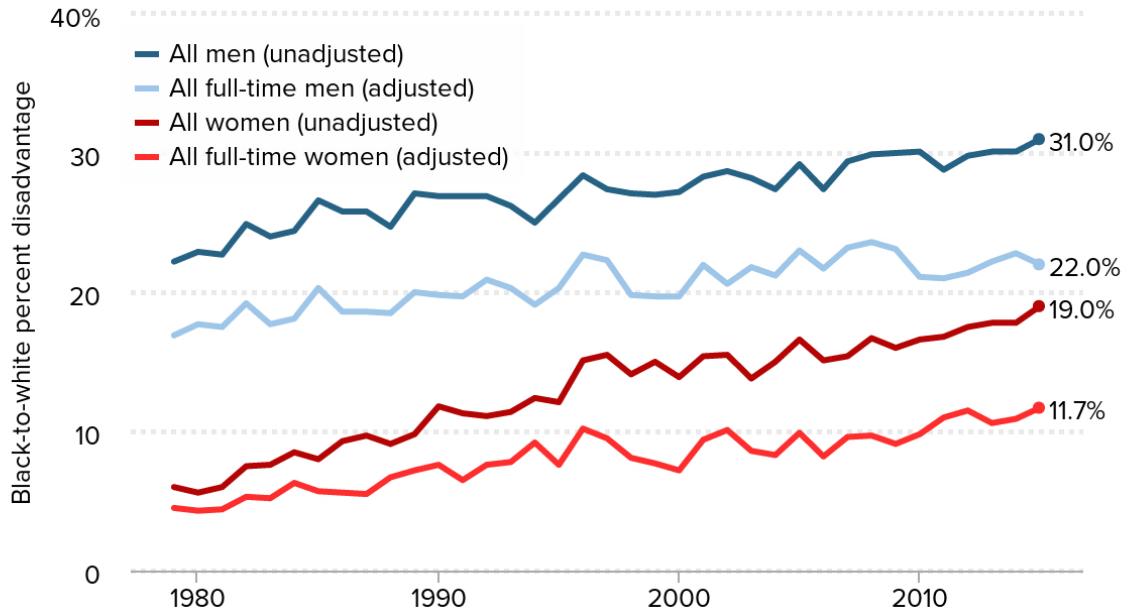
Announcements

- Research projects!
- If you have questions, regular office hours for this week and next
- After classes end, I'm happy to schedule individual times to meet
- This week, black-white income gaps and mobility (read Aaronson and Mazumder "The Impact of Rosenwald Schools on Black Achievement")
- Next week, gender gaps in income and mobility (read Goldin "The U-Shaped Female Labor Force Function in Economic Development and Economic History")
- First, a quick look at the class data

Black-White Wage Gaps

Average hourly black-white wage gaps, by gender, 1979–2015 (adjusted and unadjusted)



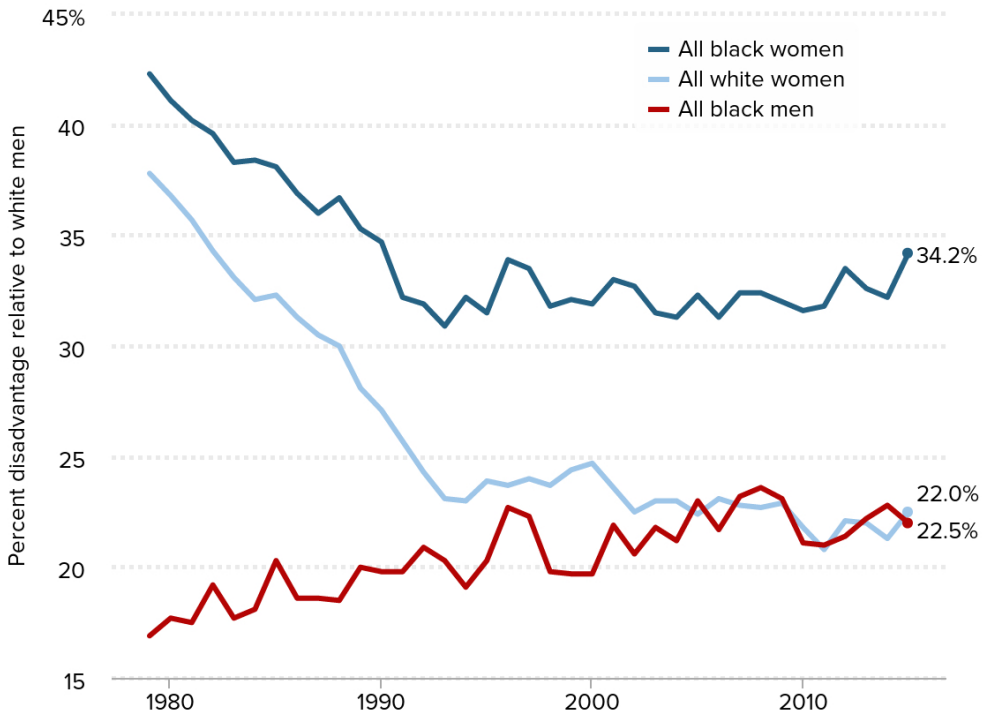
Note: The adjusted wage gaps are for full-time workers and control for racial difference in education, potential experience, region of residence, and metro status.

Source: EPI analysis of Current Population Survey (CPS) Outgoing Rotation Group microdata

Economic Policy Institute

Black-White Wage Gaps

Adjusted average hourly wage gaps relative to white men by race and gender, 1979—2015



Note: The adjusted wage gaps are for full-time workers and control for racial differences in education, potential experience, region of residence, and metro status.

Source: EPI analysis of Current Population Survey (CPS) Outgoing Rotation Group microdata

Economic Policy Institute

Black-White Wage Gaps

TABLE 3
FRACTION OF WOMEN 25–33 WHO WORKED IN PAST CALENDAR YEAR

	High School or Less	Some College	College +	All Levels
	A. 1990 Census			
Black	.57	.83	.94	.71
	[8,346]	[6,005]	[2,336]	[16,687]
White	.67	.82	.90	.78
	[51,674]	[39,721]	[29,148]	[120,543]
	B. 1990 March CPS			
Black	.64	.86	.95	.74
	[770]	[318]	[160]	[1,248]
White	.71	.81	.90	.78
	[5,120]	[2,098]	[2,189]	[9,407]
	C. 1990 NLSY			
Black	.71	.88	.96	.79
	[755]	[383]	[146]	[1,284]
White	.78	.87	.91	.83
	[1,217]	[509]	[525]	[2,251]

NOTE.—Numbers of observations are in brackets. All three samples include women who report that they are not working as well as women who report information on earnings and labor supply required to compute an hourly wage. Employed women with missing earnings or labor supply data as well as women whose implied hourly wage is less than $1.00 or more than $100 per hour are excluded. The CPS means are weighted using the March Supplemental Weight.

Black-White Wage Gaps

TABLE 8

A. Median Regression Results for Women

	Census 1990		CPS 1990		NLSY 1990		NLSY 1988–1992	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Black	−.11	−.07	−.16	−.14	−.18	−.15	−.21	−.16
	(.006)	(.005)	(.024)	(.022)	(.024)	(.022)	(.019)	(.022)
Schooling	…	.13	…	.12	…	.11	…	.12
		(.001)		(.004)		(.007)		(.006)
Observations	105,485	105,485	8,175	8,175	2,878	2,878	3,391	3,391

B. Median Regression Results with Imputations

	Rule 1		Rule 2		Rule 3	
	(1)	(2)	(3)	(4)	(5)	(6)
Black	−.248	−.188	−.249	−.188	−.260	−.196
	(.028)	(.021)	(.026)	(.022)	(.026)	(.024)
Schooling	…	.129	…	.132	…	.131
		(.006)		(.006)		(.007)
Observations	3,508	3,508	3,539	3,539	3,561	3,561

Note.—Numbers in parentheses are standard deviations. Panel A includes indicator variables for age. Panel B includes indicator variables for potential experience levels and years of school completed. The CPS analyses are weighted using the March Supplemental Weight. Rule 1: Impute a wage of $1.00 for all long-term aid recipients with no postsecondary schooling and no spousal support who do not report market work over the 1988–92 interviews. Rule 2: Rule 1 plus impute $30 per hour for all white women with at least a high school education and spousal support averaging over $45,000 per year. Also, impute $30 per hour for black women who have at least a high school education and average spousal support of $30,000 per year. Rule 3: Rule 2 except lower the spousal support cutoffs to $32,000 for white women and $21,000 for black women.

Black-White Wage Gaps

- How do we have such persistent gaps between black and white wages?
- There is a very, very large literature looking at explanations for these gaps in modern data
- We're going to take a slightly different approach and start with historical roots of these gaps
- One basic question: given the dramatically conditions for white and black individuals coming out of the Civil War, how long do we expect black-white gaps to persist?
- This is essentially a question about mobility rates

Mobility and Black-White Wage Gaps

- To think about the role of mobility, we'll look at some brand new research by Chetty, Hendren, Jones and Porter
- They are going to estimate mobility rates by race in the modern US in a way similar to the previous Chetty work we've looked at
- Recall that Chetty is thinking about the following relationship:

$$y_{i,t+1} = \alpha + \beta y_{i,t} + \varepsilon_{i,t+1}$$

- Here $y_{i,t+1}$ is the income percentile rank of child i

Mobility and Black-White Wage Gaps

- Suppose that α (capturing *absolute* mobility) and β (capturing *relative*) mobility are the same regardless of race
- This implies the same steady state average income for white and black individuals
- To see why, first note that mean income rank of individuals in one generation is simply:

$$\overline{y}_{t+1} = \alpha + \beta \overline{y}_t$$

- Now let's think about the mean income rank in s generations

Mobility and Black-White Wage Gaps

$$\overline{y}_{t+1} = \alpha + \beta \overline{y}_t$$

$$\overline{y}_{t+2} = \alpha + \beta(\alpha + \beta \overline{y}_t) = \alpha + \beta\alpha + \beta^2 \overline{y}_t$$

$$\overline{y}_{t+3} = \alpha + \beta(\alpha + \beta\alpha + \beta^2 \overline{y}_t) = \alpha + \beta\alpha + \beta^2\alpha + \beta^3 \overline{y}_t$$

$$\ldots$$

$$\overline{y}_{t+s} = \alpha + \alpha\beta + \alpha\beta^2 + \ldots + \alpha\beta^{s-1} + \beta^s \overline{y}_t$$

$$\overline{y}_{t+s} = \alpha(1 + \beta + \beta^2 + \ldots + \beta^{s-1}) + \beta^s \overline{y}_t$$

$$\overline{y}_{t+s} = \alpha \frac{1 - \beta^s}{1 - \beta} + \beta^s \overline{y}_t$$

$$\text{As } s \to \infty,\ \beta^s \to 0 \text{ so } \overline{y}_{t+s} \to \frac{\alpha}{1 - \beta}$$

Mobility and Black-White Wage Gaps

- So in the steady state, the mean income level will be:

$$\overline{y}_t = \frac{\alpha}{1-\beta}$$

- If the white and black populations have the same values for α and β, they should converge to the same values of average income
- How long will this take? Let's think about the gap in any given period s based on different starting mean incomes, $\overline{y}_{b,0}$ and $\overline{y}_{w,0}$

Mobility and Black-White Wage Gaps

- We can start by plugging $\overline{y}_{b,0}$ and $\overline{w,0}$ into our expression for $\overline{y}_{i,s}$:

$$\Delta\overline{y}_s = \left[\alpha\frac{1-\beta^s}{1-\beta} + \beta^s\overline{y}_{w,0}\right] - \left[\alpha\frac{1-\beta^s}{1-\beta} + \beta^s\overline{y}_{b,0}\right]$$

$$\Delta\overline{y}_s = \beta^s\Delta\overline{y}_0$$

- So the gap closes by a factor of β every generation
- Let's think about a β of 0.5
- After one generation, the gap is reduced in half
- After two generations, it is down to a quarter of its original size
- After six generations (roughly since emancipation), it's down to 1.6% of its original size

Mobility and Black-White Wage Gaps

- It's a different story if α differs by race
- Assuming we have α_b and α_w, let's rewrite our gap in generation s:

$$\Delta\overline{y}_s = \left[\alpha_w \frac{1-\beta^s}{1-\beta} + \beta^s \overline{y}_{w,0}\right] - \left[\alpha_b \frac{1-\beta^s}{1-\beta} + \beta^s \overline{y}_{b,0}\right]$$

$$\Delta\overline{y}_s = \Delta\alpha \frac{1-\beta^s}{1-\beta} + \beta^s \Delta\overline{y}_0$$

- Assuming that $\alpha_w > \alpha_b$, this leads to a larger gap in each generation than we previously found
- Furthermore, we now converge to a steady state gap:

$$\Delta\overline{y} = \frac{\Delta\alpha}{1-\beta}$$

Mobility and Black-White Wage Gaps

$$\Delta \overline{y} = \frac{\Delta \alpha}{1 - \beta}$$

- So a difference in absolute mobility leads to a permanent gap
- Also notice that the permanent gap is not a function of the initial income gap
- So if you address a current income gap in a way that doesn't impact absolute mobility, you make no impact on the long run income gap
- What if there are also racial differences in relative mobility?
- This will affect the relative speed at which racial groups converge to the steady state

Amazing Data

Amazing Data

- Chetty et al are going to estimate mobility rates by race
- We've covered the mind-blowing Chetty data before
- Parent and child tax returns linked to college data
- You might be asking yourself, where did I record my race on my 1040? (or you may be asking yourself this in a few days)
- The answer: nowhere, Chetty et al have also linked tax returns to census returns

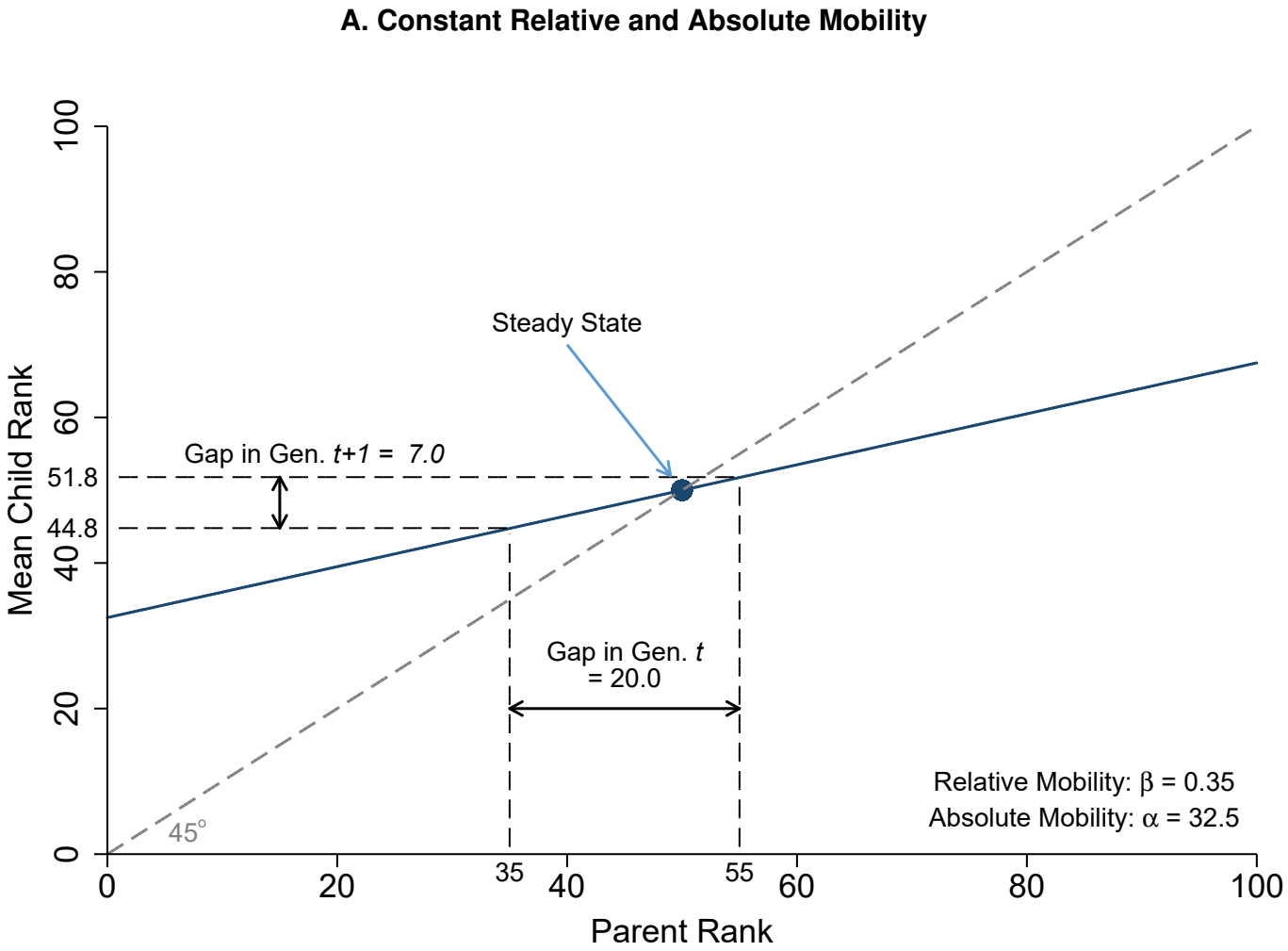
Amazing Data

- So just what's available on a census form?
- You seen historical census manuscripts
- As the country gets bigger, you can't ask as many questions of everyone
- Nowadays we have a short form (5/6 households) and a long form (1/6 households)
- Let's take a look at both: short form, long form

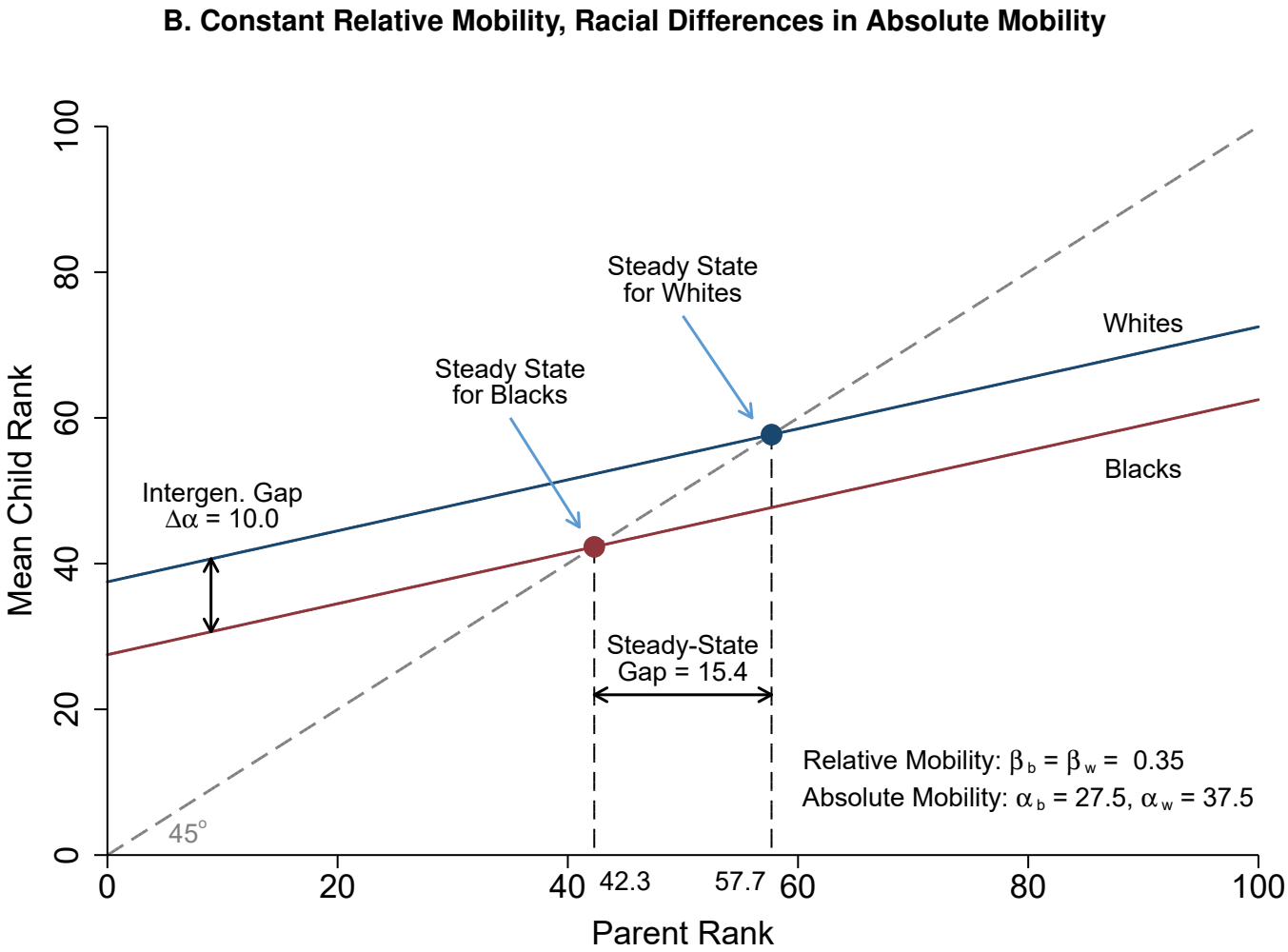
Announcements

- Research projects!
- If you have questions, regular office hours for this week and next
- After classes end, I'm happy to schedule individual times to meet
- Next Friday, we'll use the class period as a work session for your projects, I can show you things on Stata, help with data, etc.

