, driving results
- The Beach and Jones approach of close elections won't work here
- Instead, Logan is going to take and instrumental variables approach

Race and Elections during Reconstruction

- The basic idea is to find something correlated with electing a black politician but uncorrelated with the county traits we're worried about
- Logan is going to use the number of free black residents in a county prior to the Civil War
- Estimation takes place in two steps:
  - First, regress the number of black politicians on the 1860 free black population and use the results to predict the number of black politicians
  - Second, regress spending outcomes on the predicted number of black politicians

Race and Elections during Reconstruction

Table 5: IV Estimates for Black Elected Officials

	I	II	III	IV
OLS				
Black Officials Per County	0.0993***	.0993***	0.0986***	0.0925***
	(0.0106)	(0.0105)	(0.0132)	(0.0133)
First Stage				
Free Blacks in 1860	0.00275***	0.00159***	0.00118***	0.00115***
	(0.000216)	(0.000236)	(0.000239)	(0.000236)
F-Statistic on Excluded Instrument	161.8	45.9	24.2	23.9
IV				
Black Officials Per County	0.197***	0.24006***	0.207***	0.205**
	(0.0289)	(0.0574)	(0.0787)	(0.0802)
State Fixed Effects	X	X	X	X
Local Economic Conditions		X	X	X
County Wealth			X	X
Republican Vote Share (1868)				X

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 N= 825. All regressions include total value of farms in 1870, Logan-Parman segregation measure, percent black, and total population. Column II includes manufacturing wages, value of manufacturing output, number illiterate, rail access, water access, and urban county. Column III includes county wealth. Column IV includes Republican vote Share in the 1868 Presidential Election. All regressions include state fixed effects.

Race and Elections during Reconstruction

Table 7: Effects of Politicians by Branch of Government

Panel A: Judicial Officials			
Dependent Variable:	OLS -- 1870 County Taxes Per Capita	First Stage Officials Per County	IV -- 1870 County Taxes Per Capita
Judicial Officials Per County	0.0659		3.494
	(0.0608)		(3.005)
Free Blacks 1860		6.77e-05	
		(5.39e-05)	
F-Statistic on Excluded Instrument		1.578	
Panel B: Executive Officials			
Dependent Variable:	OLS -- 1870 County Taxes Per Capita	First Stage Officials Per County	IV -- 1870 County Taxes Per Capita
Executive Officials Per County	0.123***		1.006
	(0.0233)		(0.638)
Free Blacks 1860		0.000235*	
		(0.000139)	
F-Statistic on Excluded Instrument		2.883	
Panel C: Legislative Officials			
Dependent Variable:	OLS -- 1870 County Taxes Per Capita	First Stage Officials Per County	IV -- 1870 County Taxes Per Capita
Legislative Officials Per County	0.139***		0.283***
	(0.0232)		(0.109)
Free Blacks 1860		0.000837***	
		(0.000135)	
F-Statistic on Excluded Instrument		38.204	

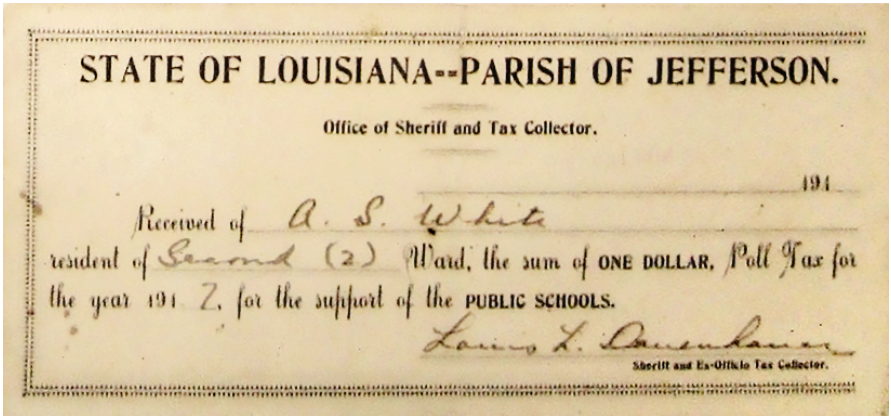
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Note: N=825 in all regressions. Regressions include Republican vote share in 1868 Presidential Election, total value of farms, Logan-Parman Segregation, Total population, percent black, manufacturing wages, value of manufacturing output, number illiterate, rail access, water access, urban county, county wealth, state fixed effects.

Race and Elections during Reconstruction

Table 11: Exposure to Black Officials and Education

Panel A:	Black Literacy Rate			
Black Officials in County	-0.0221***	-0.0217***	-0.0193***	-0.0198***
	(0.00388)	(0.00413)	(0.00365)	(0.00383)
Exposed to Schooling	0.183***	0.184***	0.396***	0.388***
	(0.0169)	(0.0170)	(0.00270)	(0.00274)
Black Officials * Exposed to Schooling	0.0368***	0.0361***	0.0340***	0.0334***
	(0.00649)	(0.00640)	(0.00636)	(0.00629)
Observations	48,376	48,376	48,376	48,376
R-squared	0.099	0.116	0.177	0.194
State Effects		X		X
Birth Cohort Effects			X	X
Percent Effect on Black Literacy Rate	6.85	6.72	6.33	6.22

Race, Elections and the End of Reconstruction



STATE OF LOUISIANA--PARISH OF JEFFERSON.

Office of Sheriff and Tax Collector.

19 1

Received of A. S. White

resident of Second (2) Ward, the sum of ONE DOLLAR, Poll Tax for the year 191 7, for the support of the PUBLIC SCHOOLS.

Louis L. Dauenhauer

Sheriff and Ex-Officio Tax Collector.

Race, Elections and the End of Reconstruction

Table 8: 1880 Taxes and Changes in Taxes 1870-1880

Panel A: 1880 Per capita County Taxes			
Dependent Variable:	OLS -- 1880 County Taxes Per Capita	First Stage Officials Per County	IV -- 1880 County Taxes Per Capita
Black Officials Per County	0.0309***		-0.0902**
	(0.0068)		(0.0460)
Free Blacks 1860		0.0012***	
		(0.0002)	
F-Statistic on Excluded Instrument		24.45	
Panel B: Change in Per Capita Taxes, 1870-1880			
Dependent Variable:	OLS -- 1870-1880 County Taxes Per Capita	First Stage Officials Per County	IV -- 1870-1880 County Taxes Per Capita
Black Officials Per County	-0.0129***		-0.0629***
	(0.0030)		(0.0199)
Free Blacks 1860		0.0012***	
		(0.0002)	
F-Statistic on Excluded Instrument		24.45	

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Note: N=825 in all regressions. Regressions include Republican vote share in 1868 Presidential Election, total value of farms, Logan-Parman Segregation, Total population, percent black, manufacturing wages, value of manufacturing output, number illiterate, rail access, water access, urban county, county wealth, state fixed effects.

Black Outcomes After Reconstruction

Black Outcomes After Reconstruction

Plessy v. Ferguson, 1896

Black Outcomes After Reconstruction

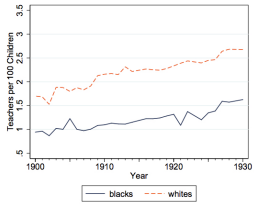
Brown v. Board of Education, 1954

Black Outcomes During Jim Crow

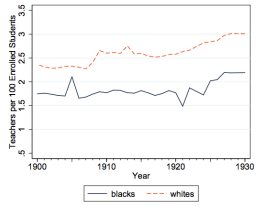
- During the Jim Crow era, the separate but equal doctrine led to large gaps in access to opportunity
- Particularly bad for black economic mobility were the racial gaps in school quality
- Let's take a quick look at a dissertation by Baker (2014)
- In particular, Baker has a really interesting way to get at the way public funds were allocated between black and white schools in the South during the Jim Crow era

Black Outcomes During Jim Crow

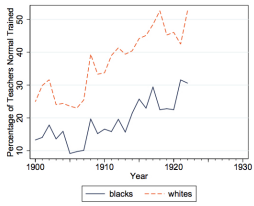
Figure 1.2: Trends in School Quality in Georgia by Race, 1900-1930