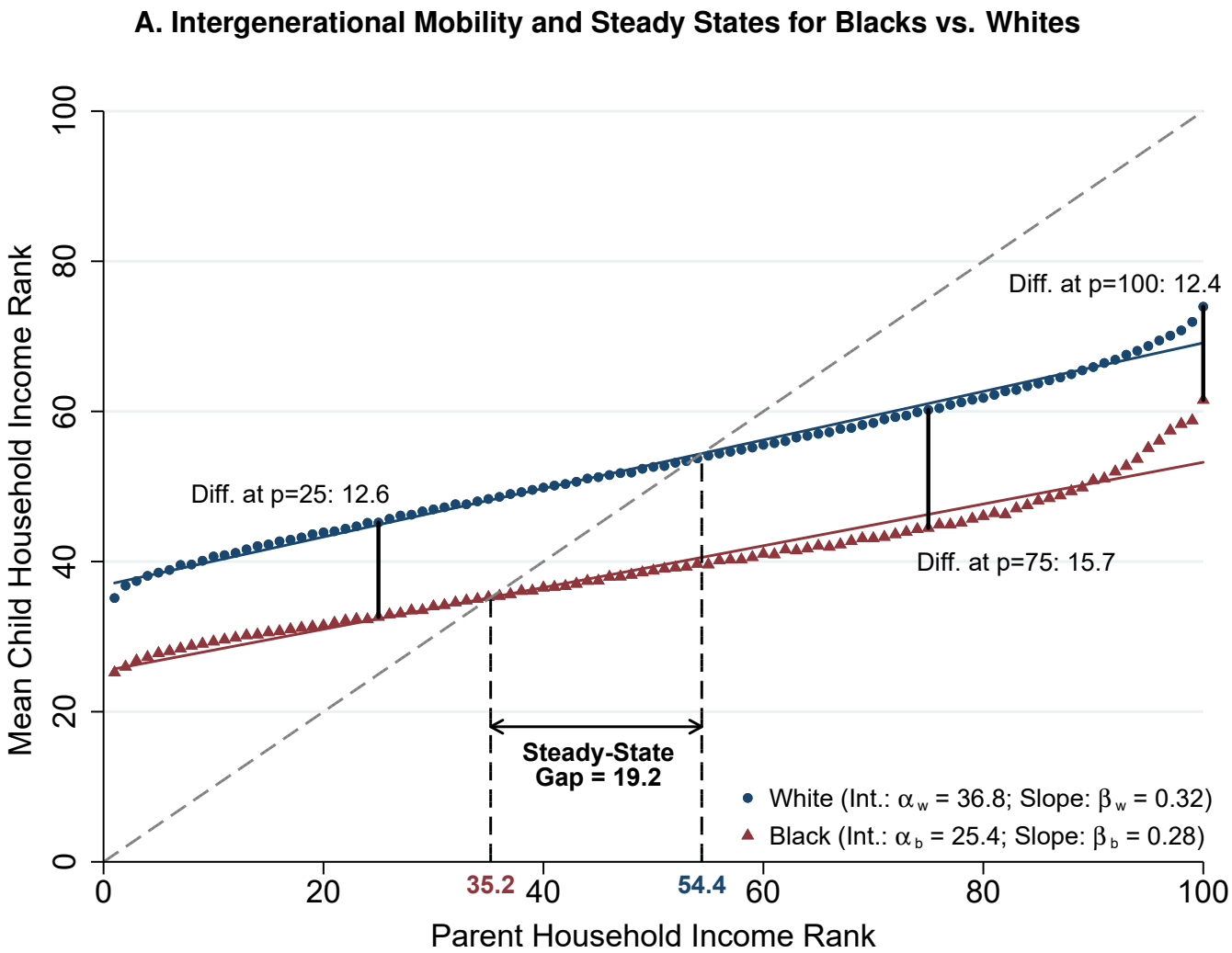
Modern Mobility by Race



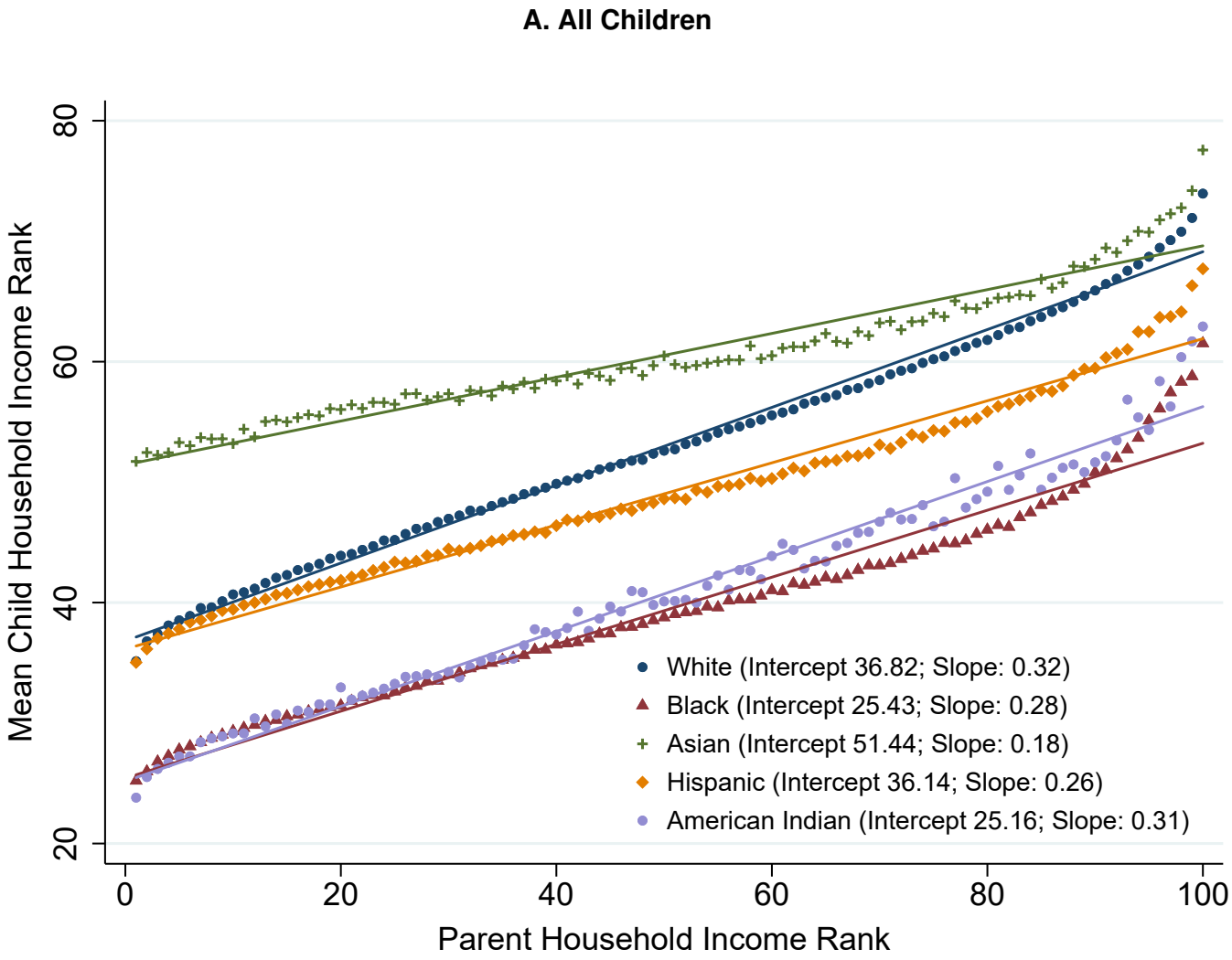
Modern Mobility by Race



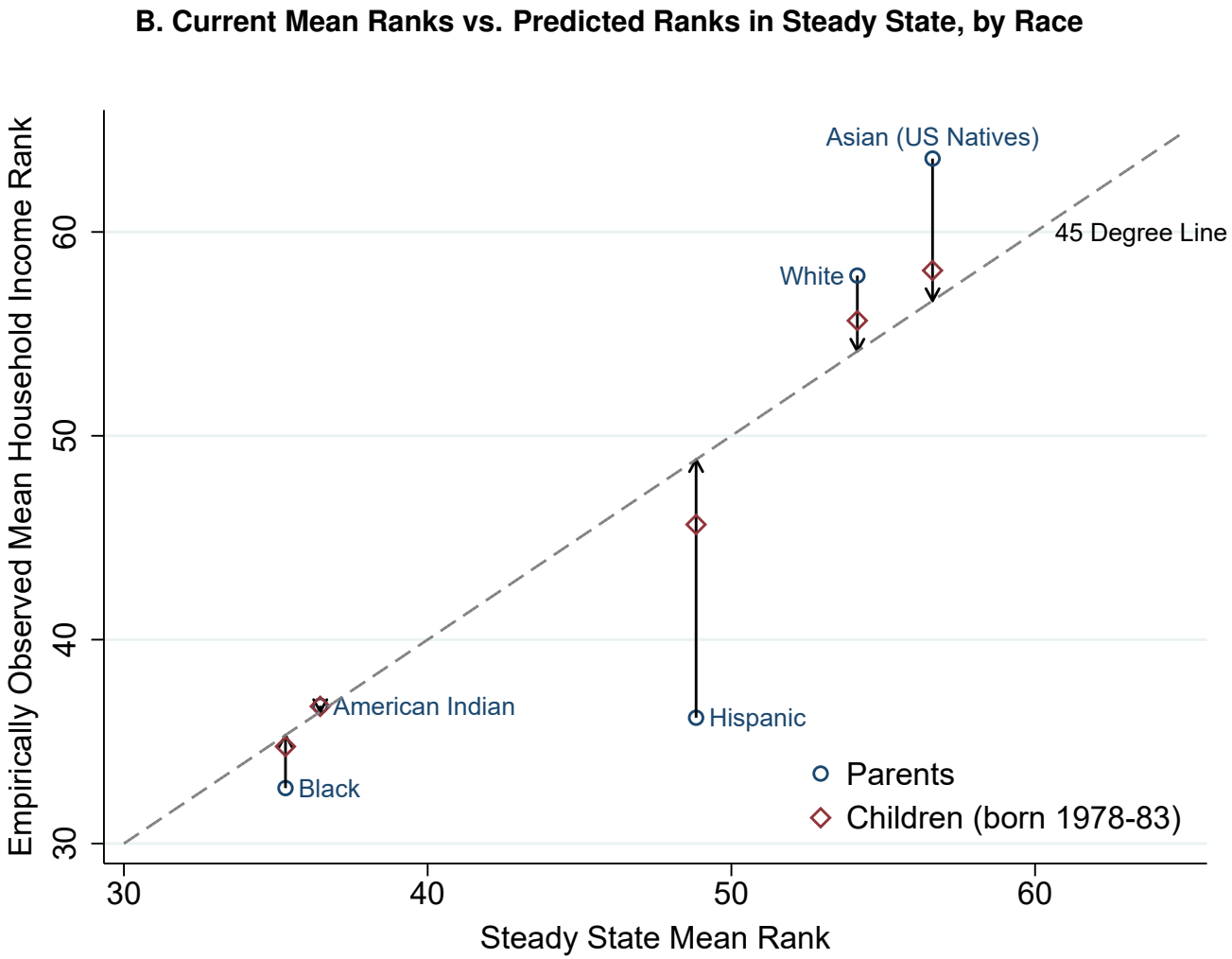
Modern Mobility by Race



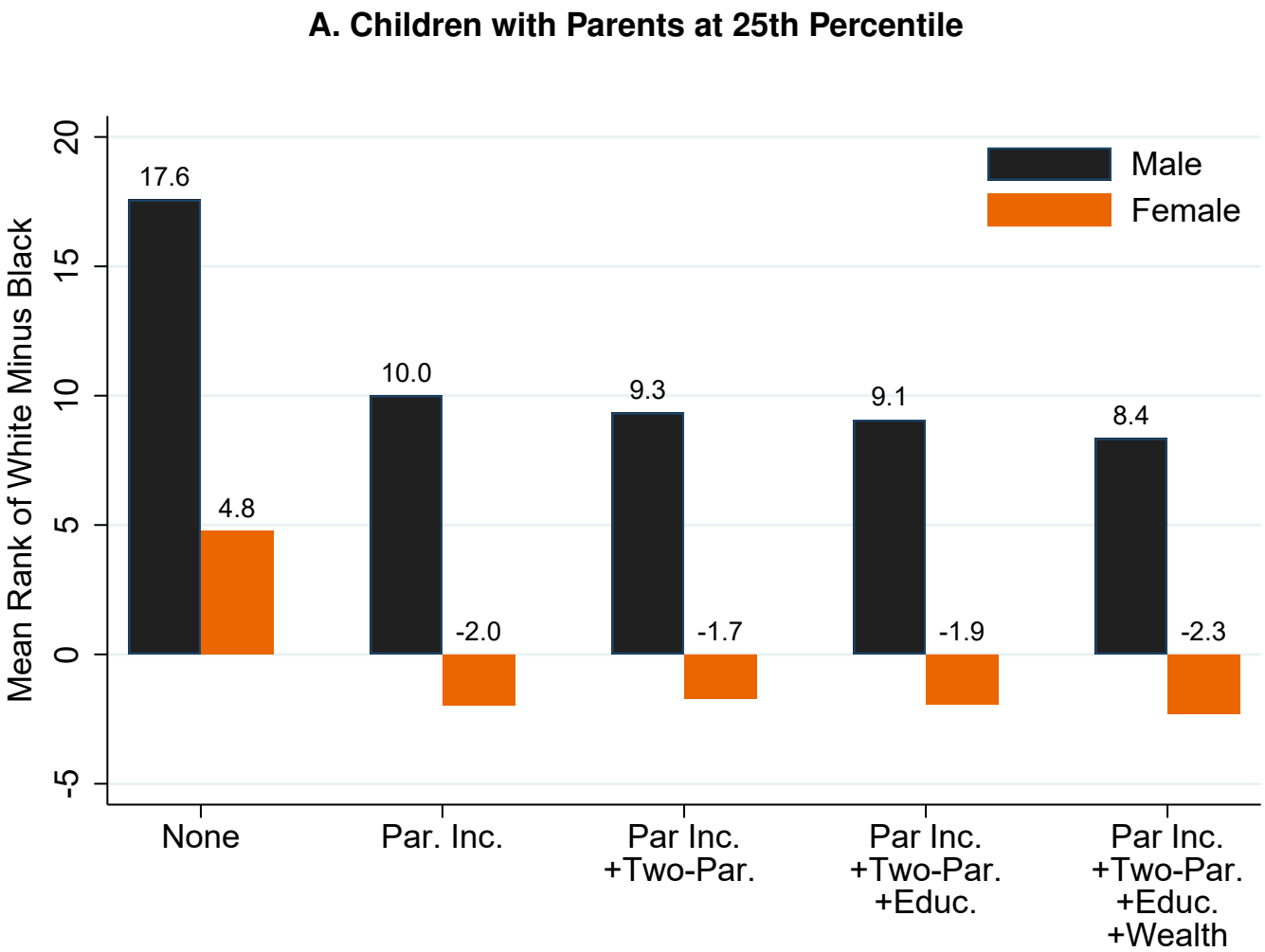
Modern Mobility by Race



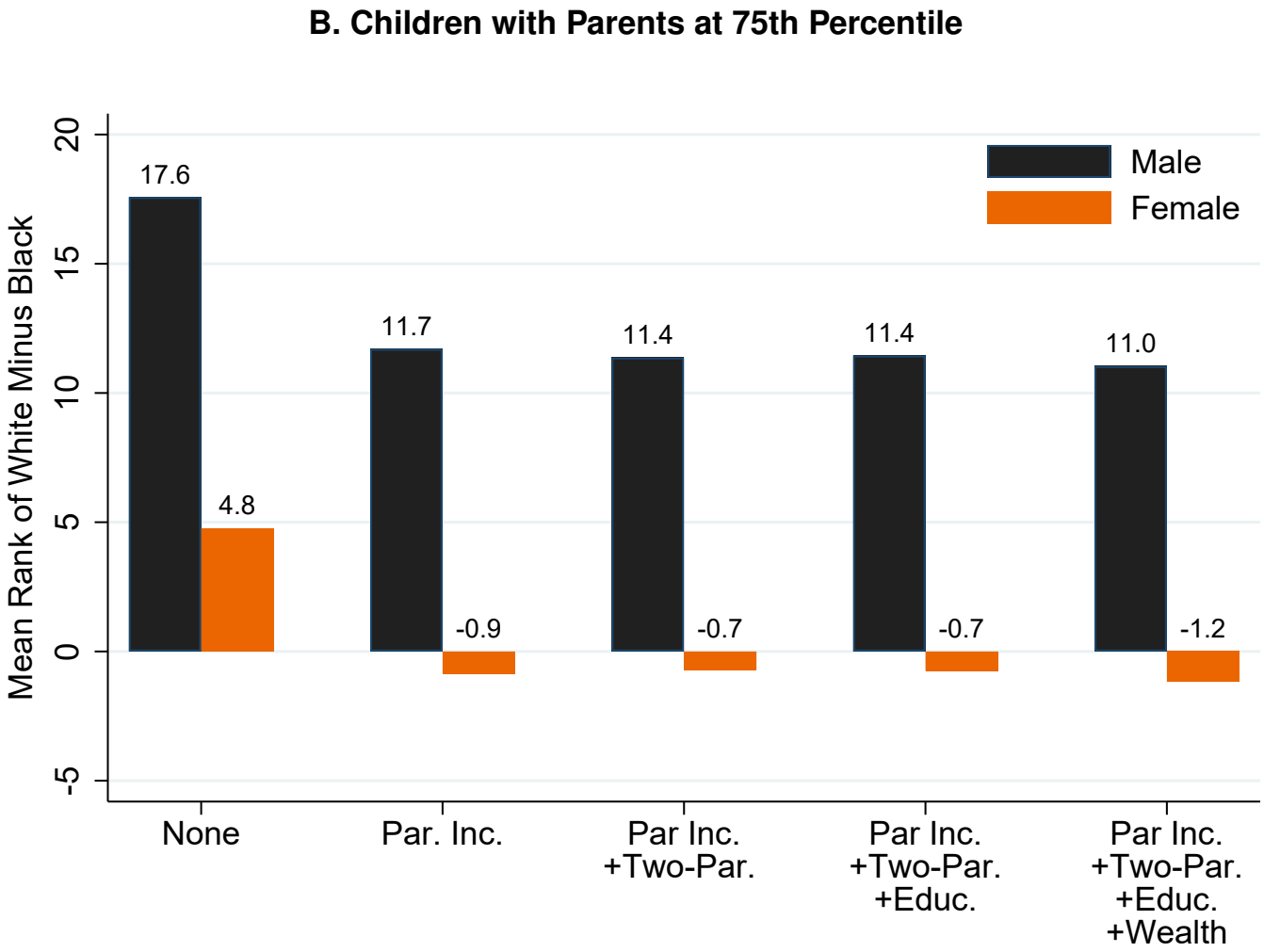
Modern Mobility by Race



Modern Mobility by Race



Modern Mobility by Race



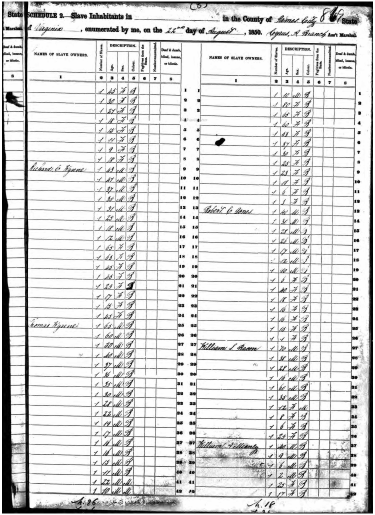
Historical Inequality and Mobility by Race

- Now that we have a sense of modern income gaps and mobility patterns, let's turn to some historical evidence
- We'll start with the emergence from the Civil War, looking at two different sets of papers
- For the mobility of white individuals we'll look at Dupont and Rosenbloom (2017) "The Economic Origins of the Postwar Southern Elite" and Ager, Boustan and Eriksson (2019) "The Intergenerational Effects of a Large Wealth Shock: White Southerners After the Civil War"
- For the mobility of black individuals we'll look at Sacerdote (2005) "Slavery and the Intergenerational Transmission of Human Capital" and Collins and Wanamaker (2017) "Up from Slavery? African American Intergenerational Mobility Since 1880"

Modern Mobility by Race

Carters Grove

The Postwar Southern Elite


SCHEDULE 2.—Slave Inhabitants in in the County of James City State of Virginia, enumerated by me, on the 22nd day of August, 1850. Cyrus A. Branch Ass't Marshal.

NAMES OF SLAVE OWNERS. | Number of Slaves. | DESCRIPTION. Age. Sex. Colour. | Fugitives from the State. | Number manumitted. | Deaf & dumb, blind, insane, or idiotic.

Richard C. Wynne

Thomas Wynne

Robert C. Jones

William S. Bacon

William Williams

The Postwar Southern Elite

- Dupont and Rosenbloom are exploring the effect of the Civil War on the concentration of wealth in the South
- Past work has been restricted to cross-sectional data
- With cross-sectional data, we can see that wealth remains concentrated after the war
- But that leaves a really big question
- Was that wealth concentrated in the hands of the same plantation owners?
- To get at that, you need to do some linking

The Postwar Southern Elite

The distribution of wealth within regions in 1870

Region	Share of real property held by top 1%	Share of personal property held by top 1%	Share of total property held by top 1%
New England	0.268	0.497	0.327
Mid Atlantic	0.271	0.402	0.263
East North Central	0.22	0.339	0.217
West North Central	0.248	0.255	0.229
South Atlantic	0.364	0.455	0.354
East South Central	0.338	0.34	0.312
West South Central	0.475	0.322	0.367

The Postwar Southern Elite

Table 1
1860 Characteristics of Northerners and Southerners, by percentile.

	North					South				
	Below 55th	55th	90th	95th	99th	Below 55th	55th	90th	95th	99th
Number of observations	18,764	12,379	1782	1378	356	6631	4221	599	487	121
Real property wealth (Median, $)	0	1600	6000	10,000	27,860	0	1500	6250	12,800	50,000
Personal property wealth (Median, $)	100	500	1205	2612	10,812	100	1200	11,305	25,000	70,000
Total property wealth (Median, $)	100	2200	7327	13,000	40,000	150	3100	17,800	38,000	122,250
Real as Pct of total property wealth	28.4%	71.6%	76.3%	71.9%	67.6%	23.4%	52.1%	40.5%	38.0%	44.9%
Male	89.2%	93.9%	94.9%	94.2%	93.3%	84.7%	89.9%	90.8%	90.1%	94.2%
Rural resident	65.1%	84.7%	85.6%	76.2%	53.4%	82.1%	92.2%	90.3%	88.9%	85.1%
Foreign born	41.4%	20.2%	11.3%	10.7%	16.3%	14.3%	6.0%	4.8%	3.7%	5.8%
Living outside birthstate	68.5%	58.6%	48.8%	50.6%	55.9%	48.7%	49.8%	45.2%	50.5%	50.4%
White	98.2%	99.7%	99.9%	99.8%	100.0%	94.4%	99.4%	99.8%	99.6%	99.2%
Age (Median)	37	43	46	48	49	38	42	46	48	48
Professional & Technical	2.1%	3.1%	2.9%	7.0%	7.6%	1.7%	4.3%	9.0%	8.6%	3.3%
Farming	22.4%	61.8%	68.5%	55.9%	30.3%	39.1%	69.5%	68.6%	70.6%	76.9%
Clerical & Managerial	4.4%	7.7%	11.8%	19.7%	35.4%	3.0%	6.8%	11.4%	12.7%	14.0%
Sales	1.6%	0.8%	0.8%	0.4%	2.2%	1.0%	0.7%	0.7%	0.2%	0.0%
Craftsmen	21.7%	12.4%	6.2%	4.9%	6.2%	16.3%	7.7%	3.0%	1.8%	1.7%
Operatives & Kindred workers	11.0%	5.0%	2.6%	3.6%	3.7%	6.4%	2.2%	0.8%	0.4%	0.0%
Service workers	2.4%	0.5%	0.2%	0.6%	0.0%	2.9%	0.9%	1.0%	0.4%	0.0%
Laborers	23.4%	2.8%	1.1%	0.8%	0.8%	18.0%	1.2%	0.2%	0.2%	0.0%
Non-occupational	11.0%	6.0%	6.0%	7.0%	13.8%	11.7%	6.8%	5.3%	4.9%	4.1%

Sources and notes: The data are from the Integrated Public Use Microdata Series (IPUMS) 1-in-100 random sample of the Census (Ruggles et al., 2015). The North includes states in the Northeast and North Central Census division, while the South includes states in the South Atlantic and South Central Census divisions.

The Postwar Southern Elite

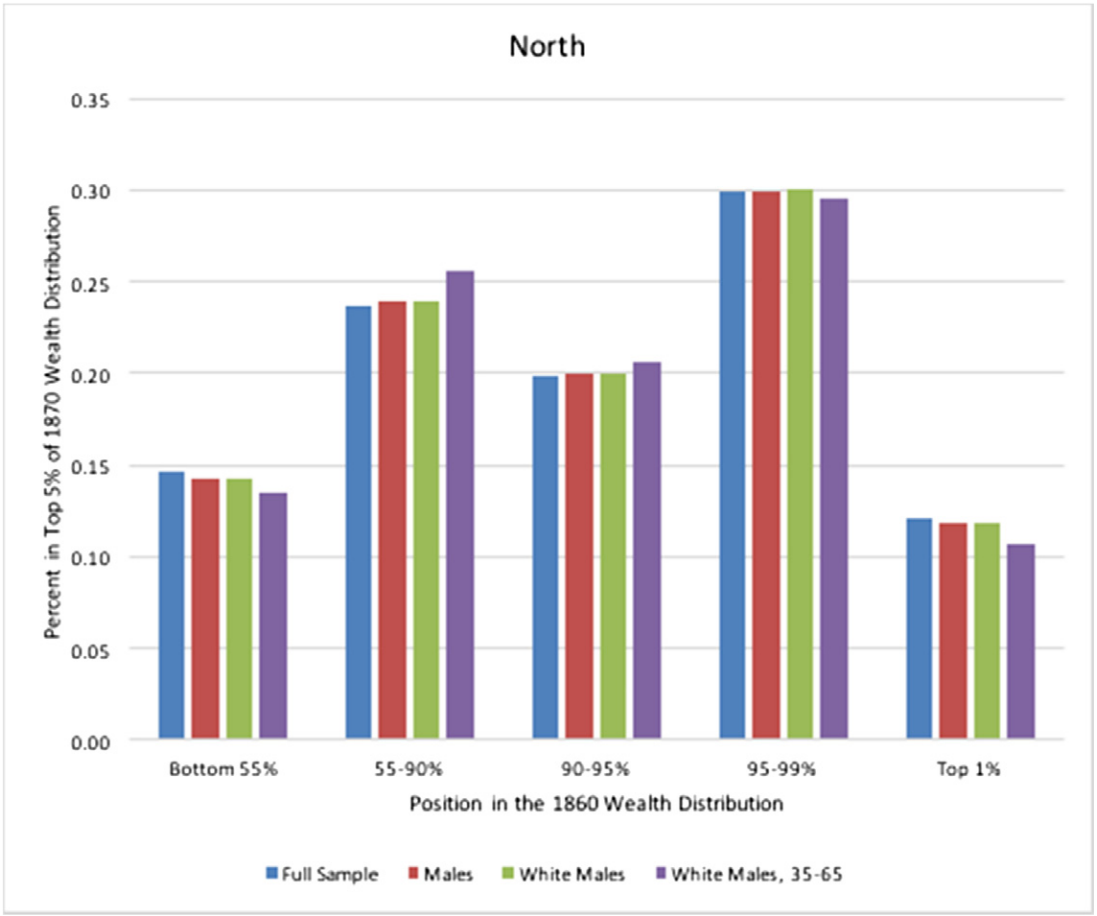
Table 2
1870 Characteristics of Northerners and Southerners, by percentile.

	North					South				
	Below 55th	55th	90th	95th	99th	Below 55th	55th	90th	95th	99th
Number of observations	25,261	15,992	2429	1810	492	11,099	7718	1049	833	217
Real property wealth (Median, $)	0	2400	8000	15,000	40,000	0	380	3000	7300	25,000
Personal property wealth (Median, $)	100	650	2000	3500	20,000	0	300	1000	2000	6442
Total property wealth (Median, $)	175	3100	10,500	19,000	60,000	0	725	4152	9900	31,333
Real as Pct of total property wealth	34.4%	73.1%	75.9%	73.3%	63.8%	8.7%	45.6%	69.4%	73.6%	72.4%
Male	88.1%	92.7%	94.9%	94.4%	92.3%	79.6%	89.1%	91.9%	90.6%	90.8%
Rural resident	60.6%	79.6%	79.7%	67.0%	39.2%	85.2%	90.7%	85.3%	83.9%	67.7%
Foreign born	40.8%	28.6%	19.3%	17.2%	17.3%	6.5%	7.5%	12.1%	10.3%	11.5%
Living outside birthstate	67.9%	62.5%	55.8%	51.1%	51.4%	39.3%	46.5%	43.9%	40.8%	47.9%
White	97.1%	99.6%	99.9%	99.9%	99.8%	40.9%	89.8%	99.3%	99.5%	99.5%
Age (Median)	39	45	48	49	50	40	42	46	48	50
Professional & Technical	2.1%	2.5%	3.7%	6.1%	7.3%	1.0%	3.0%	6.5%	8.2%	8.8%
Farming	20.5%	56.5%	62.2%	50.6%	17.9%	20.3%	62.6%	61.8%	56.1%	48.8%
Clerical & Managerial	5.1%	8.4%	14.0%	21.7%	43.7%	1.6%	4.3%	13.3%	18.0%	24.9%
Sales	1.8%	1.3%	1.2%	1.4%	2.6%	0.6%	0.6%	0.5%	0.6%	0.5%
Craftsmen	18.6%	12.4%	6.1%	5.0%	5.1%	7.3%	7.9%	5.5%	5.0%	4.1%
Operatives & Kindred workers	14.4%	5.8%	2.6%	3.1%	3.0%	4.0%	3.1%	2.0%	1.0%	1.4%
Service workers	2.2%	0.6%	0.4%	0.3%	0.4%	3.8%	0.9%	0.6%	0.5%	0.0%
Laborers	23.5%	4.1%	1.3%	0.9%	0.6%	45.9%	8.0%	0.9%	0.5%	0.0%
Non-occupational	11.8%	8.3%	8.4%	10.8%	19.3%	15.5%	9.6%	9.1%	10.2%	11.5%

Sources and notes: See Table 1.

The Postwar Southern Elite

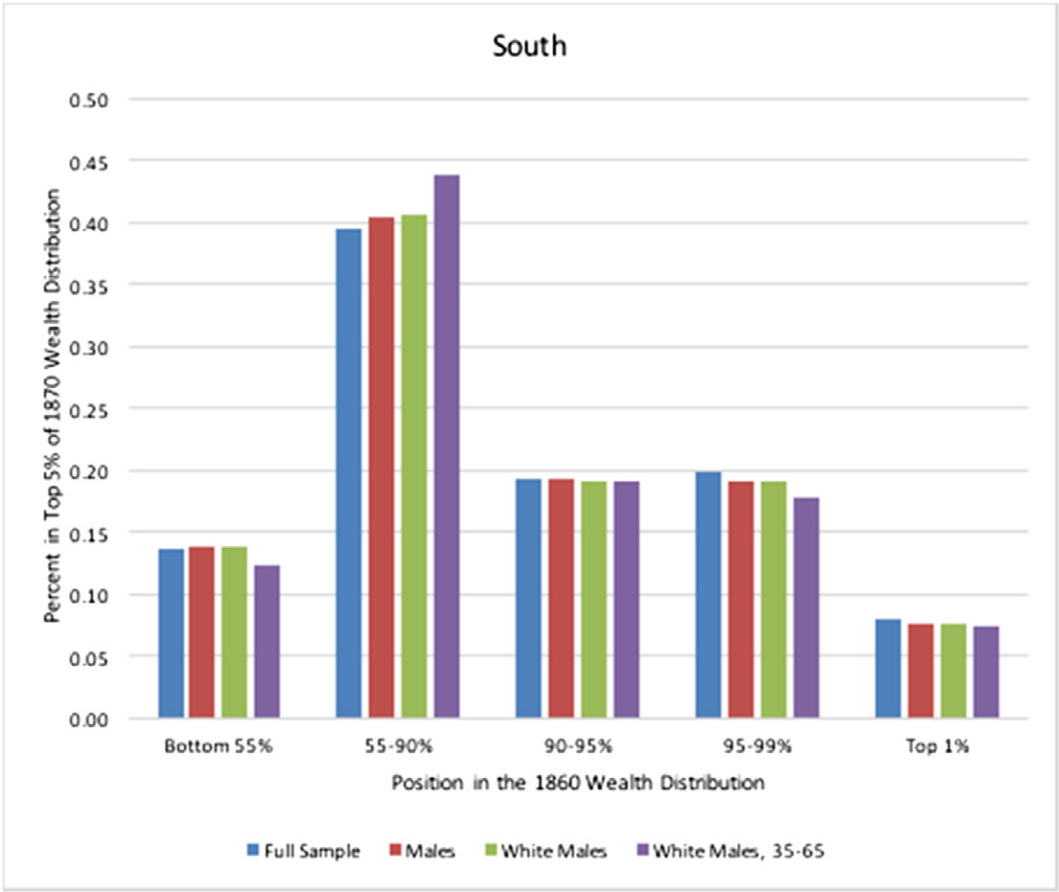
Panel B: North



Notes: Shows the fractions of Northern households in various 1860 wealth strata (along the horizontal axis) that moved into the top five percent of wealth holders in 1870 (measured on the vertical axis) using various restrictions on the population.

The Postwar Southern Elite

Panel A: South



Notes: Shows the fractions of Southern households in various 1860 wealth strata (along the horizontal axis) that moved into the top five percent of wealth holders in 1870 (measured on the vertical axis) using various restrictions on the population.

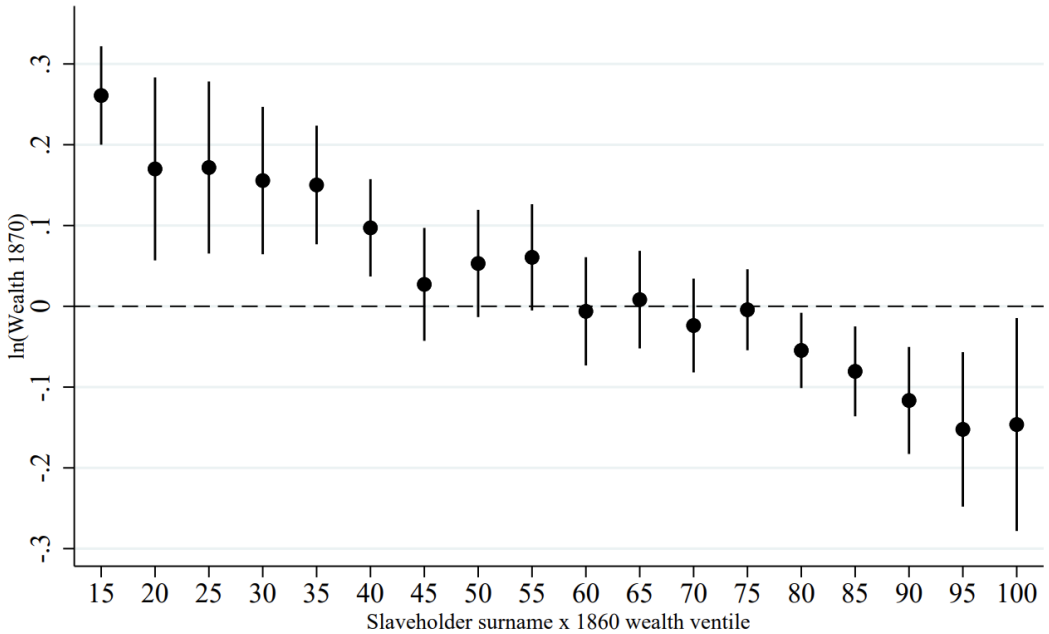
Slaveholders After the War

Figure 2: Relationship between household wealth in 1850 and 1860 by slaveholder surname in 1850

Notes: This figure reports the logarithm of total household wealth in 1860 by percentile in the 1850 wealth distribution for white male households heads living in the US South in 1850. Note that the 1850 Census asked only about real estate wealth, while the 1860 Census includes both real estate wealth and personal property. Slaveholder surnames are defined as names that are associated with above median slaveholding within their county of residence.

Slaveholders After the War

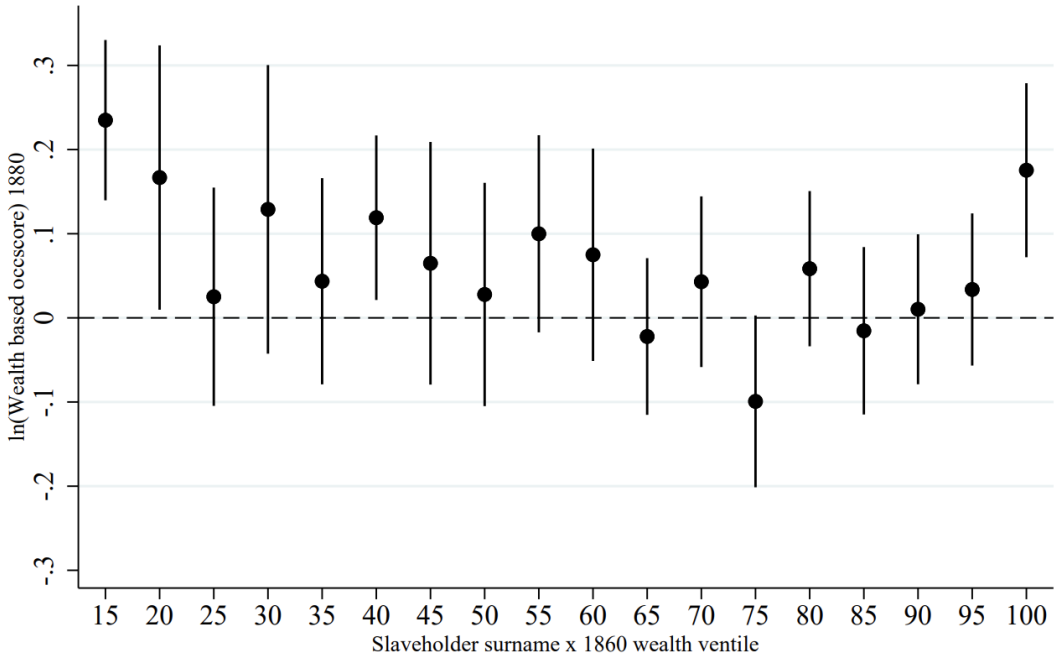
Figure 5: The effect of slaveholder surname on 1870 household wealth by the 1860 wealth distribution



Notes: This figure reports coefficients from equation (1). The outcome variable is household wealth in 1870. The displayed coefficients and their corresponding confidence intervals are for the interaction between slaveholder surname and ventile of the 1860 wealth distribution. The differential probability of being a slaveholder between slaveholder and non-slaveholder surnames appears at around the 60th percentile and increases at the 80th percentile (see Figure 1).

Slaveholders After the War

Figure 6: The effect of slaveholder surname on 1880 household wealth by the 1860 wealth distribution

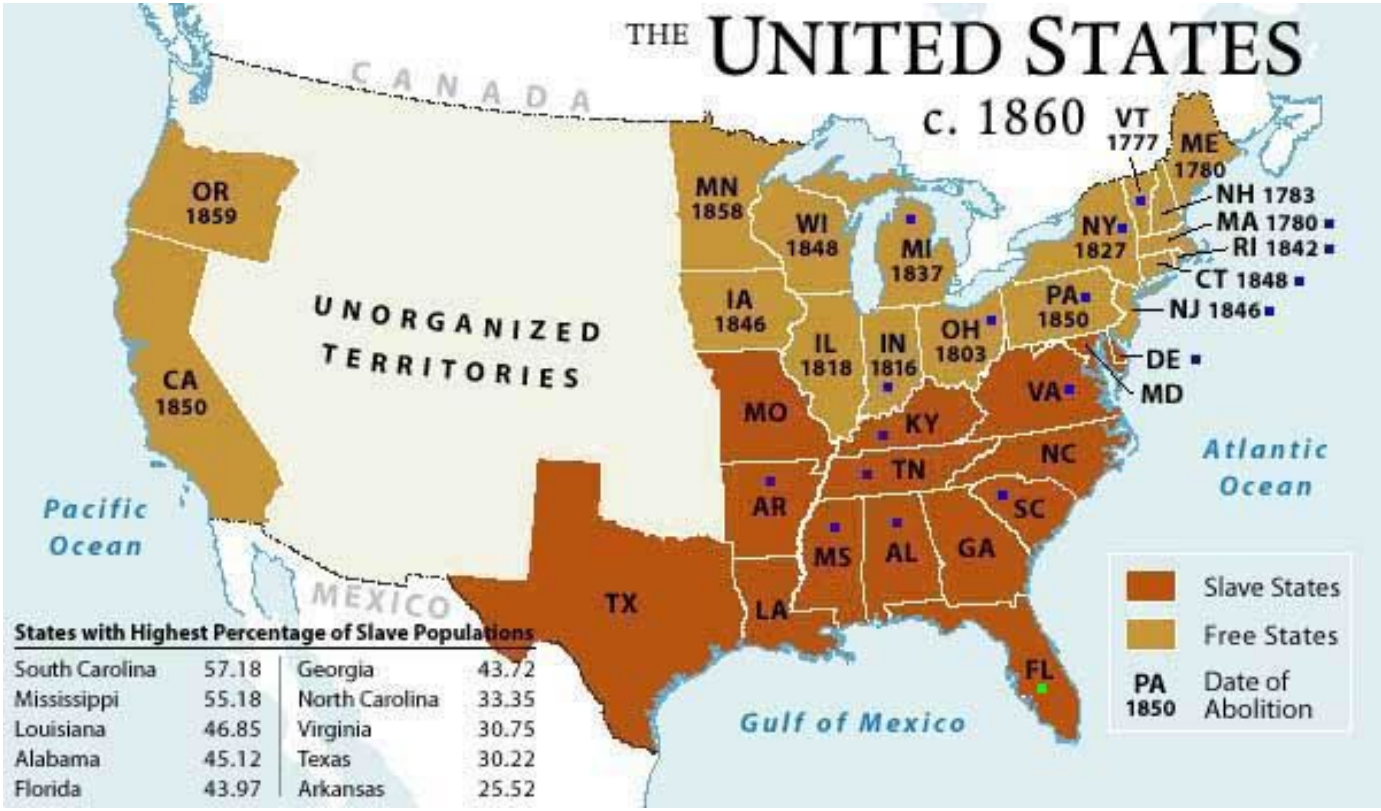


Notes: This figure reports coefficients from equation (1). The outcome variable is son's occupation-based wealth in 1880. The displayed coefficients and their corresponding confidence intervals are for the interaction between slaveholder surname and ventile of the 1860 wealth distribution.

The Postwar Southern Elite

- So wealth inequality may still have been large in South after the war
- However, the Civil War did create a fair amount of churn in terms of who the elites were, at least temporarily
- Clearly, the Civil War was also going to have a huge impact on black outcomes as well
- To think about the mobility rates and inequality faced by the black population after the Civil War, we'll start with Sacerdote (2005)

Slavery and Black Mobility



Slavery and Black Mobility

- Sacerdote is going to use parent's (and grandparent's) birth state and year to determine slave status
- Basically, he is constructing an indicator for whether the mother was born in the south (S_i)
- The basic idea is to compare the outcomes of children of slaves to those of children of free blacks using the following three approaches:

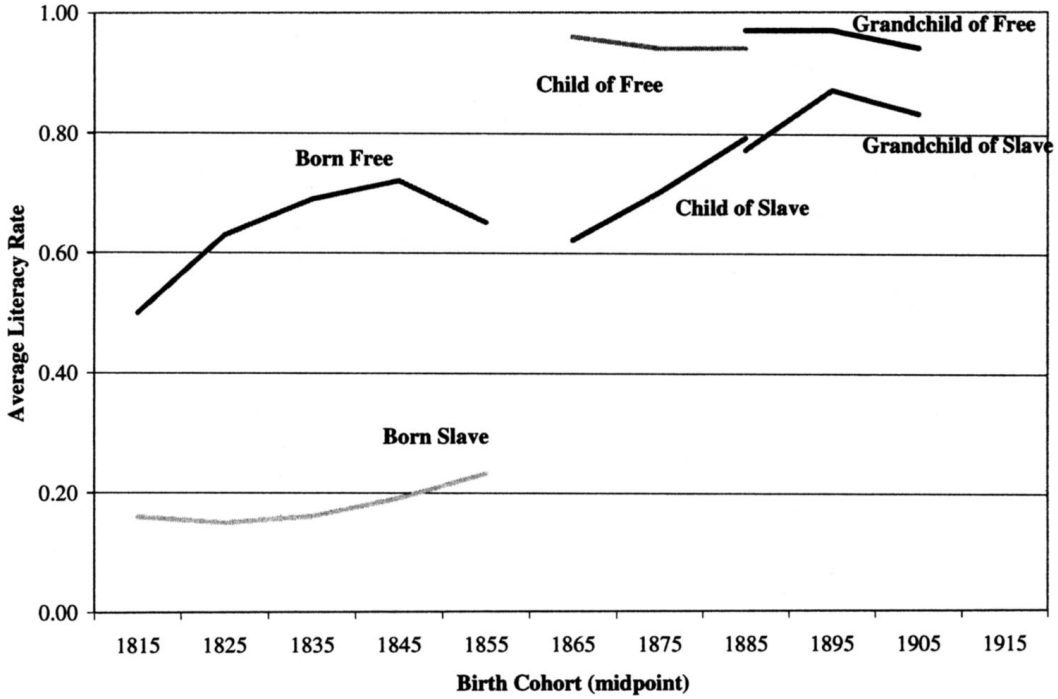
$$Y_i = \alpha + \beta S_i \tag{1}$$

$$Y_i = \alpha + \beta S_i + \theta_{\text{region}} \tag{2}$$

$$Y_i = \alpha + \beta_0 Black_i + \beta_1 Black_i \cdot S_i + \beta_2 S_i + \theta_{\text{region}} \tag{3}$$

Slavery and Black Mobility

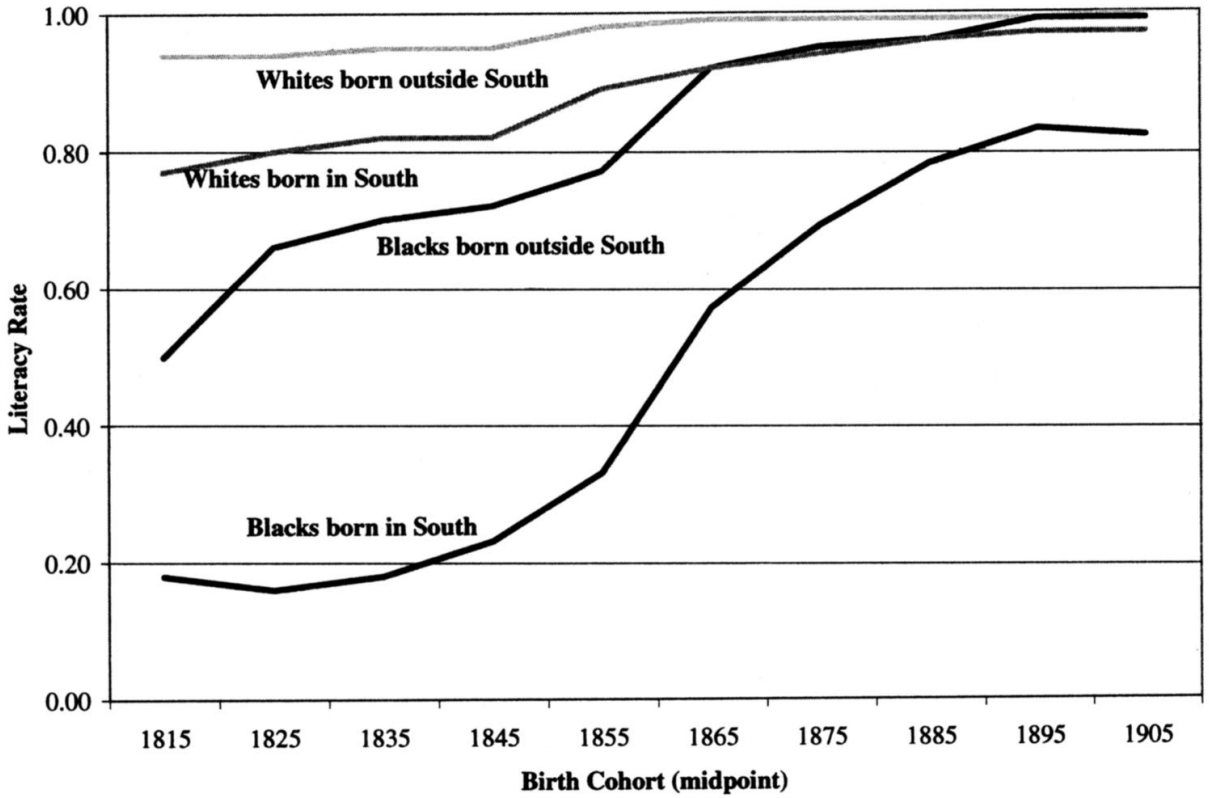
FIGURE 3.—LITERACY RATES BY BIRTH COHORT FOR FREE BLACKS AND SLAVES AND THEIR CHILDREN AND GRANDCHILDREN



This figure is intended to show the literacy gap between free and slave blacks before 1865 and how that gap eroded over time and across two generations. Means are taken by generation, by 10-year cohort. *Notes:* Data are from 1880 and 1920 Census IPUMS. Slave status of self, mothers, and grandmothers is imputed from birth year and place of birth. Mother and mother's mother are used to assign slave status of parents or grandparents. Literacy rates in the first generation are calculated from the 1880 data, and the next two generations are taken from the 1920 data. Data from cohorts from 1865 on are taken from the 1920 Census. This switch partially explains the jumps in the graphs. Literacy is measured for persons aged 10 or older.

Slavery and Black Mobility

FIGURE 4.—LITERACY RATES BY BIRTH COHORT FOR WHITES AND BLACKS BORN INSIDE AND OUTSIDE THE SOUTH



This figure shows average literacy by birth cohort, race, and region of birth (South and non-South). Means are taken by generation, by 10-year cohort.
Notes: Data are from 1880 and 1920 Census IPUMS. Data from cohorts from 1865 on are taken from the 1920 Census. Literacy is measured for persons aged 10 or older.