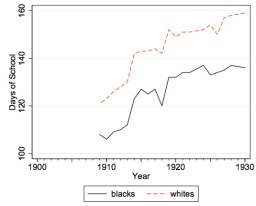
(a) Teachers per 100 same-race children



(b) Teachers per 100 same-race enrollments



(c) Percent of teachers with normal training

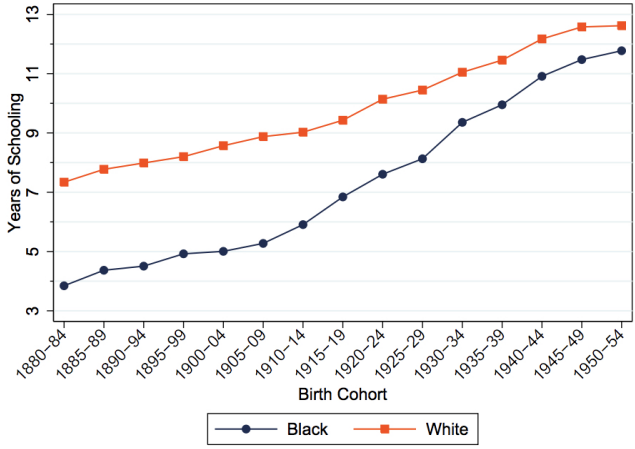


(d) Average school term length in days

Sources: Calculated using data collected from the Georgia Department of Education, *Annual Report of the Department of Education to General Assembly of the State of Georgia*, 1901-1931. The number of teachers with normal training is not available after 1922. The length of the school term was not reported separately by race prior to 1909.

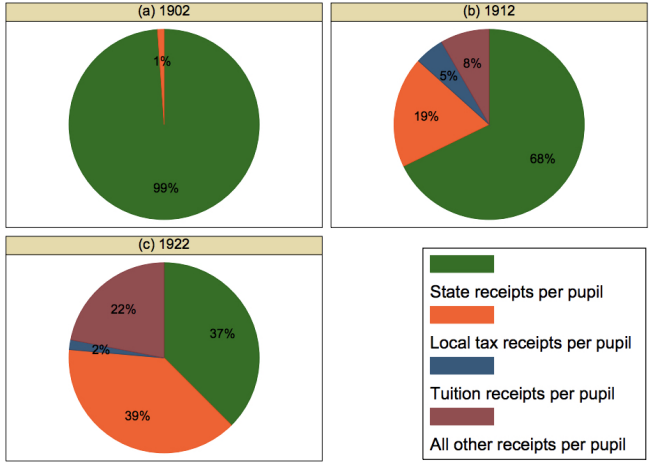
Black Outcomes During Jim Crow

Figure 1.3: Racial Gap in Years of Schooling by Birth Cohort in Georgia



Black Outcomes During Jim Crow

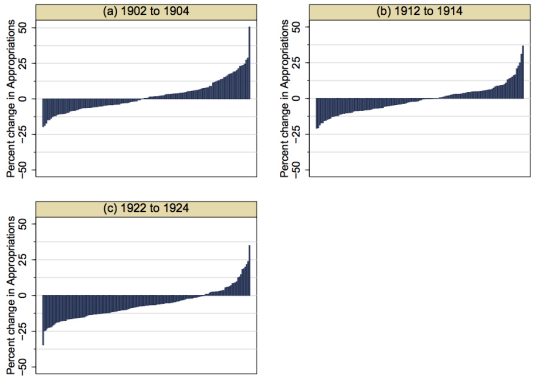
Figure 2.1: Sources of County School Revenues by Year



Notes: Displays the county-level mean percentage of total school revenues per pupil from various sources. *Source:* Reports of the Georgia Department of Education, various years.

Black Outcomes During Jim Crow

Figure 2.2: Percent Change in County-Level Appropriations around Census Years



Note: Each new school census caused varied changes in appropriations from the State School Fund at the county level in adjustment years. Each bar represents the percent change in state appropriations received by a county as a result of the relevant census update. *Source:* Reports of the Georgia Department of Education, various years.