Slavery and Black Mobility

TABLE 2.—EFFECT OF OWN SLAVE STATUS AND MOTHER'S OR GRANDMOTHER'S SLAVE STATUS ON LITERACY

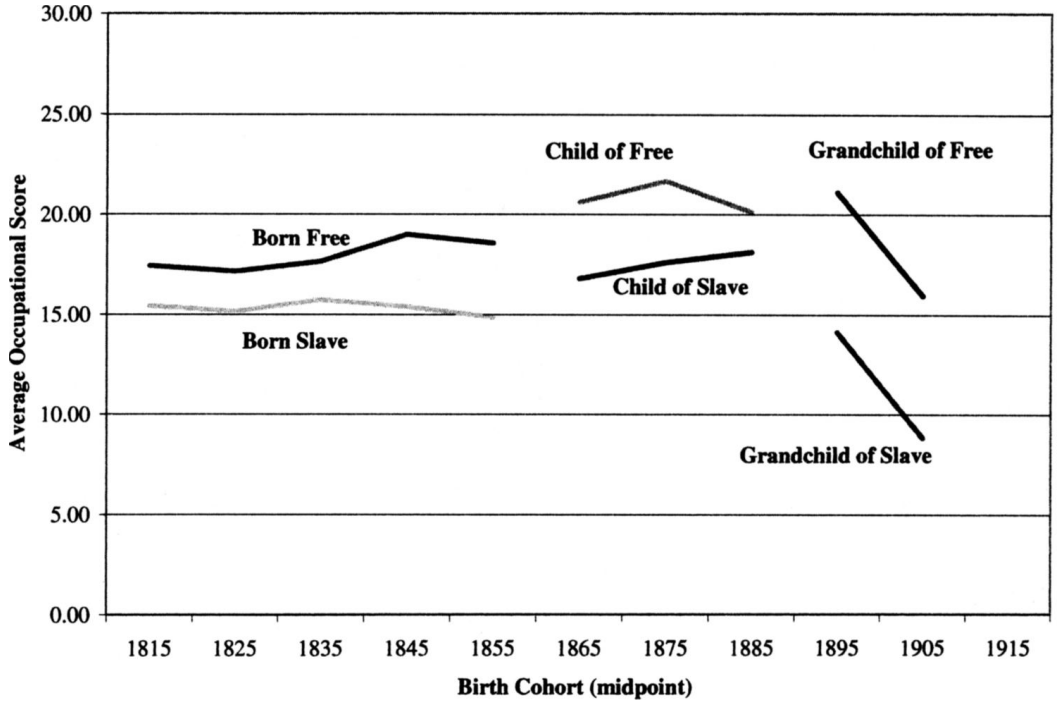
Effect of	(1) No Controls (Raw Difference between Slaves and Free Blacks)	(2) Using Movers (Controls for Region and Year of Birth)	(3) Using Whites to Estimate Effect of "Born South"	(4) Mean Literacy for Slaves and Their Progeny (S.D.)	(5) *N* (Slaves, Free Blacks, Whites)
Own slavery status (householders in 1880):					
All female HH or spouses of HH	−.466	−.259	−.302	.193	8,622
	(.023)	(.030)	(.019)	(.395)	317
					48,745
All male HH	−.466	−.207	−.334	.237	7,352
	(.028)	(.035)	(.021)	(.425)	232
					43,520
Mother's slavery status (children in 1880)	−.548	−.100	−.290	.339	7,237
	(.028)	(.037)	(.027)	(.474)	205
					34,752
Mother's slavery status (children in 1880)[a]	−.584	−.082	−.299	.337	7,189
	(.027)	(.042)	(.028)	(.473)	140
					29,447
Mother's slavery status (householders in 1920)	−.275	−.099	−.187	.656	13,694
	(.013)	(.015)	(.014)	(.475)	495
					98,495
Grandmother's slavery status (children in 1920)	−.155	−.030	−.131	.831	13,509
	(.010)	(.011)	(.010)	(.375)	276
					84,727
Grandmother's slavery status (children in 1920)[a]	−.163	−.031	−.140	.837	9,137
	(.006)	(.017)	(.008)	(.370)	59
					47,031

[a] Families without intermarriage between slaves and free.

This table shows OLS estimates of the effect of being born into slavery (or having an ancestor born into slavery) on literacy. Column (1) shows the raw difference in literacy between slaves (and their progeny) and free blacks (and their progeny). Column (2) estimates the difference in literacy between the two groups within the current region. This estimate is identified from slave families that move out of the South and free families that move into the South, where South is defined as the former slave states. Column (3) adds the white population to the sample and estimates the effect of slavery as the interaction effect of being black and born in the South, over and above the effect of being born in the South for whites. Column (4) shows means and standard deviations of the dependent variable for the slaves and their progeny, and column (5) shows sample sizes for slaves (or progeny), free blacks (or progeny), and whites. The samples are from the 1880 and 1920 Censuses.

Slavery and Black Mobility

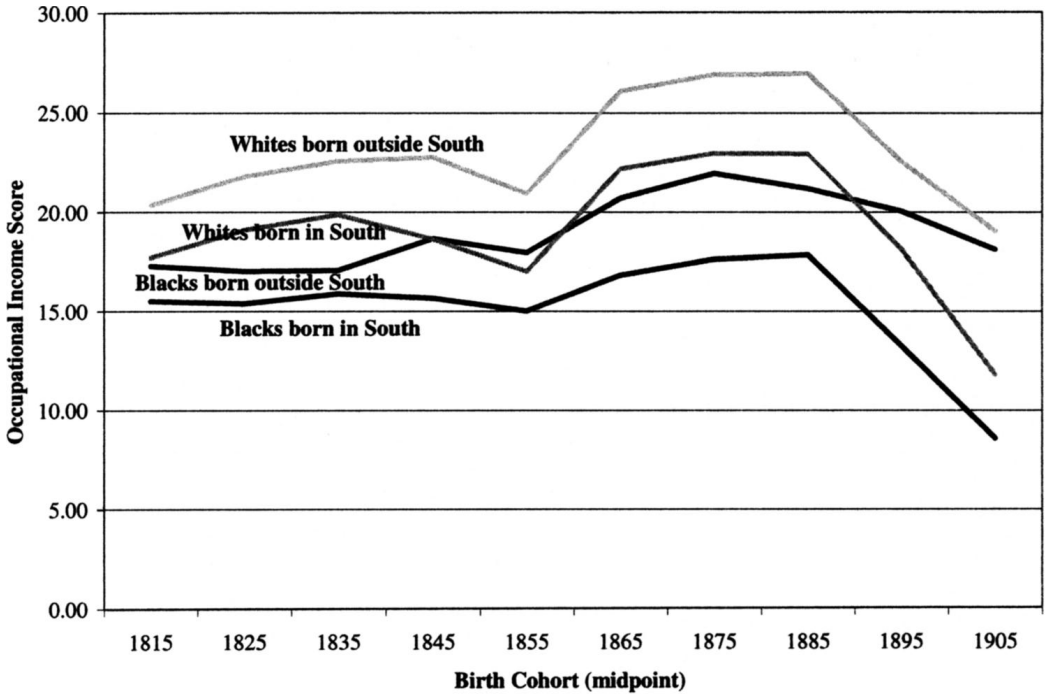
FIGURE 5.—OCCUPATIONAL INCOME SCORES FOR FORMER SLAVES AND FREE BLACKS AND THEIR CHILDREN AND GRANDCHILDREN



This figure shows average occupational income scores by birth cohort for free black men and former male slaves and their sons and grandsons. The occupational income score is calculated by IPUMS as the median annual income by occupation in 1950 and is reported in hundreds of 1950 dollars. Data for the later two generations come from the 1920 Census. The 1895 and 1905 cohorts have lower scores primarily because younger people are more likely to work in lower-wage occupations.

Slavery and Black Mobility

FIGURE 6.—OCCUPATIONAL SCORES FOR WHITES AND BLACKS BY BIRTH COHORT AND BORN IN SOUTH



The figure shows average occupational score by birth cohort, race, and born in South. The occupational income score is calculated by IPUMS as the median annual income by occupation in 1950 and is reported in hundreds of 1950 dollars. Data for the later two generations come from the 1920 Census. The 1895 and 1905 cohorts have lower scores primarily because younger people are more likely to work in lower-wage occupations.

Slavery and Black Mobility

TABLE 4.—EFFECT OF SELF OR MOTHER BORN SLAVE ON OCCUPATIONAL INCOME SCORE AND PROBABILITY OF BEING A MANUAL LABORER (MALE HOUSEHOLD HEADS IN 1880 AND 1920)

Effect of	(1) No Controls (Raw Difference between Slaves and Free Blacks)	(2) Using Movers (Controls for Region and Year of Birth)	(3) Using Whites to Estimate Effect of "Born South"	(4) Mean Outcome for Slaves and Their Progeny (S.D.)	(5) *N* [Slaves, Free Blacks, Whites]
Own slavery status on income score	−2.867	.133	1.062	15.300	7,218
(male householders in 1880 IPUMS)	(.361)	(.447)	(.705)	(5.316)	227
					42,507
Own slavery status on income score		.566		17.954	2,170
(male householders in 1880, 100% New England)		(.191)		(6.537)	2,982
Own slavery status on income score		−.497		15.967	1,709
(male householders in 1880, 100% New York)		(.217)		(6.984)	2,616
Father's slavery status on income score	−4.46	−.768	−0.385	17.119	5,936
(male householders in 1920, IPUMS)	(.509)	(.619)	(0.731)	(6.517)	172
					43,960
Own slavery status on manual status	0.154)	0.028	0.072	0.973	7,200
(male householders in 1880, IPUMS)	(0.012)	(0.015)	(0.023)	(.164)	226
					41,776
Own slavery status on manual status		.003		.961	2,050
(male householders in 1880, 100% New England)		(.006)		(.193)	2,742
Own slavery status on manual status		−.013		.952	1,670
(male householders in 1880, 100% New York)		(.006)		(.214)	2,605
Father's slavery status on manual status	.156	.063	0.074	.931	5,896
(male householders in 1920, IPUMS)	(.021)	(.034)	(0.027)	(.253)	172
					43,505

This table compares occupational outcomes for black male heads of household who were former slaves (or whose mothers were former slaves) with outcomes for black male heads of household born free (or with mothers born free). "Effects" of slave status are calculated by using an OLS regression of the outcomes on former slave status.

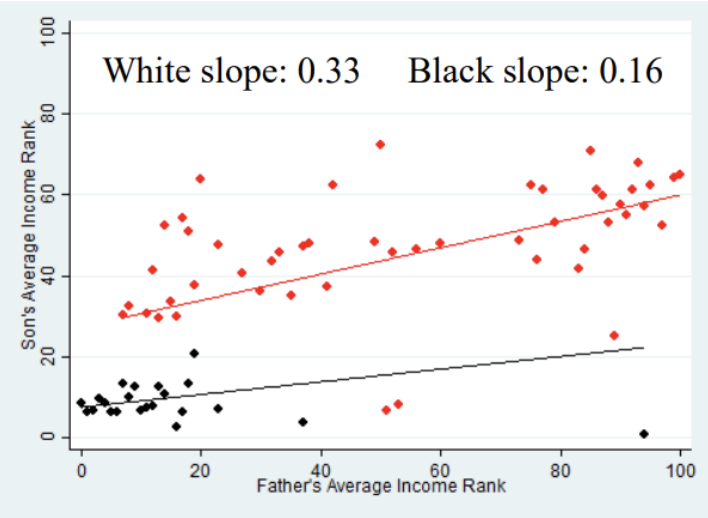
Notes: Samples include all black male heads of household. In the 1920 sample, the householders are aged 35–55 in 1920 (that is, born 1865–1885), which makes them old enough to have parents who were born as slaves, but young enough to be born after 1865. In the 1880 sample, the householders are all born before 1865.

Former slave status is imputed from year and state of birth. Those blacks born in one of the 16 slave states prior to 1865 are coded as former slaves. (The count of 16 states includes West Virginia.) For the 1920 data, if the householder's mother was born in one of 16 slave states, the mothers are coded as former slaves. Four regional dummies are coded so that the South dummy is really a slave-states dummy. Missouri is coded as South, and Washington, DC, is not.

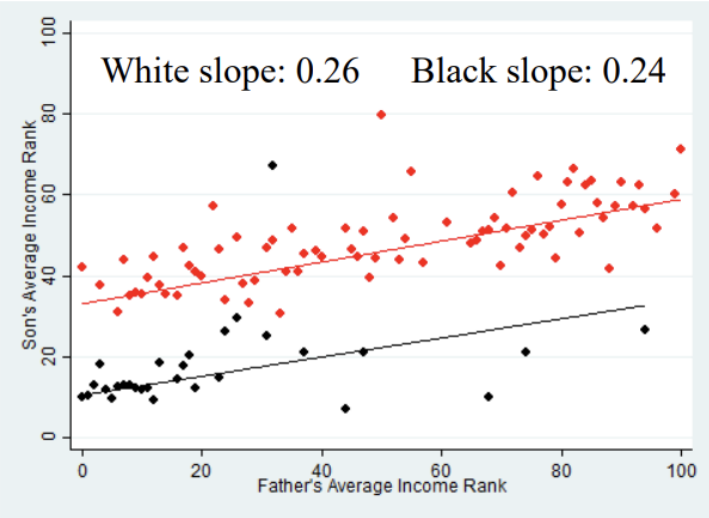
The occupational income score is the median 1950 annual income in hundreds of dollars for a given occupation. Manual versus nonmanual status is designated by the author based on job title.

Black Mobility Since Emancipation

PANEL A: 1900 COHORT

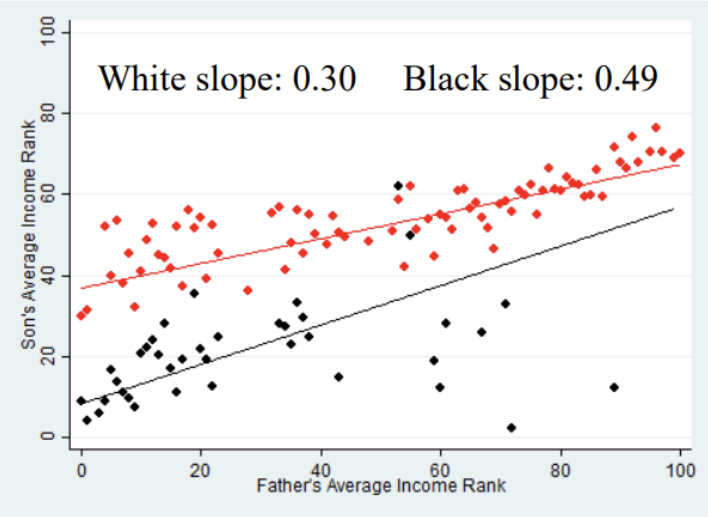


PANEL B: 1930 COHORT

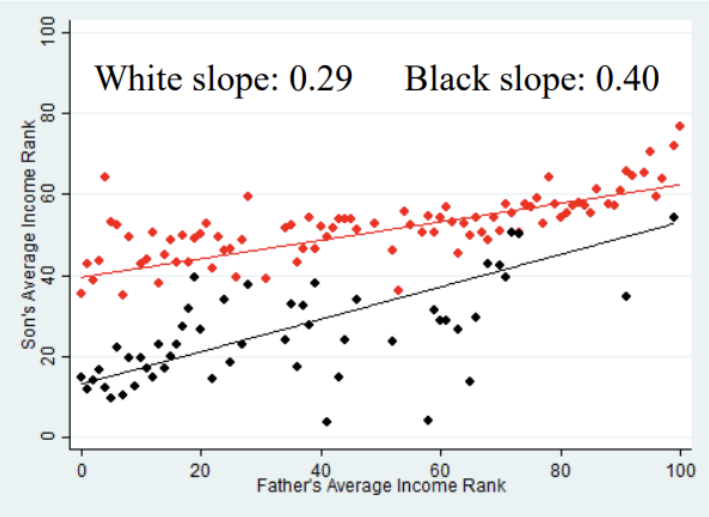


Black Mobility Since Emancipation

PANEL C: 1962 COHORT

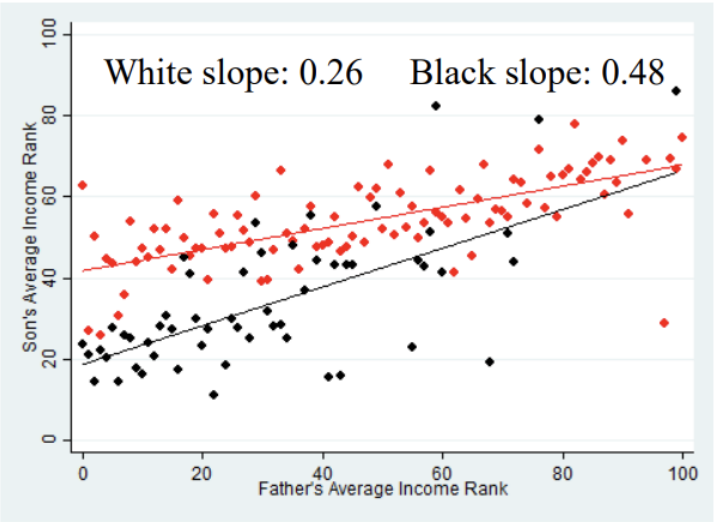


PANEL D: 1973 COHORT

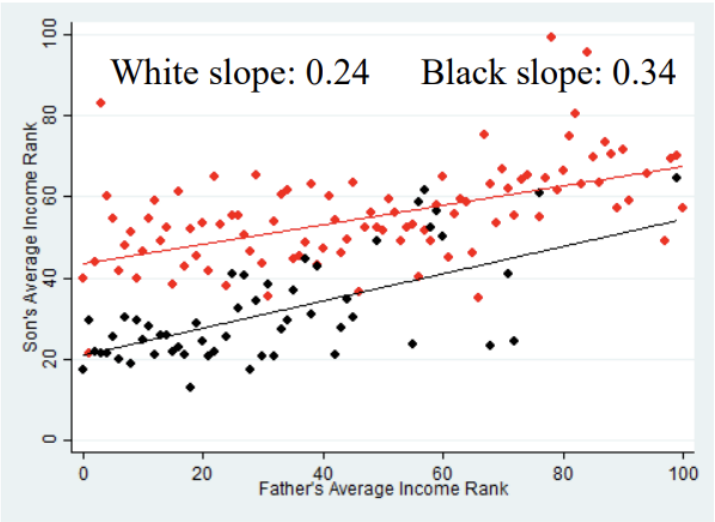


Black Mobility Since Emancipation

PANEL E: 1990 COHORT



PANEL F: 2000 COHORT

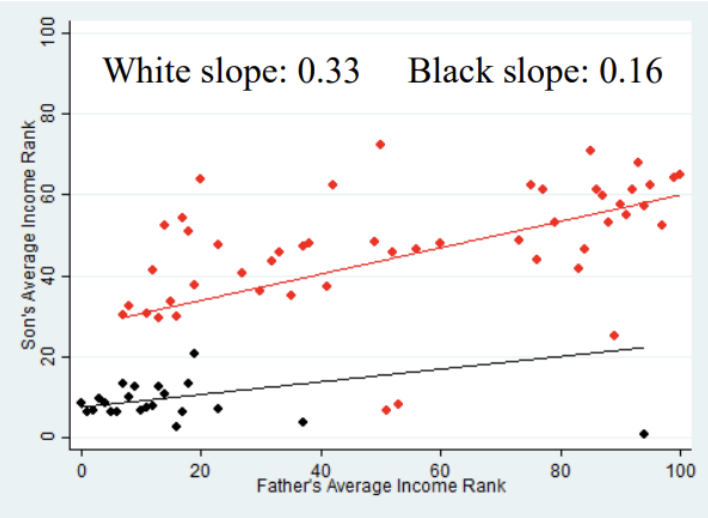


Announcements

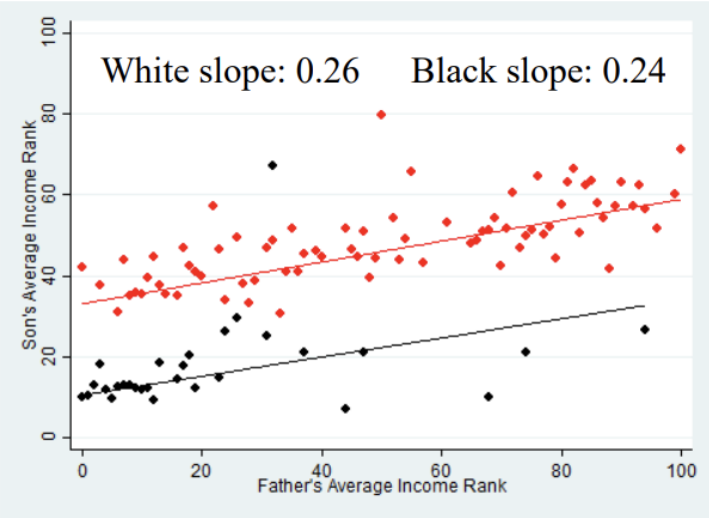
- Research projects!!
- For next week and after classes end, I'm happy to schedule individual times to meet
- Next Friday, we'll use the class period as a work session for your projects, I can show you things on Stata, help with data, etc.

Black Mobility Since Emancipation

PANEL A: 1900 COHORT

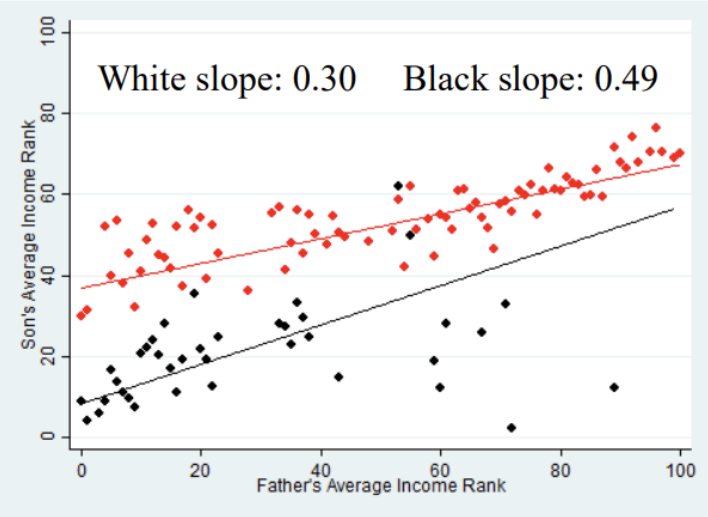


PANEL B: 1930 COHORT

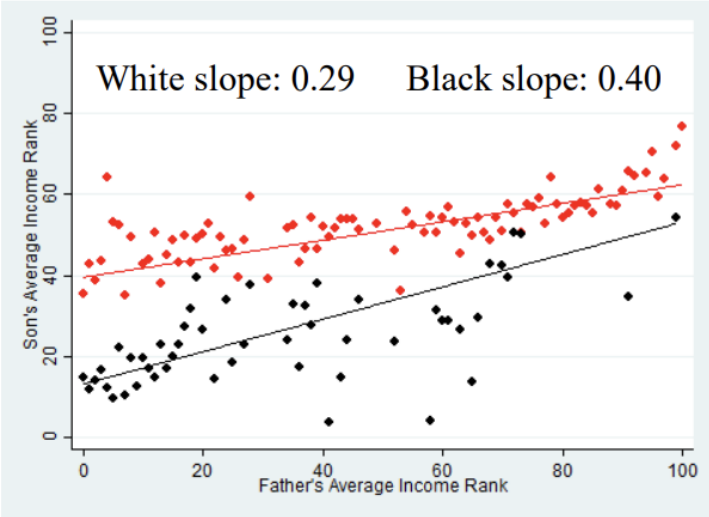


Black Mobility Since Emancipation

PANEL C: 1962 COHORT

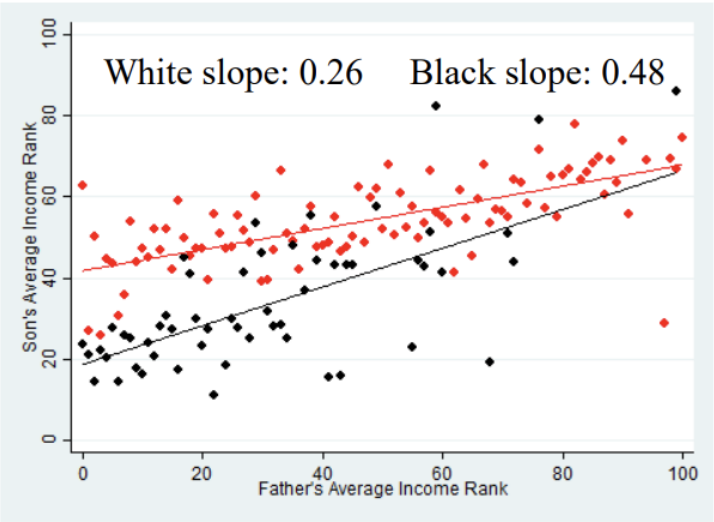


PANEL D: 1973 COHORT

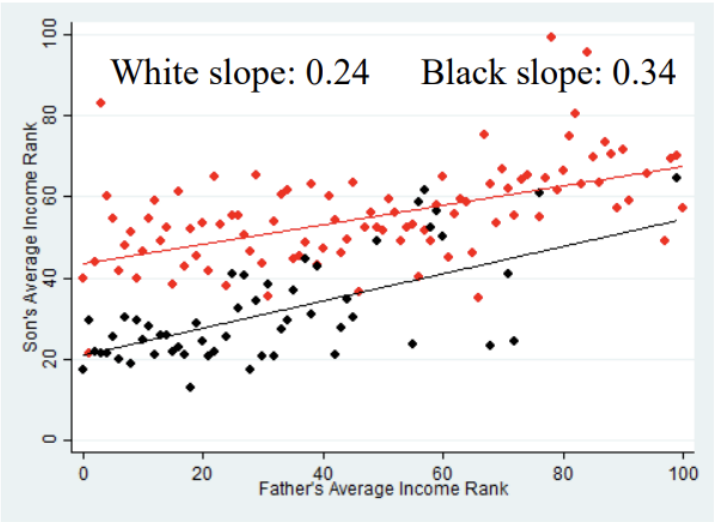


Black Mobility Since Emancipation

PANEL E: 1990 COHORT



PANEL F: 2000 COHORT



Institutions and Inequality Emerging from the Civil War

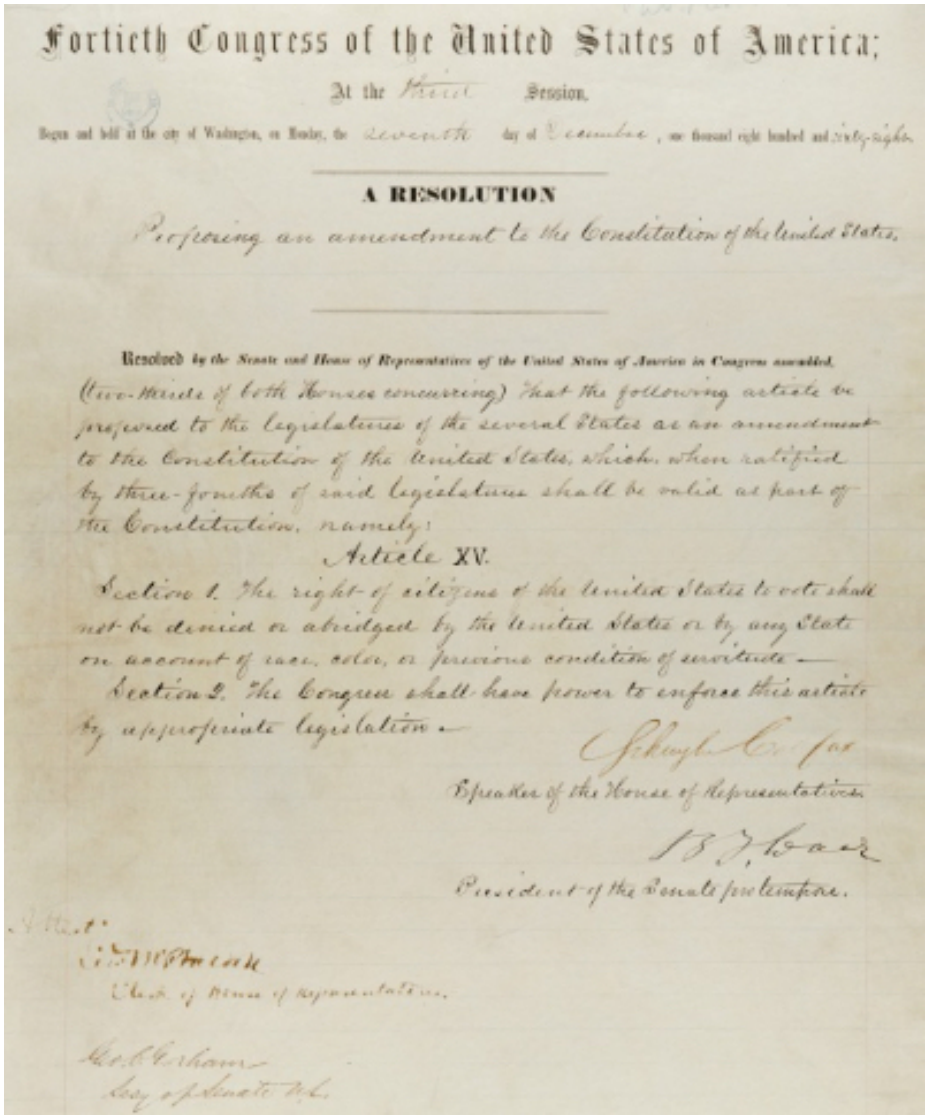
Laborers under convict leasing provisions of Black Codes

Institutions and Inequality Emerging from the Civil War

Institutions and Inequality Emerging from the Civil War

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, Section 1 (1868)

Institutions and Inequality Emerging from the Civil War



Fortieth Congress of the United States of America;

At the First Session,

Begun and held at the city of Washington, on Monday, the Seventh day of December, one thousand eight hundred and sixty-eight.

A RESOLUTION

Proposing an amendment to the Constitution of the United States.

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled,
(two-thirds of both Houses concurring) That the following article be proposed to the legislatures of the several States as an amendment to the Constitution of the United States, which, when ratified by three-fourths of said legislatures shall be valid as part of the Constitution, namely:

Article XV.

Section 1. The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of race, color, or previous condition of servitude —

Section 2. The Congress shall have power to enforce this article by appropriate legislation —

Schuyler Colfax
Speaker of the House of Representatives

B. F. Wade
President of the Senate pro tempore.

Attest:
J. W. Forney
Clerk of House of Representatives.

Geo. C. Gorham
Secy of Senate U.S.

Institutions and Inequality Emerging from the Civil War

Section 1. The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of race, color, or previous condition of servitude. – Fifteenth Amendment, Section 1 (1870)

Reconstruction

- Reconstruction is a fascinating period
- The enfranchisement of black individuals created the potential for new legislation aimed at promoting greater equality of opportunity
- To see this in action, let's look at a working paper by Logan, "Do Black Politicians Matter?"
- Logan is going to see how black politicians impacted local taxation and public spending patterns
- These are the key levers for promoting equality of opportunity through government actions

Reconstruction

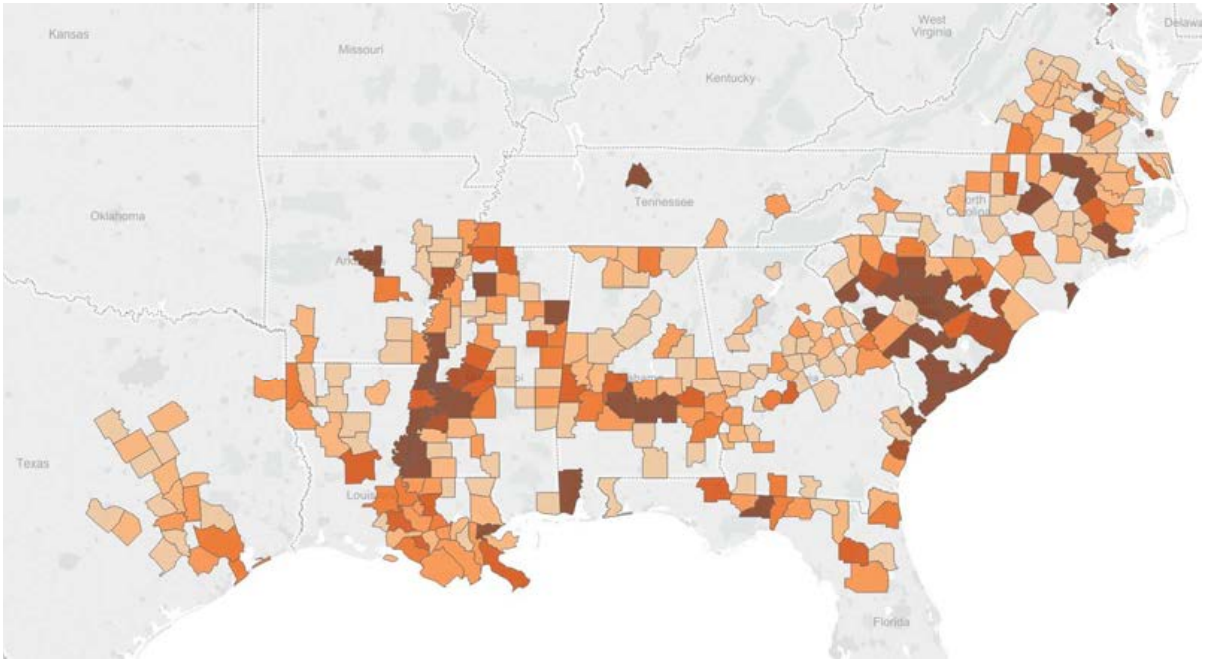


Figure 1: Spatial Distribution of Black Officials During Reconstruction. Source: Foner (1996)

Reconstruction

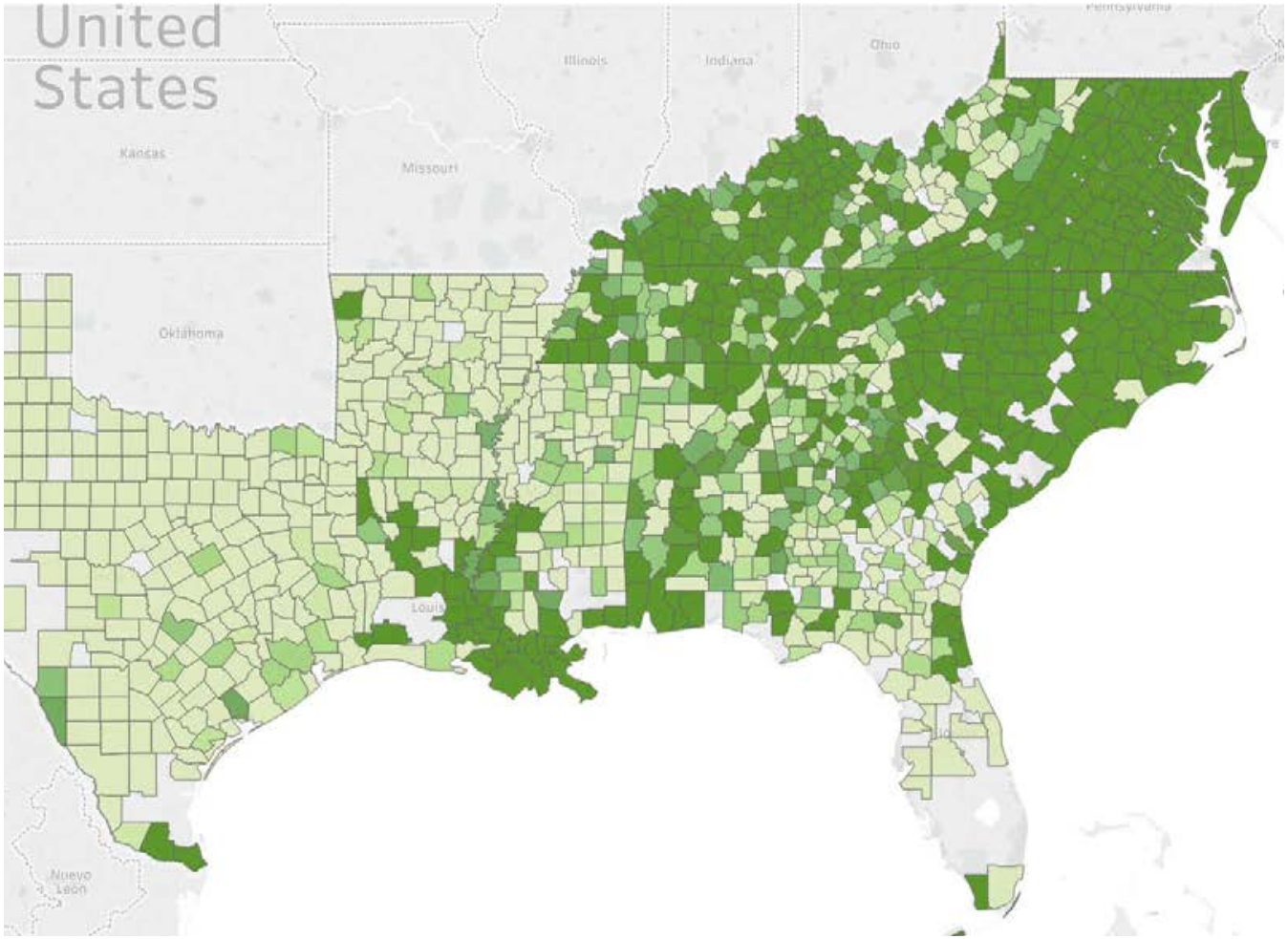


Figure A1: Number of Free Blacks by County, 1860.

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.

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	

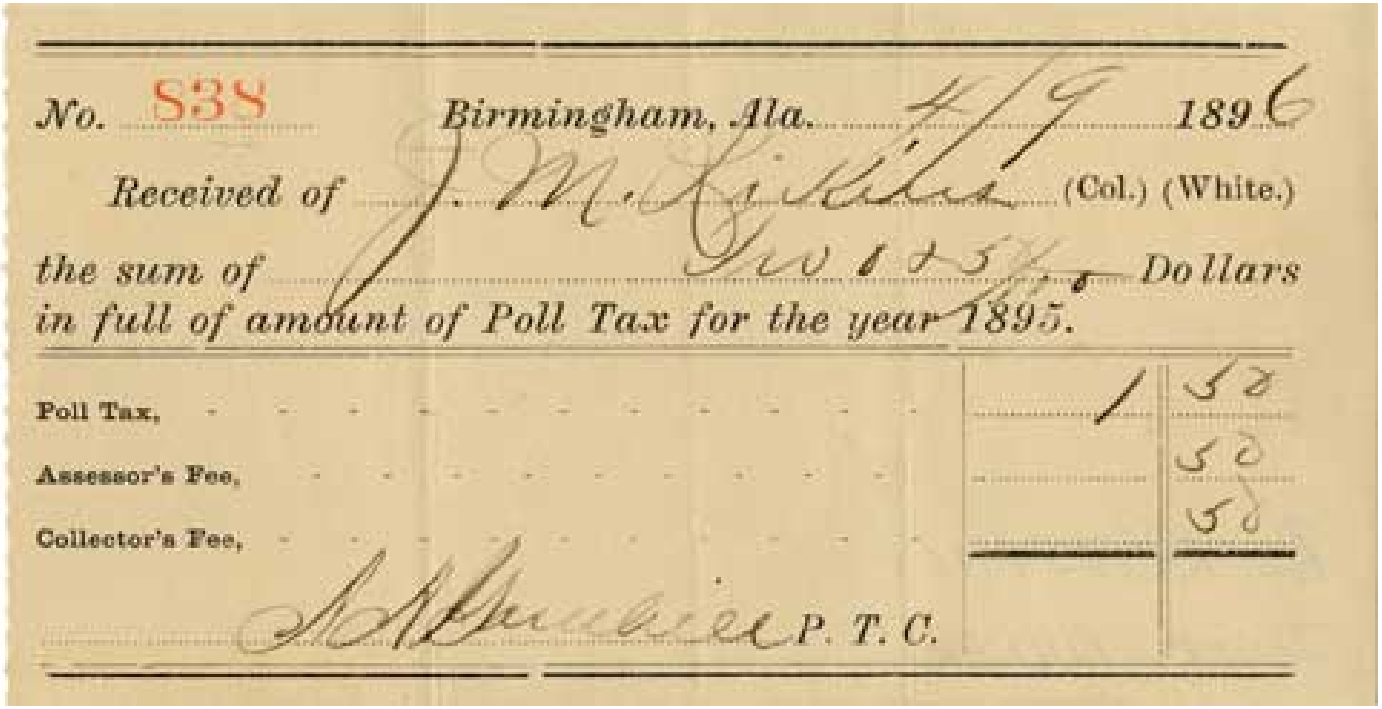
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Note: N=825 in all regressions. Regressions include Republican vote share in 1868 Presidential Election, total value of farms, Logan-Parman Segregation, Total population, percent black, manufacturing wages, value of manufacturing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

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

From Reconstruction to Jim Crow



No. 838 Birmingham, Ala. [illegible] 189 6

Received of J. M. Gilliland (Col.) (White.)

the sum of [illegible] Dollars

in full of amount of Poll Tax for the year 1895.

Poll Tax,	1	50
Assessor's Fee,		50
Collector's Fee,		50

[illegible] P. T. C.

From Reconstruction to Jim Crow

Plessy v. Ferguson, 1896

From Reconstruction to Jim Crow

The white race deems itself to be the dominant race in this country. And so it is in prestige, in achievements, in education, in wealth and in power. So, I doubt not, it will continue to be for all time if it remains true to its great heritage and holds fast to the principles of constitutional liberty. But in view of the constitution, in the eye of the law, there is in this country no superior, dominant, ruling class of citizens. There is no caste here. Our constitution is color-blind, and neither knows nor tolerates classes among citizens...

From Reconstruction to Jim Crow

...In respect of civil rights, all citizens are equal before the law. The humblest is the peer of the most powerful. The law regards man as man, and takes no account of his surroundings or of his color when his civil rights as guaranteed by the supreme law of the land are involved. It is therefore to be regretted that this high tribunal, the final expositor of the fundamental law of the land, has reached the conclusion that it is competent for a state to regulate the enjoyment by citizens of their civil rights solely upon the basis of race. – Justice John Marshall Harlan's dissent, Plessy v. Ferguson (1896)

Schooling Under Separate but Equal

- With the rise of Jim Crow laws, we get the disenfranchisement of black individuals
- With the Plessy v. Ferguson ruling, we have the official sanctioning of a 'separate but equal' doctrine
- As you likely suspect, separate but equal was often separate but unequal in practice
- For an interesting take on this, let's look at a working paper by Baker, "Finding the Fat: The Relative Impact of Budget Fluctuations on African-American Schools"

Schooling Under Separate but Equal

Table 2: Mean County-Level School Expenditures by Race

1912						
	Black		White		Difference	
Enrollment	1334	[994]	1842	[1176]	-508	(145)
Enrollment rate (%)	62	[15]	81	[12]	-18	(2)
Teachers' salaries per pupil (¢)	232	[134]	802	[374]	-569	(37)
Capital expenditures per pupil(¢)	6	[11]	108	[159]	-102	(15)
Total expenditures per pupil (¢)	239	[137]	910	[476]	-672	(47)
Number of counties	113		113			
1917						
	Black		White		Difference	
Enrollment	1622	[1152]	2153	[1235]	-531	(157)
Enrollment rate (%)	76	[16]	86	[10]	-10	(2)
Teachers' salaries per pupil (¢)	204	[96]	828	[461]	-624	(44)
Capital expenditures per pupil (¢)	11	[27]	91	[136]	-80	(13)
Total expenditures per pupil (¢)	215	[107]	920	[546]	-704	(52)
Number of counties	115		115			
1922						
	Black		White		Difference	
Enrollment	1518	[1071]	2412	[1544]	-894	(167)
Enrollment rate (%)	78	[17]	90	[9]	-12	(2)
Teachers' salaries per pupil (¢)	385	[208]	1469	[673]	-1083	(63)
Capital expenditures per pupil (¢)	25	[57]	451	[1110]	-426	(99)
Total expenditures per pupil (¢)	410	[224]	1920	[1284]	-1509	(116)
Number of counties	127		127			

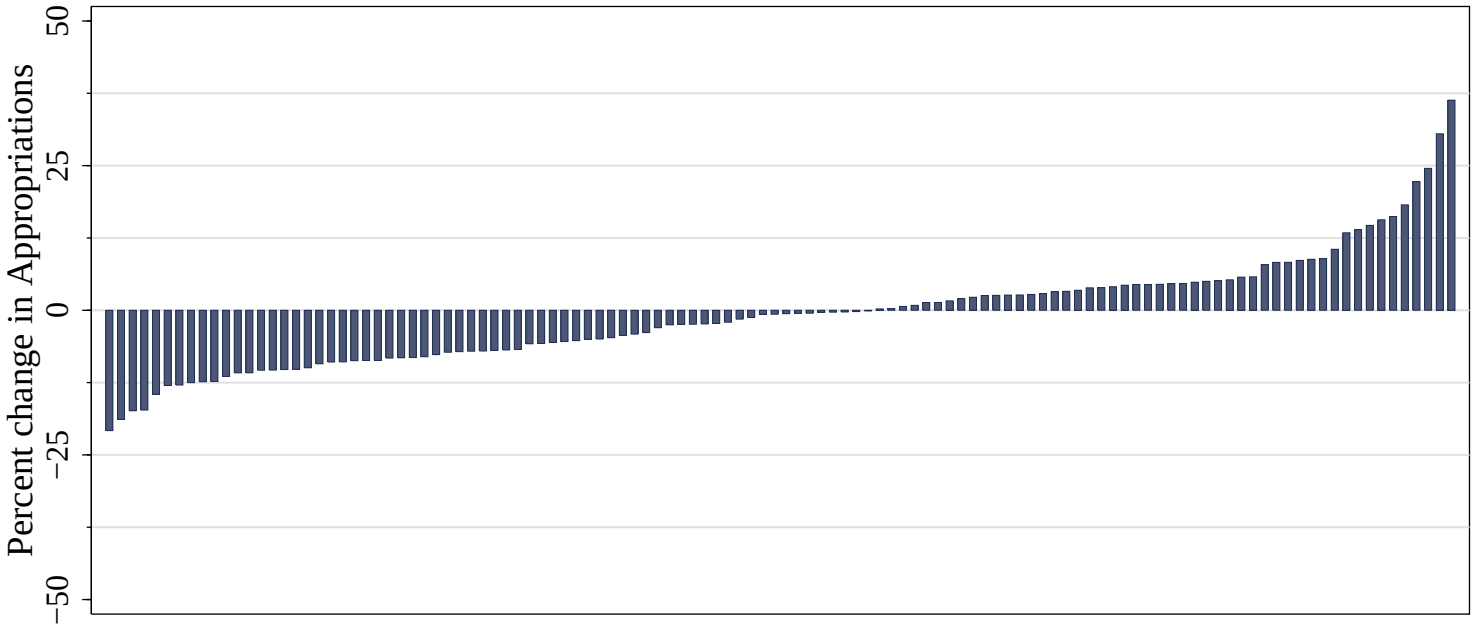
Notes: The columns labeled "Black" and "White" report means for the respective race with standard deviations in brackets. The column labeled "Differences" reports differences in means estimated from regressions and presents standard errors in parentheses. All monetary figures are in nominal cents.

Schooling Under Separate but Equal

- Basic summary statistics reveal vast differences in spending on black versus white pupils
- Baker wants to explore what motivated school boards to maintain this inequality (or what kept them from spending absolutely nothing on black schools)
- The problem is that school funds are a rather endogenous thing
- Baker is going to exploit Georgia's reapportionment of school funds as an exogenous shock to school budgets

Schooling Under Separate but Equal

Figure 3: Percent Change in County-Level Appropriations around Census Years



(a) 1912 to 1914

Schooling Under Separate but Equal

Table 5: Estimates of the Effect of Budget Shocks on School Revenues, 1912–1914

	(1) $\Delta Receipts\ PP$	(2) $\Delta State\ PP$	(3) $\Delta Local\ Tax\ PP$	(4) $\Delta Tuition\ PP$
$\Delta Approp\ PP_t$	1.329***	1.045***	0.085	0.046
	(0.20)	(0.08)	(0.12)	(0.05)
$\Delta Enrollment_{t-2}$	0.030	-0.007	-0.008	-0.003
	(0.03)	(0.01)	(0.02)	(0.01)
$\Delta Local\ Tax\ PP_{t-2}$	-0.472***	-0.020	-0.483***	-0.003
	(0.11)	(0.04)	(0.06)	(0.03)
$\Delta Percent\ Black_{t-2}$	-12.363*	-1.823	-6.799	0.632
	(7.07)	(2.86)	(4.19)	(1.69)
$Constant$	58.955***	2.917	42.160***	0.932
	(21.65)	(8.76)	(12.82)	(5.17)
R-squared	0.450	0.650	0.342	0.010
Counties	118	118	118	118
Dependent Variable:				
Mean	-28.333	-56.950	17.863	-2.354
Std. Dev.	237.127	120.460	128.445	42.192

Notes: Standard errors are reported in parentheses. All monetary figures are nominal. *** p<0.01, ** p<0.05, * p<0.1.