Black Outcomes During Jim Crow

Table 2.4: Estimates of the Effect of Budget Shocks on Various Expenditures

1902 to 1904

	(1) $\Delta Total\ Exp\ PP$	(2) $\Delta Teacher\ PP$	(3) $\Delta Support\ PP$	(4) $\Delta Super.\ PP$	(5) $\Delta Capital\ PP$
$\Delta Approp\ PP$	0.638***	0.484***	0.042***	0.020***	0.084**
	(0.10)	(0.11)	(0.01)	(0.01)	(0.04)
Constant	12.647***	-10.897***	2.922***	1.468***	3.568**
	(3.69)	(4.12)	(0.57)	(0.28)	(1.42)
R-squared	0.476	0.215	0.223	0.336	0.040
Counties	127	127	127	127	127
Dependent Variable:					
Mean	16.891	-8.394	3.286	1.705	3.787
Std. Dev.	56.739	51.725	7.127	3.883	16.138

1912 to 1914

	(1) $\Delta Total\ Exp\ PP$	(2) $\Delta Teacher\ PP$	(3) $\Delta Support\ PP$	(4) $\Delta Super.\ PP$	(5) $\Delta Capital\ PP$
$\Delta Approp\ PP$	0.839***	0.357**	0.039**	0.041***	0.117
	(0.32)	(0.15)	(0.02)	(0.01)	(0.20)
Constant	53.388**	14.093	-0.145	0.415	3.085
	(23.20)	(10.55)	(1.18)	(0.88)	(15.16)
R-squared	0.158	0.230	0.169	0.192	0.006
Counties	130	130	135	135	135
Dependent Variable:					
Mean	-5.960	-21.446	-3.530	-2.136	8.027
Std. Dev.	237.989	113.208	12.309	9.285	144.047

1922 to 1924

	(1) $\Delta Total\ Exp\ PP$	(2) $\Delta Teacher\ PP$	(3) $\Delta Support\ PP$	(4) $\Delta Super.\ PP$	(5) $\Delta Capital\ PP$
$\Delta Approp\ PP$	0.972	0.867***	0.046**	0.027*	-0.186
	(0.76)	(0.26)	(0.02)	(0.02)	(0.61)
Constant	175.474**	20.290	3.053*	3.069**	-69.002
	(71.22)	(24.31)	(1.73)	(1.53)	(56.97)
R-squared	0.016	0.200	0.210	0.175	0.014
Counties	146	146	146	146	146
Dependent Variable:					
Mean	185.063	61.380	6.811	6.339	-102.412
Std. Dev.	742.902	281.224	20.199	17.388	593.713

Notes: All regressions control for the contemporaneous change in enrollment. Standard errors are reported in parentheses. All monetary figures are nominal.