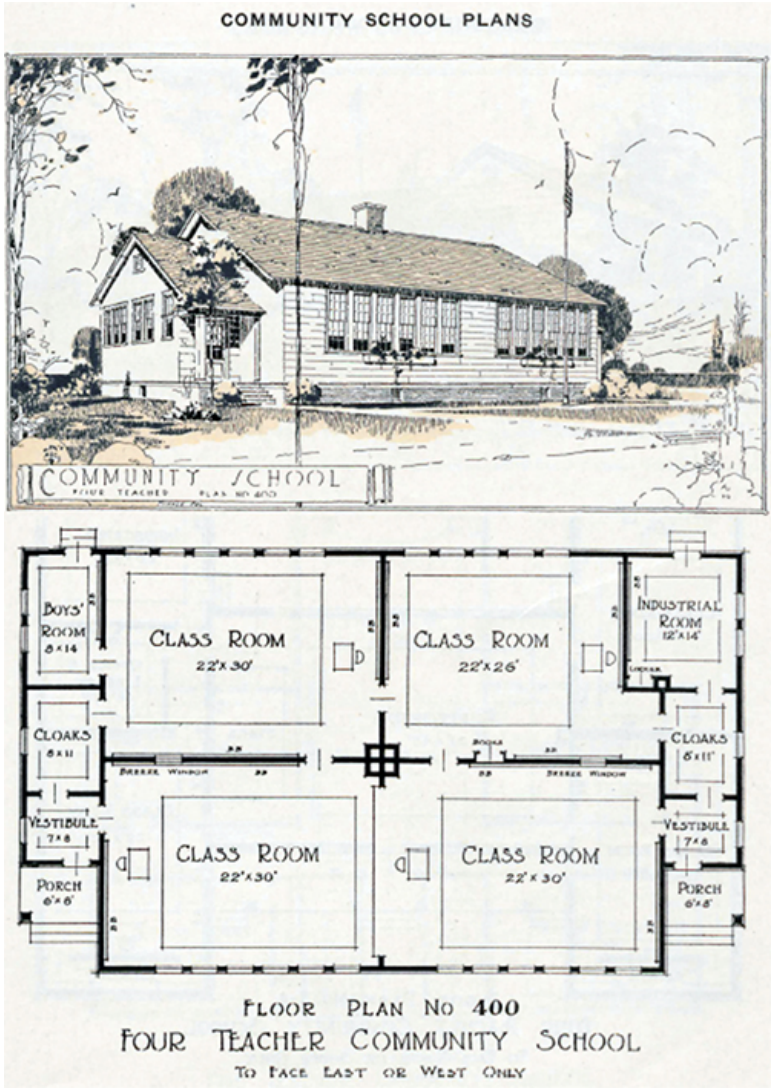
Schooling Under Separate but Equal

Table 8: The Effect of Budget Shocks on Instructional Expenditures per Pupil by Race around the Census Years of 1913, 1918, and 1923

	All			Losers			Gainers		
	(1) Black	(2) White	(3) Difference	(4) Black	(5) White	(6) Difference	(7) Black	(8) White	(9) Difference
1912 to 1914									
$\Delta Approp\ PP_t$	0.0502	1.1487***	-1.0985***	-0.0043	1.4328***	-1.4371***	0.1795	-0.3257	0.5052
	(0.082)	(0.216)	(0.218)	(0.112)	(0.269)	(0.268)	(0.156)	(0.476)	(0.489)
R-squared	0.217	0.277	0.215	0.284	0.435	0.371	0.109	0.033	0.056
Counties	113	113	113	65	65	65	48	48	48
1917 to 1919									
$\Delta Approp\ PP_t$	0.0111	1.7610***	-1.7499***	0.6236	2.5005	-1.8769	-0.0170	1.8396***	-1.8565***
	(0.159)	(0.429)	(0.446)	(0.881)	(1.580)	(1.660)	(0.171)	(0.478)	(0.493)
R-squared	0.006	0.187	0.172	0.365	0.720	0.713	0.001	0.157	0.150
Counties	115	115	115	14	14	14	101	101	101
1922 to 1924									
$\Delta Approp\ PP_t$	0.4185***	1.3642***	-0.9457**	0.4541***	1.5515***	-1.0974**	0.0685	0.6431	-0.5746
	(0.145)	(0.448)	(0.447)	(0.162)	(0.526)	(0.521)	(0.386)	(0.982)	(1.020)
R-squared	0.083	0.101	0.076	0.088	0.122	0.095	0.153	0.082	0.105
Counties	127	127	127	103	103	103	24	24	24

Notes: Standard errors are reported in parentheses. All monetary figures are nominal. "Losers" are counties whose appropriations from the state decreased following the school census of 1913, while appropriations for "Gainers" increased. All specifications include controls for lagged trends in enrollment, local tax revenues, and percentage of African-American children in the school-age population. *** p<0.01, ** p<0.05, * p<0.1.

Rosenwald Schools



Rosenwald Schools

- During the era of separate but equal, public provision of schooling was failing to provide equal opportunity for black students
- Private philanthropy stepped up to counter this public failure
- Working with Booker T. Washington, Julius Rosenwald created the Rosenwald Fund to establish high quality rural schools for black students
- These schools were funded through a system of matching grants and made a remarkable impact
- Let's look at Aaronson and Mazumder (2011) "The Impact of Rosenwald Schools on Black Achievement"

Rosenwald Schools

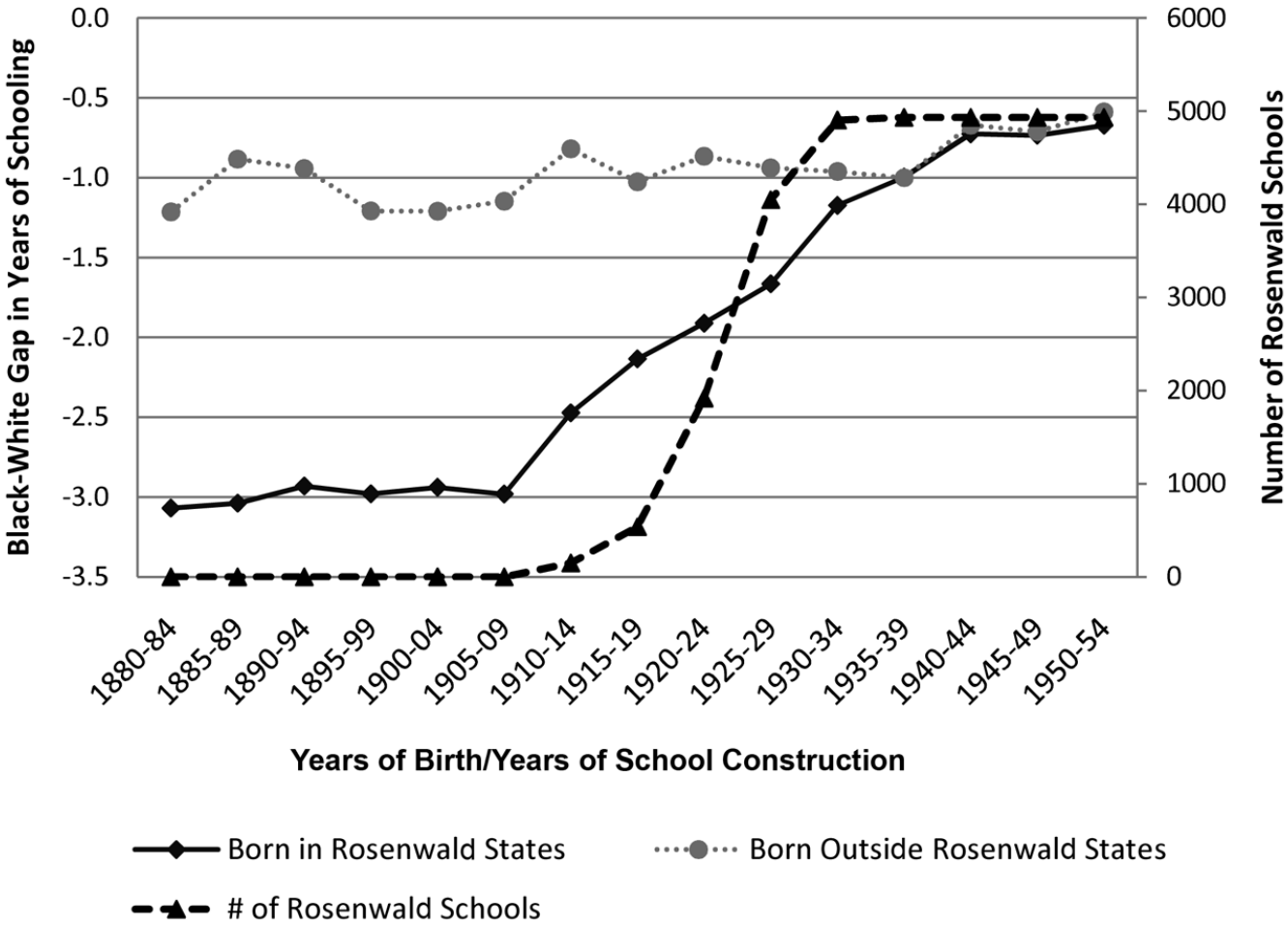
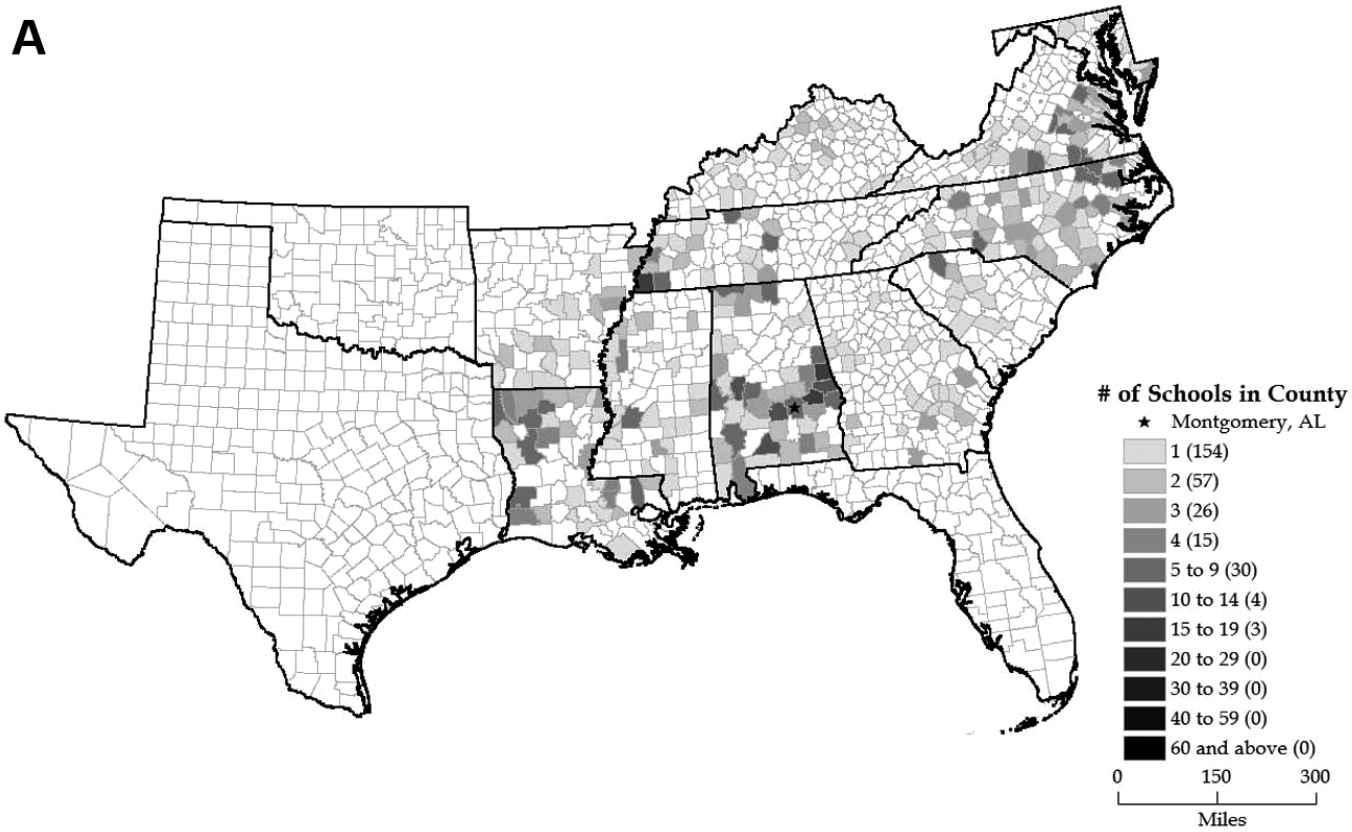


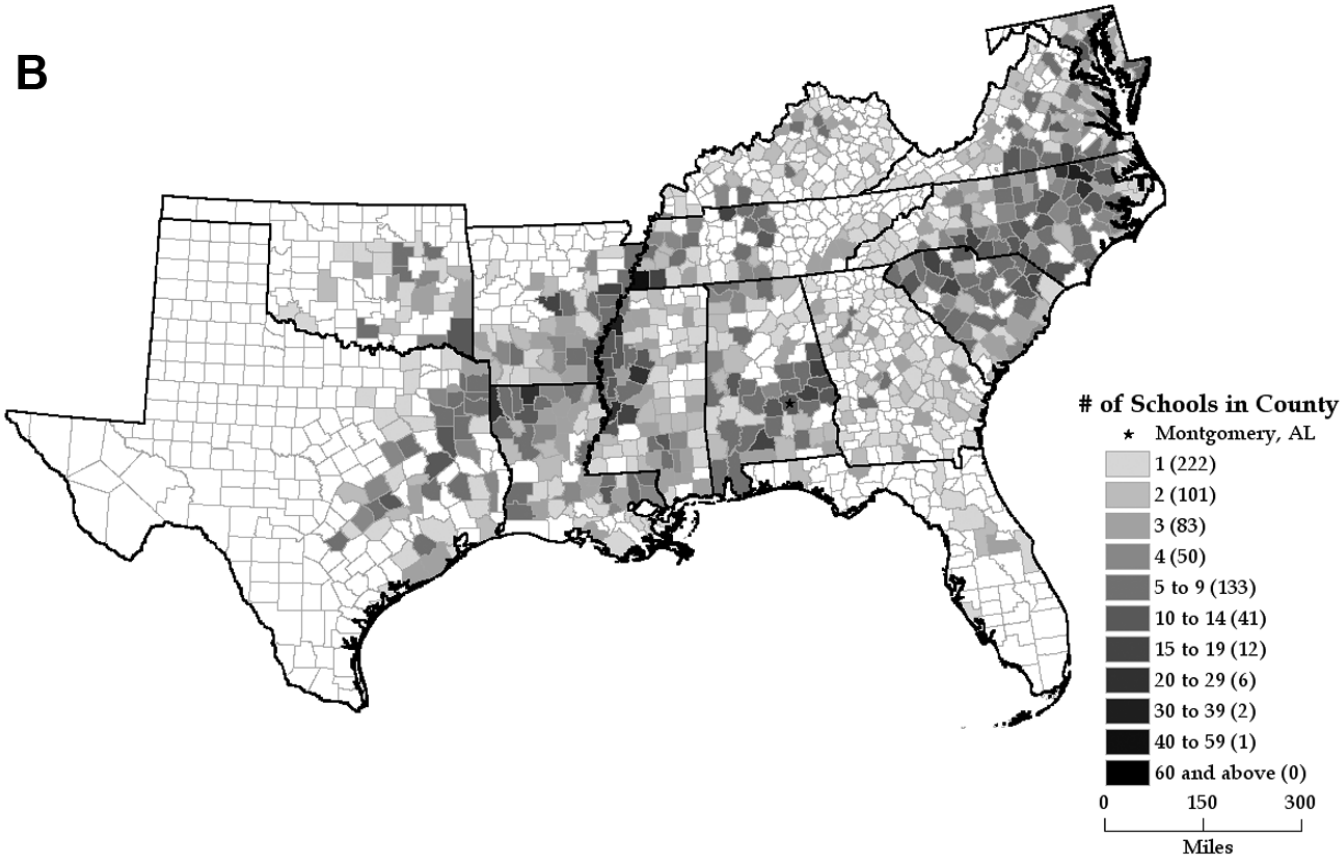
FIG. 1.—Black-white gap in education by birth cohort versus timing of Rosenwald school construction.

Rosenwald Schools



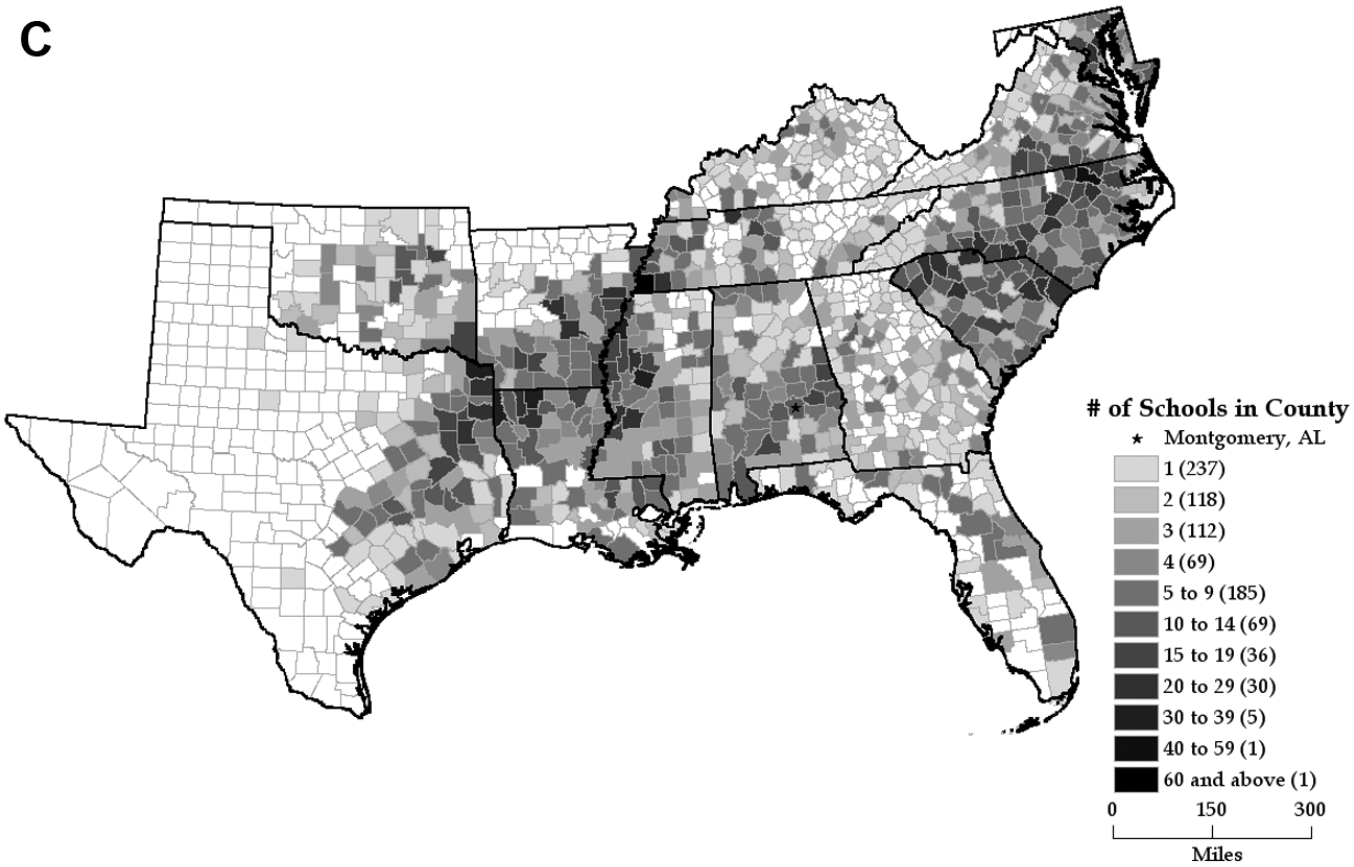
Distribution of Rosenwald Schools in 1920

Rosenwald Schools



Distribution of Rosenwald Schools in 1925

Rosenwald Schools



Distribution of Rosenwald Schools in 1932

Rosenwald Schools

- Aaronson and Mazumder are going to exploit the spatial and temporal variation in the construction of Rosenwald schools
- They are going to estimate the following equation:

$$y_{ibct} = \alpha + \text{female}_i + \text{black}_i + \text{rural}_i + \text{black}_i \cdot \text{rural}_i +$$

$$\gamma_0 ROSE_{bct} + \gamma_1(\text{black}_i \cdot ROSE_{bct}) + \gamma_2(\text{rural}_i \cdot ROSE_{bct}) +$$

$$\gamma_3(\text{black}_i \cdot \text{rural}_i \cdot ROSE_{bct}) + \beta X_{ibct} + \theta_{st}\text{age}_i + \text{year}_t +$$

$$\text{county}_c + \varepsilon_{ibct}$$

- y_{ibct} is school attendance for individual i born in year b living in county c in census year t

Rosenwald Schools

TABLE 1
School Attendance Effects of Rosenwald School Presence in County

	(1)	(2)	(3)	(4)
γ_0	.011	.014	.001	.010
	[.007]	[.006]**	[.007]	[.007]
γ_1	.024	.017	.034	.022
	[.010]**	[.008]**	[.009]***	[.008]***
γ_2	−.013	−.012	.004	−.001
	[.007]*	[.006]**	[.006]	[.005]
γ_3	.067	.047	.055	.041
	[.011]***	[.010]***	[.010]***	[.010]***
	Differences (ROSE − No ROSE)			
Black rural ($\gamma_0 + \gamma_1 + \gamma_2 + \gamma_3$)	.089	.066	.094	.072
	[.007]***	[.007]***	[.007]***	[.007]***
White rural ($\gamma_0 + \gamma_2$)	−.002	.002	.005	.008
	[.004]	[.004]	[.006]	[.005]
Black urban ($\gamma_0 + \gamma_1$)	.034	.031	.036	.032
	[.008]***	[.008]***	[.009]***	[.009]***
White urban (γ_0)	.011	.014	.001	.010
	[.007]	[.006]**	[.007]	[.007]
	Difference in Difference			
Black, rural-urban ($\gamma_2 + \gamma_3$)	.054	.035	.059	.040
	[.009]***	[.009]***	[.009]***	[.009]***
White, rural-urban (γ_2)	−.013	−.012	.004	−.001
	[.007]*	[.006]**	[.006]	[.005]
Black-white rural ($\gamma_1 + \gamma_3$)	.091	.065	.089	.063
	[.006]***	[.006]***	[.006]***	[.006]***
Black-white urban (γ_1)	.024	.017	.034	.022
	[.010]**	[.008]**	[.009]***	[.008]***
	Triple Difference			
Black-white rural − black-white urban (γ_3)	.067	.047	.055	.041
	[.011]***	[.010]***	[.010]***	[.010]***
Controls	N	Y	N	Y
County fixed effects	N	N	Y	Y
N	650,167	650,167	650,167	650,167

Rosenwald Schools

TABLE 3
Literacy Effects of Rosenwald School Presence in County, or Rosenwald School Exposure