*** p<0.01, ** p<0.05, * p<0.1

Black Outcomes During Jim Crow

Table 2.7: Estimates of the Effect of Budget Shocks on Expenditures by Race

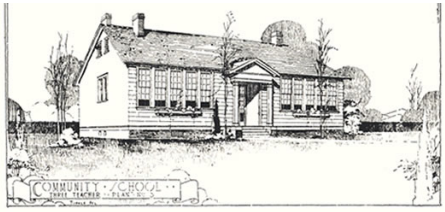
1902 to 1904						
	(1) $\Delta Teacher\ PP$					
$\Delta Approp\ PP$	0.408*					
	(0.24)					
Black	-19.154					
	(14.88)					
Black X $\Delta Approp\ PP$	-0.151					
	(0.29)					
Constant	6.615					
	(10.52)					
Local Tax Controls	NO					
R-squared	0.096					
Counties	206					
1912 to 1914						
	(1) $\Delta Teacher\ PP$	(2) $\Delta Teacher\ PP$	(3) $\Delta Capital\ PP$	(4) $\Delta Capital\ PP$	(5) $\Delta Total\ Exp\ PP$	(6) $\Delta Total\ Exp\ PP$
$\Delta Approp\ PP$	0.823***	0.800***	0.106	0.081	0.930***	0.881***
	(0.21)	(0.20)	(0.34)	(0.34)	(0.34)	(0.34)
Black	-50.942**	-45.364*	-11.569	-5.100	-62.511	-50.464
	(24.29)	(24.33)	(40.30)	(40.70)	(40.57)	(40.43)
Black X $\Delta Approp\ PP$	-0.681***	-0.643***	-0.096	-0.051	-0.777**	-0.694*
	(0.23)	(0.23)	(0.38)	(0.38)	(0.38)	(0.38)
Constant	41.512**	35.380**	15.724	9.802	57.237*	45.182
	(17.59)	(17.62)	(29.18)	(29.47)	(29.37)	(29.28)
Local Tax Controls	NO	YES	NO	YES	NO	YES
R-squared	0.166	0.186	0.001	0.009	0.078	0.109
Counties	254	254	254	254	254	254
1922 to 1924						
	(1) $\Delta Teacher\ PP$	(2) $\Delta Teacher\ PP$	(3) $\Delta Capital\ PP$	(4) $\Delta Capital\ PP$	(5) $\Delta Total\ Exp\ PP$	(6) $\Delta Total\ Exp\ PP$
$\Delta Approp\ PP$	1.370***	1.228***	-0.977	-1.102	0.392	0.126
	(0.29)	(0.29)	(0.81)	(0.82)	(0.93)	(0.94)
Black	-36.319	-22.280	122.333	137.282	86.015	115.002
	(37.31)	(37.85)	(103.33)	(106.30)	(117.96)	(120.89)
Black X $\Delta Approp\ PP$	-0.810**	-0.678*	1.690*	1.831*	0.880	1.152
	(0.36)	(0.37)	(1.01)	(1.04)	(1.15)	(1.18)
Constant	37.281	20.985	-122.506	-136.757*	-85.226	-115.772
	(28.34)	(28.57)	(78.48)	(80.25)	(89.59)	(91.26)
Local Tax Controls	NO	YES	NO	YES	NO	YES
R-squared	0.178	0.203	0.032	0.034	0.038	0.048
Counties	292	292	292	292	292	292

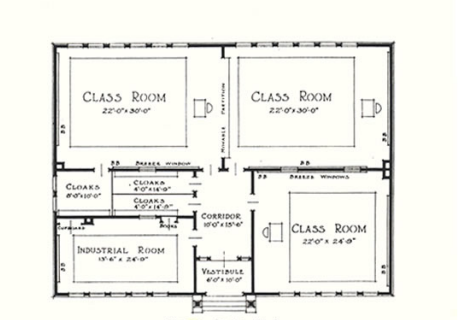
Notes: All regressions control for the change in race-specific enrollment and the change in total enrollment at the county level. Regressions represented by columns (2), (4), and (6) control for the change in local tax revenues per pupil and its interaction with the indicator variable for race. Standard errors are

Black Outcomes During Jim Crow

- Baker's results regarding the funding of public schools by local governments are rather depressing
- Given this failure of local governments to provide adequate education for black students, there was a private response
- One major initiative was the Julius Rosenwald Fund, funding construction of 5000 schools for black students between 1912 and 1933
- Were these types of interventions successful in closing black-white schooling gaps?
- Let's take a look and Carruthers and Wanamaker (2013)

Black Outcomes During Jim Crow



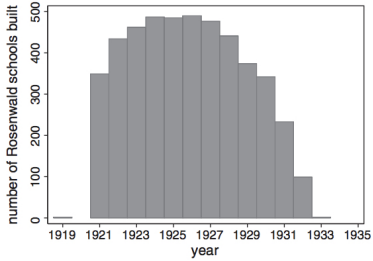


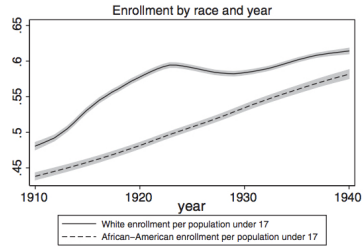
FLOOR PLAN No 3
THREE TEACHER COMMUNITY SCHOOL
TO FACE EAST OR WEST ONLY

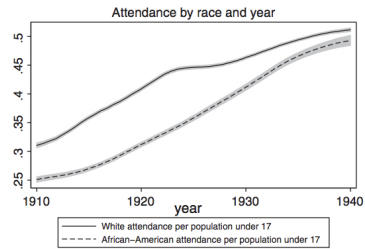
Black Outcomes During Jim Crow

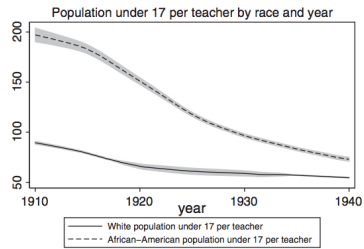
East Suffolk Elementary School

Black Outcomes During Jim Crow

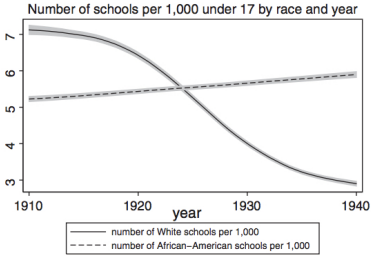


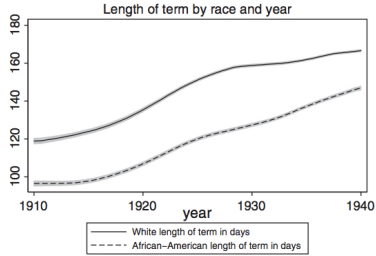


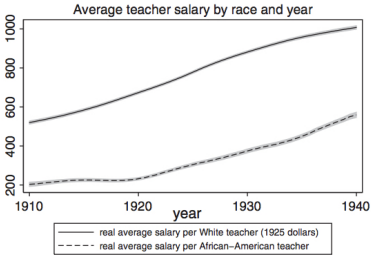


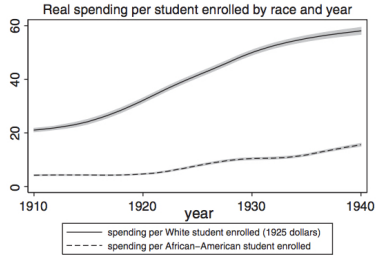


Black Outcomes During Jim Crow









Black Outcomes During Jim Crow

Table 4
Eq. (2) results: Impact of private Rosenwald contributions changes on local tax revenues and total spending in African-American and white public schools.

	(1) African-American School spending	(2) White School spending	(3) Local Tax revenues
$\hat{\alpha}^k$ Current Rosenwald contributions	0.877***	1.335**	−1.1E−04
	(0.159)	(0.518)	(0.001)
	[0.565, 1.189]	[0.319, 2.351]	[−0.002, 0.002]
$\hat{\alpha}^k_{-1}$ Rosenwald contributions, one year lag	0.023	1.656	1.6E−04
	(0.163)	(1.284)	(0.001)
	[−0.296, 0.343]	[−0.862, 4.174]	[−0.002, 0.002]
$\hat{\alpha}^k_{-2}$ Rosenwald contributions, two year lag	−0.306*	0.940	−0.001
	(0.176)	(0.980)	(0.001)
	[−0.561, 0.040]	[−0.981, 2.861]	[−0.003, 0.002]
$\hat{\alpha}_{-3^k}$ Rosenwald contributions, three year lag	−0.242	0.122	0.002
	(0.152)	(0.585)	(0.002)
	[−0.541, 0.056]	[−1.026, 1.269]	[−0.001, 0.006]
$\hat{\alpha}^k_{-4}$ Rosenwald contributions, four year lag	−0.188	−0.113	0.002*
	(0.120)	(0.650)	(0.001)
	[−0.422, 0.046]	[−1.387, 1.162]	[−4.8E−04, 0.005]
$\hat{\alpha}^k_{-5}$ Rosenwald contributions, five year lag	−0.097	−0.829	9.0E−05
	(0.126)	(0.592)	(0.001)
	[−0.344, 0.149]	[−1.990, 0.332]	[−0.001, 0.001]
n (county-years, 1916–1940)	3444	3444	3529
Adjusted R^2	0.09	0.09	0.10