	(1)	(2)	(3)	(4)
	Rosenwald Presence		Rosenwald Exposure	
γ_0	−.030	−.018	−.058	−.051
	[.005]***	[.005]***	[.009]***	[.011]***
γ_1	.052	.039	.086	.083
	[.008]***	[.007]***	[.017]***	[.016]***
γ_2	.020	.018	.029	.012
	[.005]***	[.004]***	[.008]***	[.008]
γ_3	.064	.053	.182	.165
	[.010]***	[.009]***	[.022]***	[.020]***
	Differences (ROSE − No ROSE)		Difference (Effect of Exposure)	
Black rural ($\gamma_0 + \gamma_1 + \gamma_2 + \gamma_3$)	.106	.093	.239	.209
	[.007]***	[.006]***	[.017]***	[.015]***
White rural ($\gamma_0 + \gamma_2$)	−.010	.000	−.029	−.039
	[.003]***	[.003]	[.008]***	[.008]***
Black urban ($\gamma_0 + \gamma_1$)	.022	.021	.028	.032
	[.008]***	[.007]***	[.014]*	[.011]***
White urban (γ_0)	−.03	−.018	−.058	−.051
	[.005]***	[.005]***	[.009]***	[.011]***
	Difference in Difference		Difference in Difference	
Black, rural-urban ($\gamma_2 + \gamma_3$)	.084	.071	.211	.177
	[.010]***	[.008]***	[.020]***	[.017]***
White, rural-urban (γ_2)	.020	.018	.029	.012
	[.005]***	[.004]***	[.008]***	[.008]
Black-white rural ($\gamma_1 + \gamma_3$)	.116	.092	.268	.248
	[.006]***	[.005]***	[.018]***	[.016]***
Black-white urban (γ_1)	.052	.039	.086	.083
	[.008]***	[.007]***	[.017]***	[.016]***
	Triple Difference		Triple Difference	
Black-white rural − black-white urban (γ_3)	.064	.053	.182	.165
	[.010]***	[.009]***	[.022]***	[.020]***
Controls	N	Y	Y	Y
County fixed effects	N	Y	Y	N
County × year fixed effects	N	N	N	Y
N	431,976	431,976	425,115	425,115

Rosenwald Schools

TABLE 5
Effects of Rosenwald Exposure on Outcomes in World War II Data

	All Ages and Years, Volunteers and Draftees							Young Draftees	
	Education (1)	Education (2)	Some High School (3)	Complete High School (4)	AGCT Scores (5)	AGCT Including Education (6)	Height (7)	Education (8)	AGCT Scores (9)
γ_0	.061	.048	.056	.003	−2.275	−1.769	−.027	1.077	.025
	[.131]	[.119]	[.019]	[.018]	[1.198]*	[1.054]*	[.139]	[.635]	[1.372]
γ_1	−.017	−.131	−.017	−.007	2.008	−.328	.033	−.271	2.775
	[.298]	[.256]	[.043]	[.028]	[1.971]	[2.796]	[.110]	[.312]	[3.134]
γ_2	−.146	−.100	−.071	−.004	−2.867	−.010	−.051	−.561	−2.258
	[.164]	[.157]	[.024]	[.022]	[3.170]	[2.512]	[.177]	[.831]	[1.831]
γ_3	1.186	1.377	.204	.090	8.033	−1.986	−.191	1.335	7.832
	[.367]***	[.339]***	[.056]***	[.036]***	[4.006]**	[3.941]	[.175]	[.411]***	[5.714]
	Difference (Effect of Complete Exposure)								
Black rural ($\gamma_0 + \gamma_1 + \gamma_2 + \gamma_3$)	1.084	1.193	.171	.083	4.899	−4.094	−.235	1.580	8.374
	[.232]***	[.228]***	[.039]***	[.024]***	[4.156]	[3.352]	[.155]	[.600]***	[4.615]*
White rural ($\gamma_0 + \gamma_2$)	−.085	−.053	−.015	.000	−5.142	−1.779	−.078	.516	−2.232
	[.097]	[.102]	[.015]	[.014]	[2.935]*	[2.282]	[.109]	[.535]	[1.213]*
Black urban ($\gamma_0 + \gamma_1$)	.044	−.083	.038	−.003	−.267	−2.097	.007	.806	2.800
	[.279]	[.244]	[.043]	[.024]	[2.243]	[2.549]	[.158]	[.692]	[2.744]
White urban (γ_0)	.061	.048	.056	.003	−2.275	−1.769	−.027	1.077	.025
	[.131]	[.119]	[.019]	[.018]	[1.198]*	[1.054]*	[.139]	[.635]	[1.372]

Rosenwald Schools

	Difference in Difference								
Black, rural-urban ($\gamma_2 + \gamma_3$)	1.040	1.276	.133	.086	5.166	−1.996	−.242	.774	5.574
	[.362]***	[.334]***	[.058]***	[.034]***	[4.723]	[4.230]	[.222]	[.915]	[5.369]
White, rural-urban (γ_2)	−.146	−.100	−.071	−.004	−2.867	−.010	−.051	−.561	−2.258
	[.164]	[.157]	[.024]	[.022]	[3.170]	[2.512]	[.177]	[.831]	[1.831]
Black-white rural ($\gamma_1 + \gamma_3$)	1.169	1.246	.186	.083	10.041	−2.314	−.158	1.064	10.606
	[.215]***	[.221]***	[.037]***	[.022]***	[3.487]***	[2.747]	[.137]	[.267]***	[4.779]**
Black-white urban (γ_1)	−.017	−.131	−.017	−.007	2.008	−.328	.033	−.271	2.775
	[.298]	[.256]	[.043]	[.028]	[1.971]	[2.796]	[.110]	[.312]	[3.134]
	Triple Difference								
Black-white rural − black-white urban (γ_3)	1.186	1.377	.204	.090	8.033	−1.986	−.191	1.335	7.832
	[.367]***	[.339]***	[.056]***	[.036]***	[4.006]**	[3.941]	[.175]	[.411]***	[5.714]
County fixed effects	Y	Y	Y	Y	Y	Y	Y	Y	N
Inverse probability weights	N	Y	Y	Y	Y	Y	Y	Y	Y
N	980,020	980,020	980,020	980,020	50,239	50,239	464,698	196,930	18,693

NOTE.—The sample is drawn from World War II enlistment records and includes men born between 1910 and 1928 who enlisted between 1940 and 1946 and who lived in either entirely rural or predominantly urban counties based on the 1910–30 censuses (see text for details). Estimates show the effect of complete exposure (exposure = 1) to Rosenwald schools between the ages of 7 and 13 relative to no exposure (exposure = 0). The controls include quarter of enlistment dummies interacted with race (except for cols. 5, 6, and 9), age dummies interacted with race, and county fixed effects. Columns 2–9 use the inverse of the probability of being in the military by race, county, and year of birth. Standard errors clustered by county are shown in brackets.

* Significant at 10 percent.

** Significant at 5 percent.

*** Significant at 1 percent

School Desegregation

Brown v. Board of Education of Topeka, 1954

School Desegregation

School Desegregation

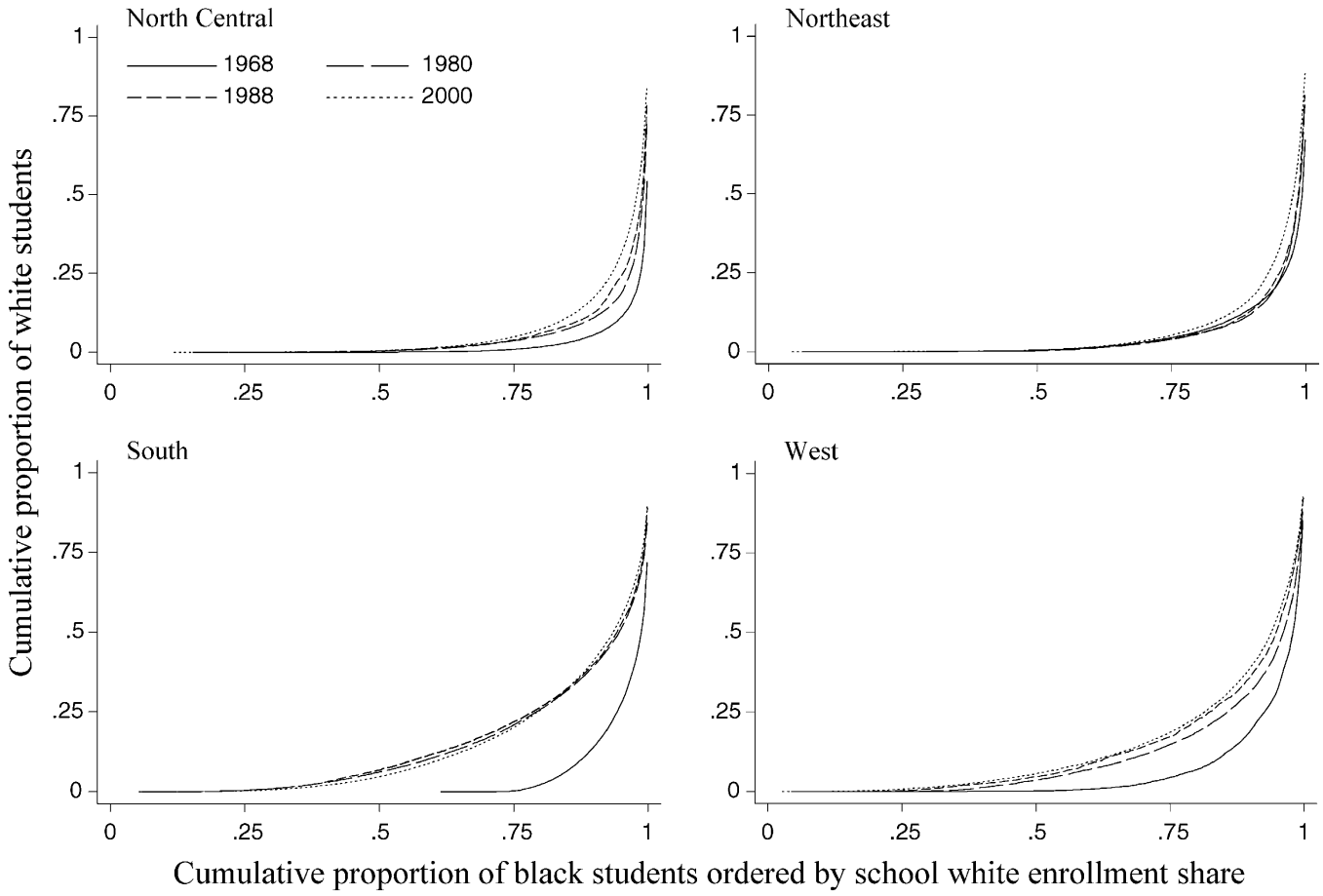


Figure 2. School segregation curves by region: 1968, 1980, 1988 and 2000.

School Desegregation

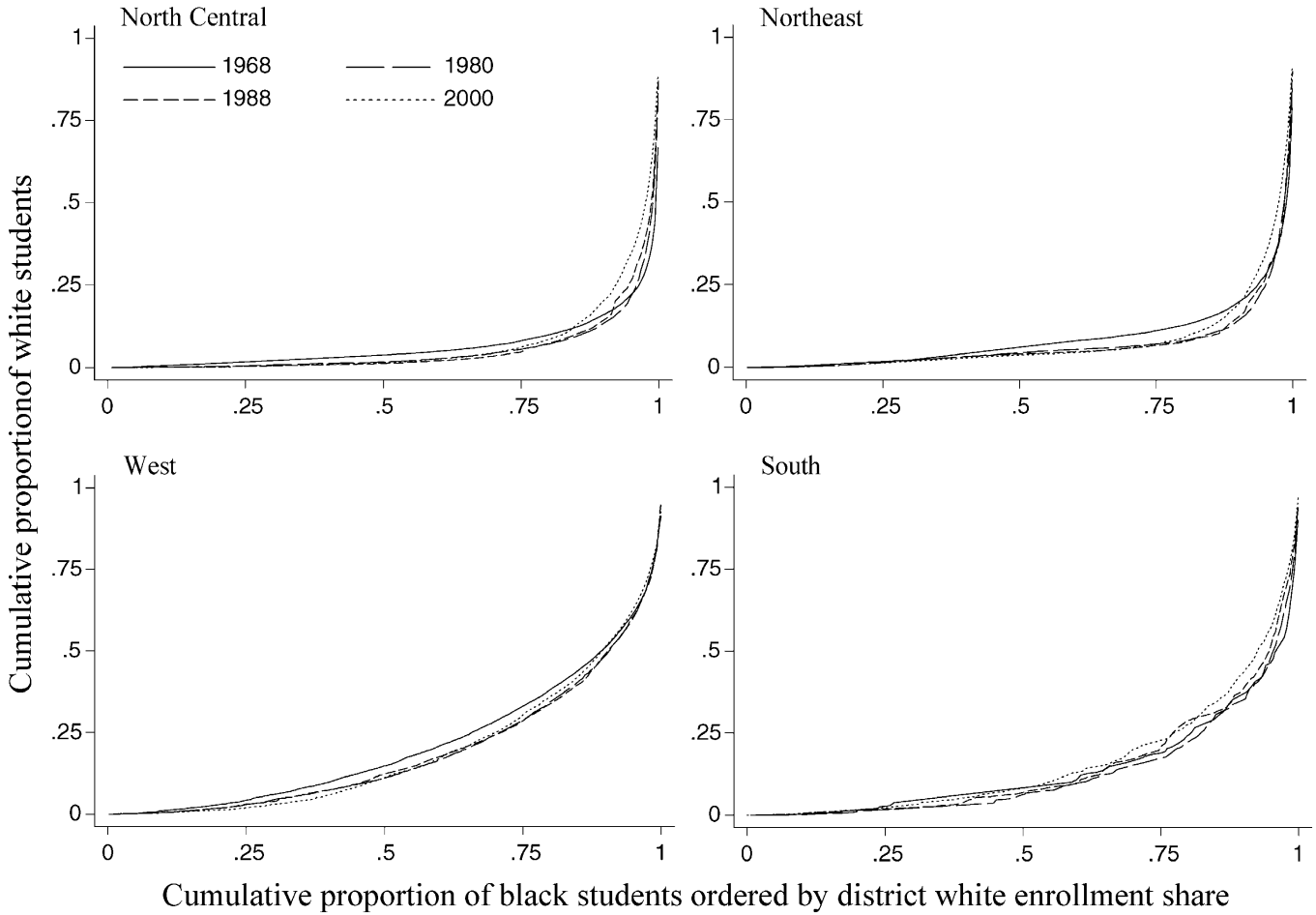


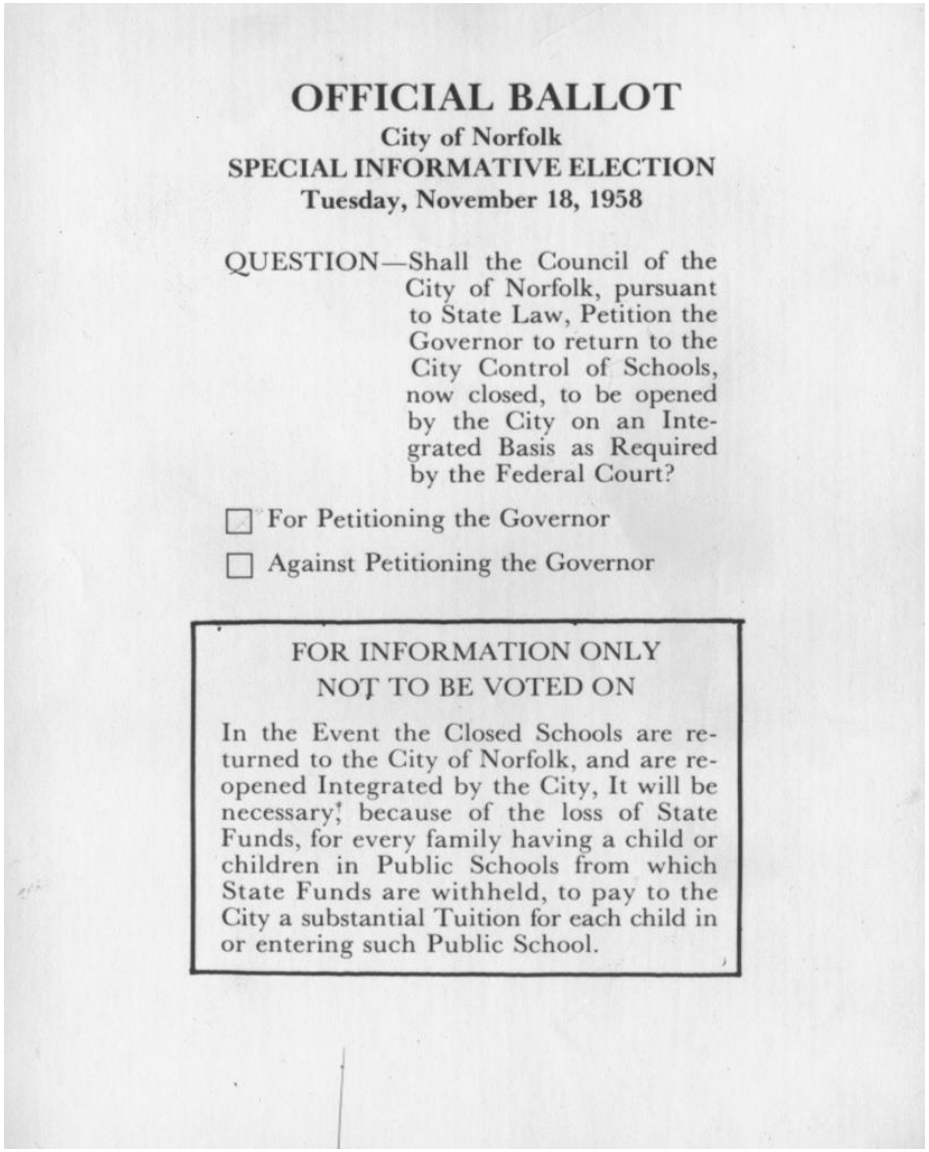
Figure 3. District segregation curves by region: 1968, 1980, 1988 and 2000.

School Desegregation

Table 4
School and district dissimilarity indexes by region: 1968–2000

School districts	School				District			
	1968	1980	1988	2000	1968	1980	1988	2000
Northeast	76.9	78.8	78.5	76.0	70.9	76.7	76.7	74.0
North Central	85.7	80.1	78.9	76.4	74.5	77.4	76.9	74.5
South	80.1	57.3	57.1	58.8	44.2	48.9	49.9	49.2
West	81.4	70.6	66.9	64.3	65.7	66.5	63.4	59.6
National	81.2	71.0	70.4	68.7	63.8	66.2	66.2	63.7

Race, Inequality and Mobility



OFFICIAL BALLOT

City of Norfolk
SPECIAL INFORMATIVE ELECTION
Tuesday, November 18, 1958

QUESTION—Shall the Council of the City of Norfolk, pursuant to State Law, Petition the Governor to return to the City Control of Schools, now closed, to be opened by the City on an Integrated Basis as Required by the Federal Court?

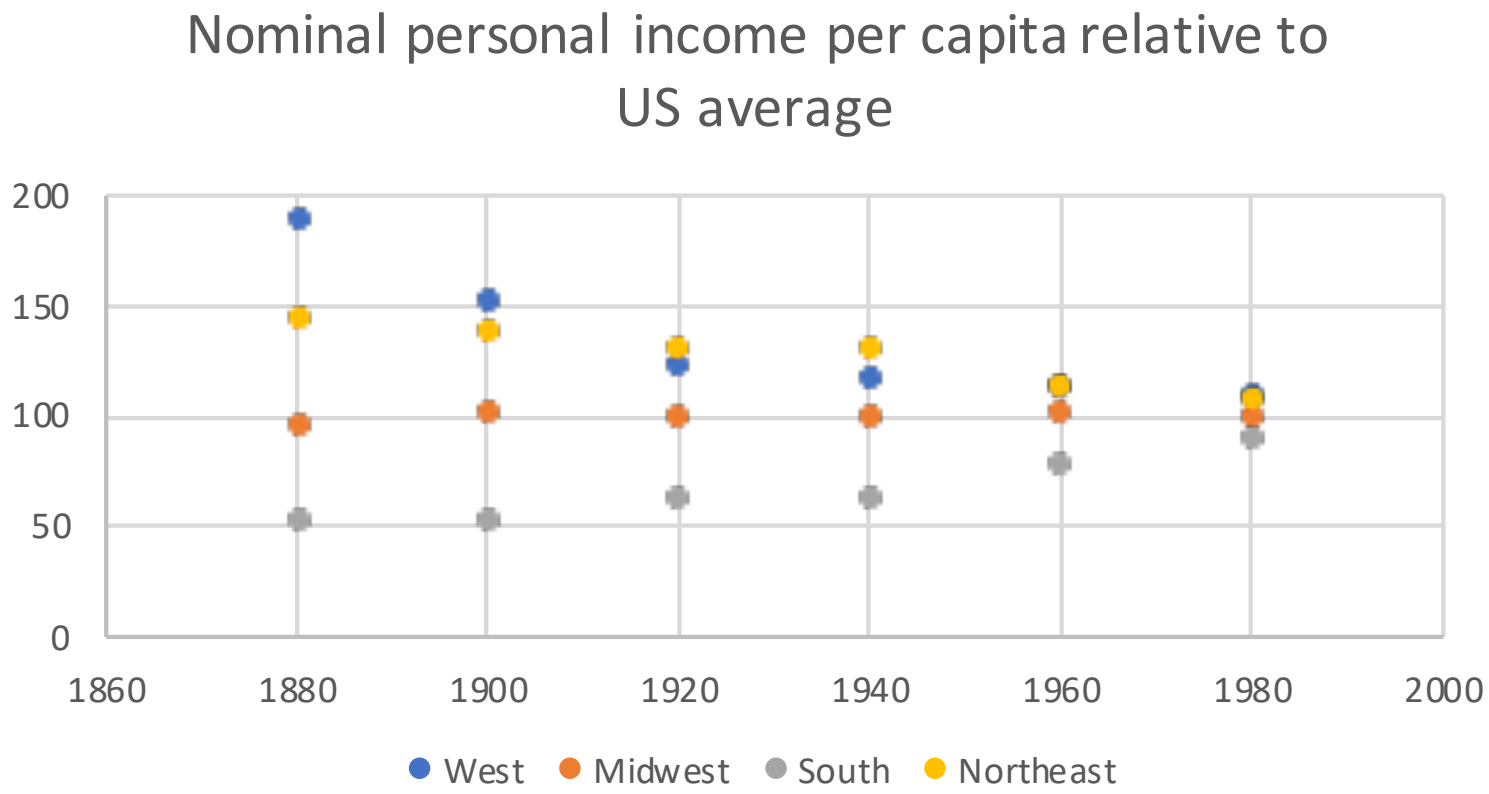
☐ For Petitioning the Governor

☐ Against Petitioning the Governor

FOR INFORMATION ONLY
NOT TO BE VOTED ON

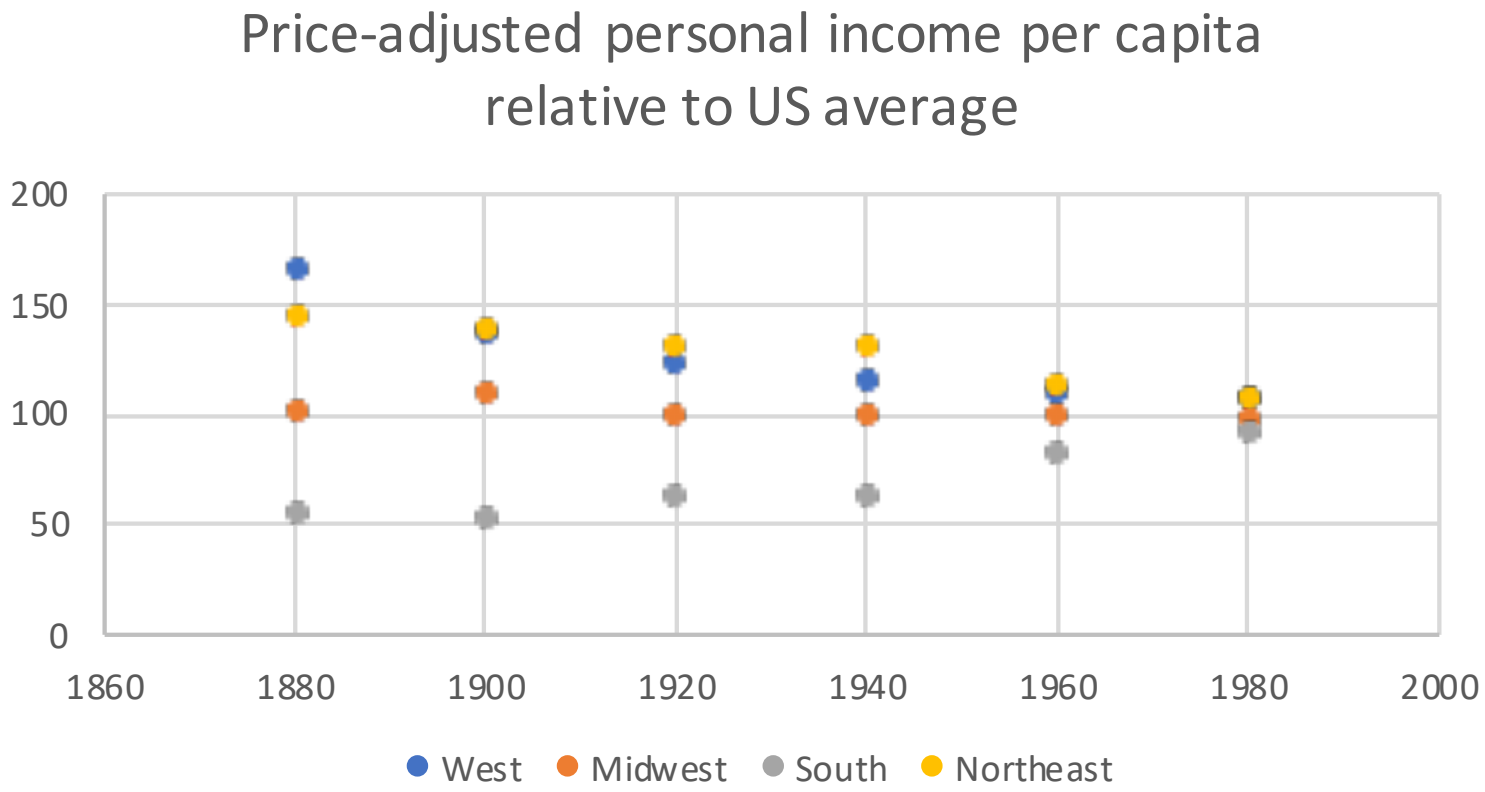
In the Event the Closed Schools are returned to the City of Norfolk, and are reopened Integrated by the City, It will be necessary, because of the loss of State Funds, for every family having a child or children in Public Schools from which State Funds are withheld, to pay to the City a substantial Tuition for each child in or entering such Public School.