Notes: The estimating equation is

$$\Delta Y^k_{ct} = \alpha^k \Delta R_{ct} + \sum_{s=1}^{5} \alpha^k_{-s} \Delta R_{c,t-s} + \Delta \mathbf{X}_{ct} \beta^k + \theta^k_c + \theta^k_t + \varepsilon^k_{ct}$$

where Y_{ct} represents total school expenditures, by race, and R_{ct} measures total private expenditures on Rosenwald initiatives. θ^k_c is a county fixed effect and θ^k_t is a year fixed effect. Unreported control variables include changes in enrollment (by race and lagged one year), and changes in Census variables (interpolated between decennial years: total population, black population share, crop value per capita, and percent of land devoted to agriculture). Spending regressions also control for changes in revenues from local taxes (lagged one year). Regressions are weighted by total, county-wide Rosenwald contributions from 1921–1933 and estimated with heteroscedasticity-robust standard errors clustered within counties. Standard errors are in parentheses below each expenditure coefficient and 95% confidence intervals are in brackets.
*** indicates statistical significance at 99% confidence (with respect to zero), ** at 95%, and * at 90%.

Black Outcomes During Jim Crow

Table 10
Eq. (7) results: school spending, school attendance, and literacy.

Outcome population	Attending or enrolled in school, 1910–1930	
	African-American	White
Per-pupil real expenditures (current)	0.001*	−5.20E−6
	(0.001)	(−2.4E−4)
n (census respondents)	23,135	29,102
Adjusted R-squared	0.09	0.11
Outcome population	Can read and write, 1930	
	African-American	White
Per-pupil real expenditures (average over age 7–13)	0.001*	1.3E−4*
	(5.5E−4)	(7.5E−5)
n (census respondents)	6266	9347
Adjusted R-squared	0.10	0.06

Notes: The estimating equation is

$$Y^k_{ict} = \alpha^k + S^k_{ct}\psi^k + \mathbf{X}^k_i\beta^k + \theta^k_c + \theta^k_t + \varepsilon^k_{ict}$$

where Y^k_{ict} is school attendance for age 7–17 respondents in the 1910–1930 U.S. Census, by race (top panel) or reading and writing literacy for age 15–23 respondents in 1930 (bottom panel). S_{ct} is per-pupil spending in a respondent's county of residence. X_i is a vector of individual characteristics, θ^k_c is a county fixed effect and θ^k_t is a year fixed effect. *** indicates statistical significance at 99% confidence (with respect to zero), ** at 95%, and * at 90%.

Black Outcomes During Jim Crow

- Carruthers and Wanamaker find that Rosenwald funds did increase contemporaneous black schooling resources
- However, they find no long-term gains in spending in response to funds
- Why? Funds *crowded out* public expenditures and were diverted to white schools
- Better news is that Rosenwald beneficiaries realized human capital gains that outpaced those for white students
- This may be due to where white and black students were on their human capital production function

Announcements

- Remember that the second referee report due date is pushed back to December 1st
- Feel free to email me questions or drafts of referee reports or empirical projects
- Also feel free to stop by office hours (especially useful if you have data or graphing questions)
- We're starting our section on servitude and slavery today
- The required reading is Logan (2018) on Reconstruction
- The section after that will be on immigration and internal migration, readings will be Abramitzky, Boustan and Eriksson (2019) and Collins and Wanamaker (2014)

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- Thanksgiving break will lead to a bunch of small adjustments:
  - Thursday's office hours will be shortened to be from 11am to noon
  - Given that you'll be spread across time zones, we won't have a synchronous class period on Tuesday
  - Instead, I'll post a lecture's worth of videos on the economics of the 1918 influenza pandemic
  - I'll hold office hours from 9:30am to 11am on Tuesday over Zoom (only office hours for Thanksgiving week but I'll respond to emails all week)
- Final required readings: Logan (2018) on Reconstruction, Abramitzky, Boustan and Eriksson (2019) on the Age of Mass Migration and Collins and Wanamaker (2014) on the Great Migration

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