Race, Inequality and Mobility



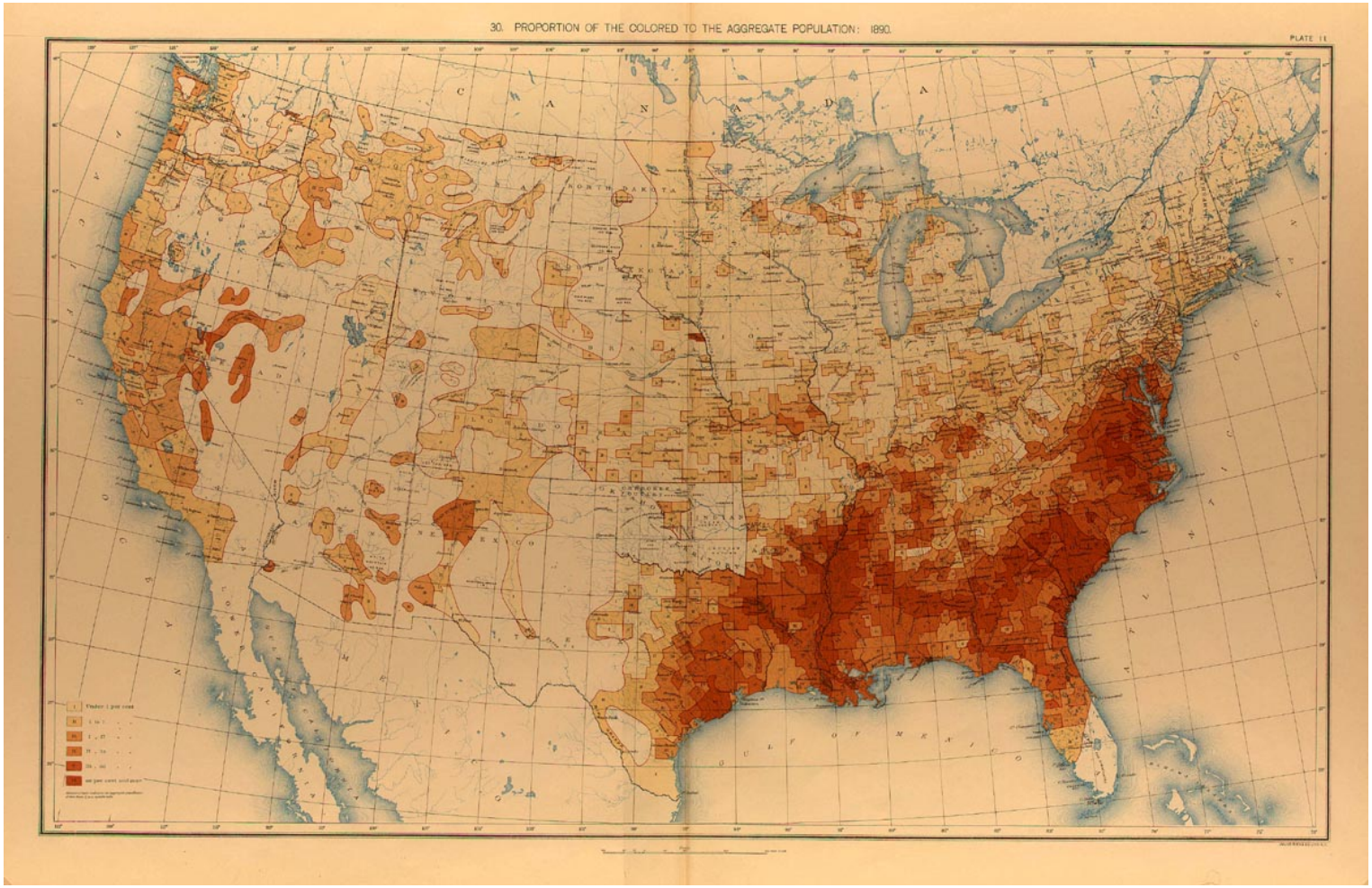
From Mitchener and McClean (1999)

Race, Inequality and Mobility



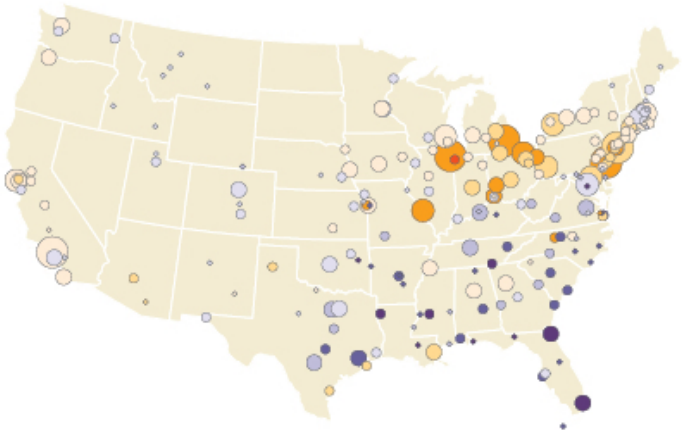
From Mitchener and McClean (1999)

Race, Inequality and Mobility

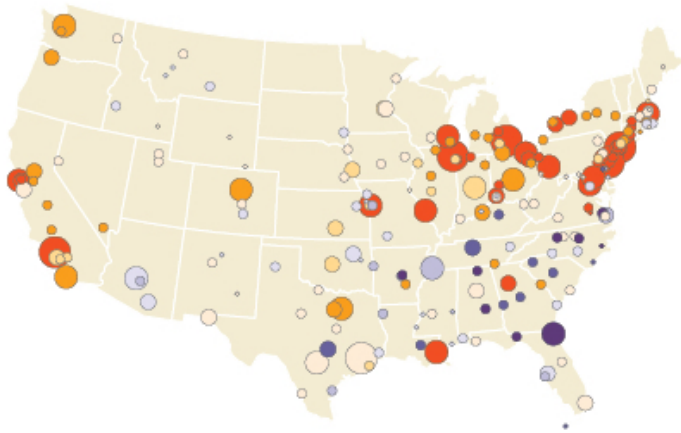


Race, Inequality and Mobility

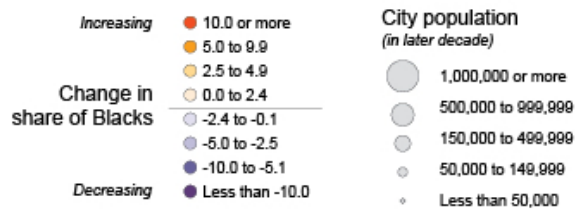
The First Great Migration:
1910-1940



The Second Great Migration:
1940-1970



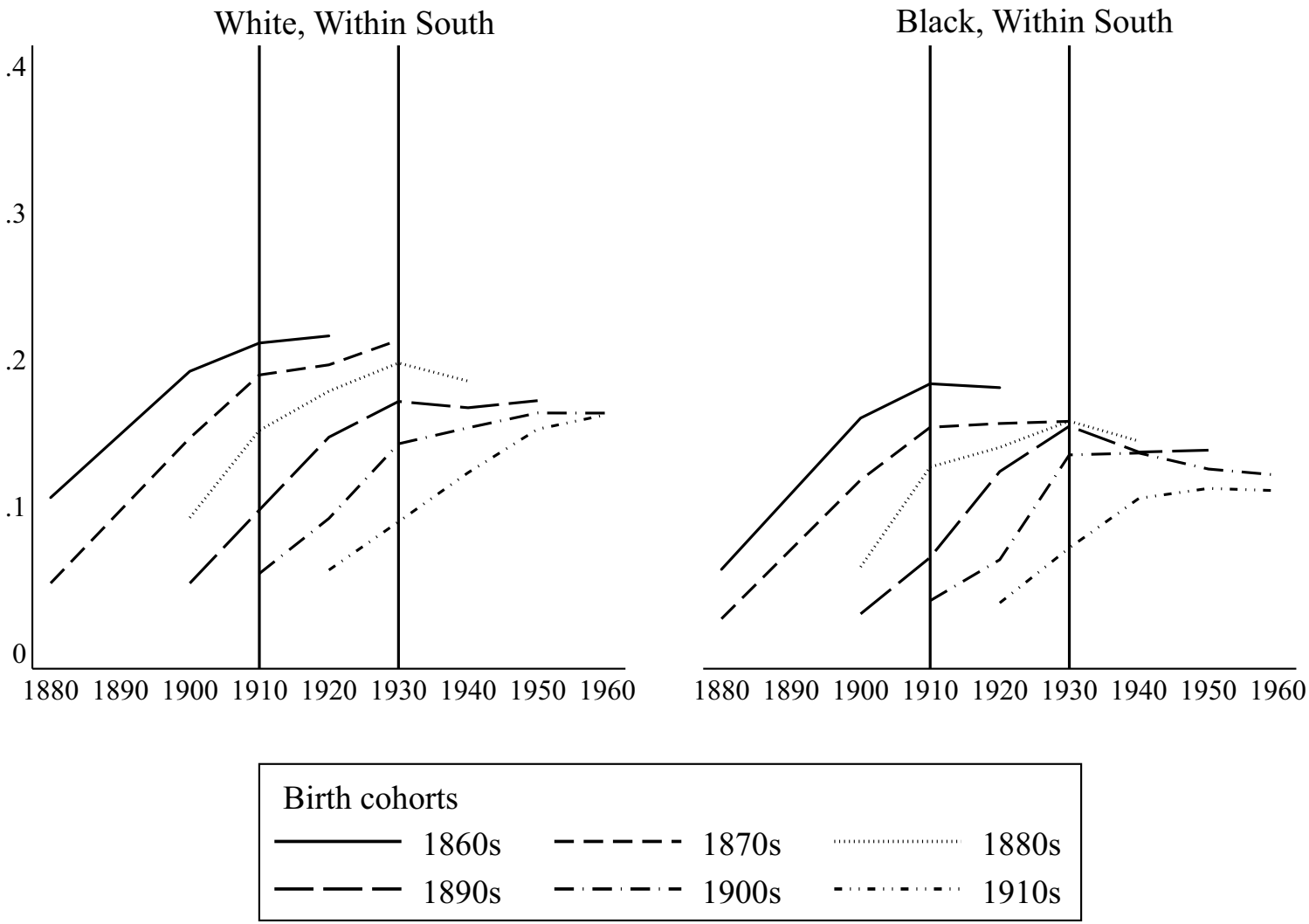
The change in share of Blacks in cities is based on the percentage point difference in the percent of population that was Black in the later time period compared to the earlier. For example, 18.3 percent of the population in Gary, IN was Black in 1940 but was just 2.3 in 1910, which represented a 16.0 percentage-point change in the share of Blacks in the city. It was the largest change in share during the First Great Migration. By the end of the Second Great Migration, Newark, NJ had realized the largest increase in Black population share, with the Black proportion of the city rising from 10.6 in 1940 to 54.2 in 1970.



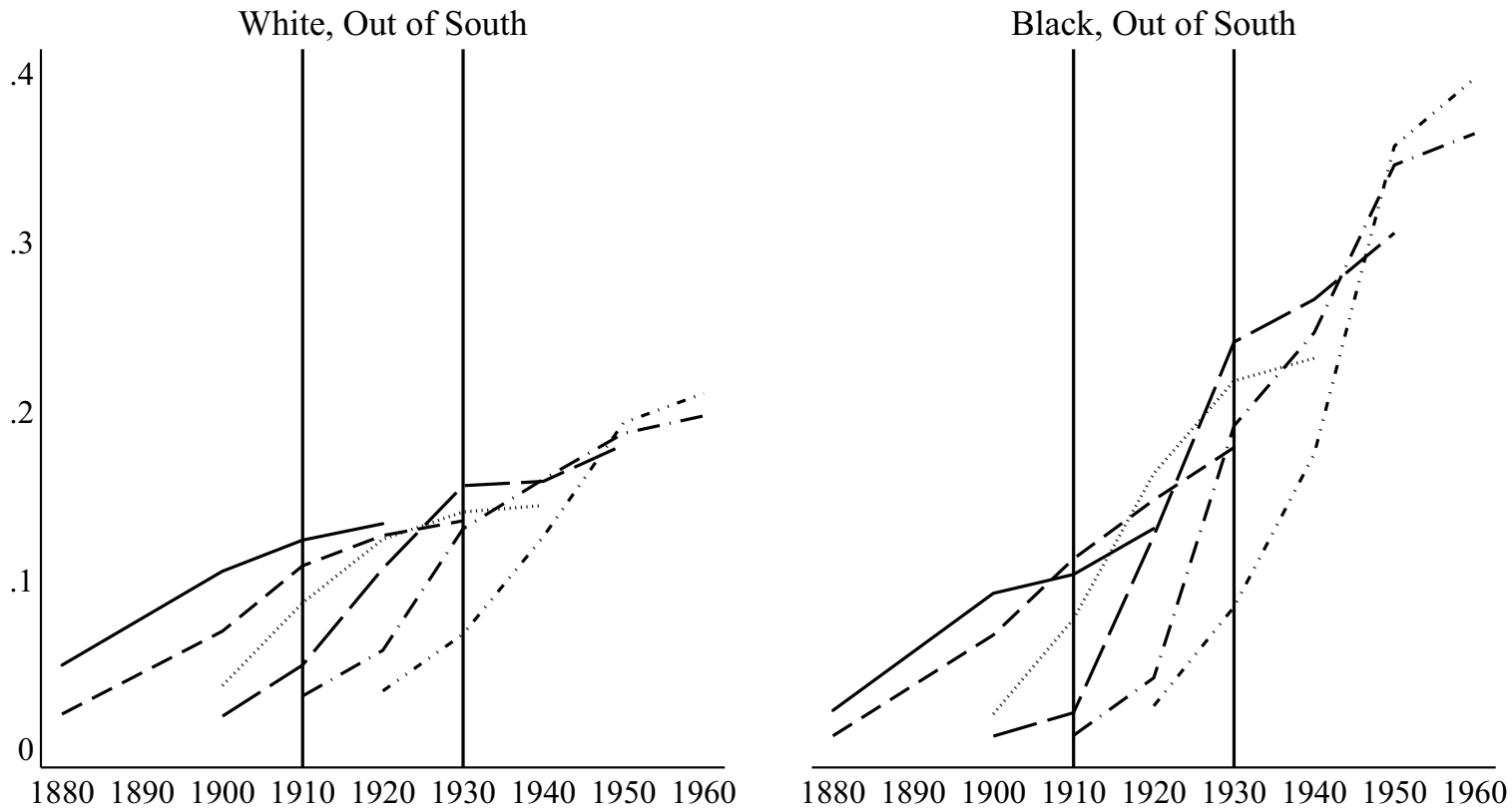
The Great Migration

- Discrimination and poor job opportunities in the South pushed black individuals out of South
- At the same time, increasing demand for industrial workers in the North served as a pull factor (for both black and white individuals)
- Let's take a look at two papers by Collins and Wanamaker to look at the effects of the Great Migration
  - "The Great Migration in Black and White: New Evidence on the Geographic Mobility of American Southerners" Journal of Economic History (2012)
  - "Selection and Economic Gains in the Great Migration of African Americans: New Evidence from Linked Census Data" American Economic Journal: Applied Economics (2014)

The Great Migration



The Great Migration



The Great Migration

- Both Collins and Wanamaker papers are going to rely on the same linked dataset, matching men between the 1910 and 1930 censuses
- Why is a linked dataset particularly important for studying the Great Migration?
- A few things to consider:
  - Quality of location information
  - Controlling for observable characteristics (before and after migration)
  - Controlling for unobserved county or household characteristics
- These issues are crucial for considering selection into and returns from migrating

The Great Migration

SELECTION INTO 1910–1930 MIGRATION ON BASIS OF 1910 CHARACTERISTICS

	White Males			Black Males		
	Sample Average	Difference vs. Non-migrants	Adjusted Difference	Sample Average	Difference vs. non-Migrants	Adjusted Difference
A. Literacy rate (N=14,761 white and 3,702 black)						
Non-migrants	0.924	—	—	0.650	—	—
Within-South migrants	0.925	0.001	–0.000	0.653	0.003	–0.008
		(0.006)	(0.006)	—	(0.021)	(0.026)
Inter-regional migrants	0.936	0.013**	–0.004	0.684	0.035*	0.008
		(0.006)	(0.006)	—	(0.020)	(0.024)
B. School attendance rate (age 6 to 15) (N=6,587/1,705)						
Non-migrants	0.828	—	—	0.613	—	—
Within-South migrants	0.823	–0.006	–0.005	0.612	–0.006	–0.013
		(0.013)	(0.015)	—	(0.031)	(0.046)
Inter-regional migrants	0.838	0.010	–0.003	0.655	0.043	0.035
		(0.013)	(0.015)	—	(0.026)	(0.036)
C. Occupation income score, in hundreds of 1950 dollars (N=11,960/3,259)						
Non-migrants	16.3	—	—	12.3	—	—
Within-South migrants	17.3	1.00***	0.80***	13.4	1.07***	0.53*
		(0.325)	(0.292)	—	(0.384)	(0.315)
Inter-regional migrants	18.2	1.86***	0.81***	13.2	0.85**	0.65*
		(0.379)	(0.285)	—	(0.357)	(0.357)

The Great Migration

D. Occupation education score (N=11,834/3,239)						
Non-migrants	10.77	—	—	7.90	—	—
Within-South migrants	10.87	0.104**	0.079	8.04	0.131**	0.082
		(0.047)	(0.048)	—	(0.054)	(0.067)
Inter-regional migrants	10.92	0.148***	0.062	8.02	0.120***	0.025
		(0.053)	(0.050)	—	(0.041)	(0.042)
E. Farm origin (N=21,367/5,462)						
Non-migrants	0.610	—	—	0.592	—	—
Within-South migrants	0.530	–0.080***	–0.083***	0.521	–0.071***	–0.029
		(0.012)	(0.009)	—	(0.021)	(0.019)
Inter-regional migrants	0.500	–0.11***	–0.071***	0.502	–0.090***	–0.033*
		(0.013)	(0.010)	—	(0.019)	(0.017)
F. Homeownership rate (N=21,367/5,462)						
Non-migrants	0.543	—	—	0.222	—	—
Within-South migrants	0.472	–0.071***	–0.056***	0.200	–0.022	–0.004
		(0.010)	(0.010)	—	(0.015)	(0.016)
Inter-regional migrants	0.505	–0.038***	–0.037***	0.251	0.030**	0.007
		(0.011)	(0.010)	—	(0.015)	(0.016)

The Great Migration

- So Collins and Wanamaker are finding some positive selection into migration (but perhaps not as much as we might expect)
- Beyond the decision of selection into migration, there is also the question of destination choice
- Here Collins and Wanamaker do find some interesting variation between black and white migrants

The Great Migration

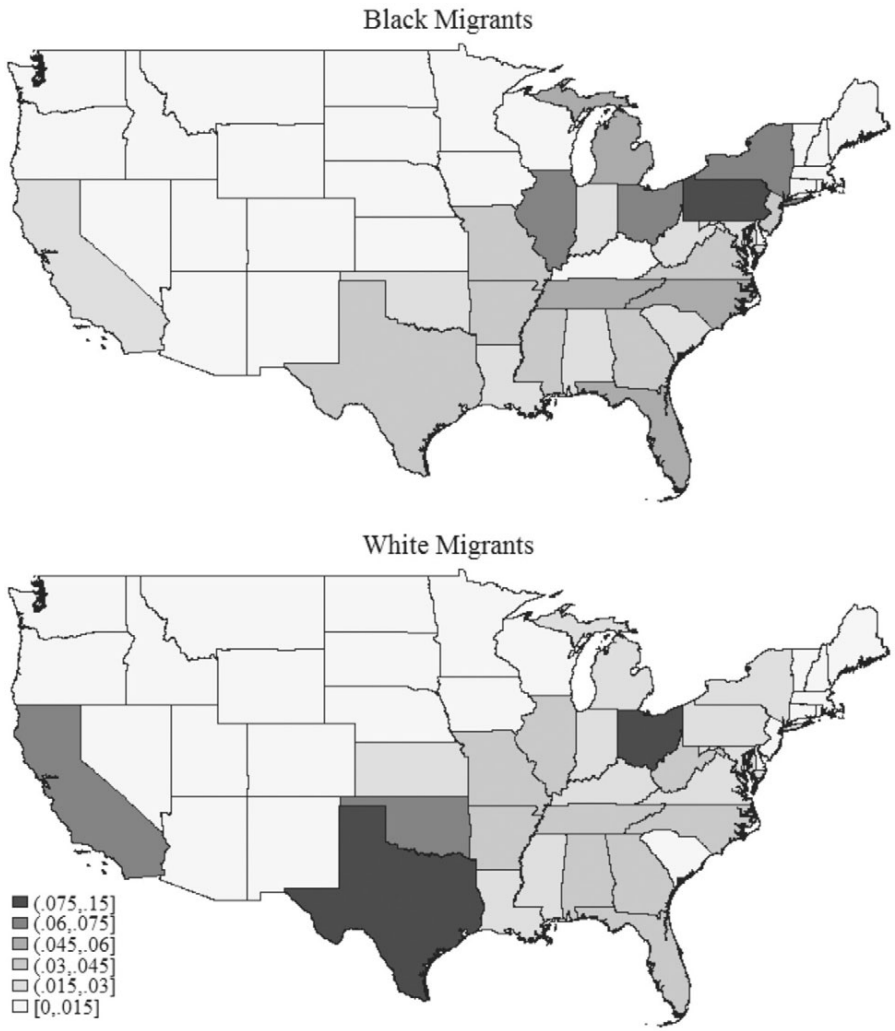


FIGURE 2
DISTRIBUTION OF INTER-STATE MIGRANTS IN LINKED SAMPLE, 1910–1930

The Great Migration

TABLE 4
MIGRANT SORTING, CONDITIONAL LOGIT COEFFICIENTS

	(1) White (A)	(2) White (B)	(3) White (C)	(4) Black (A)	(5) Black (B)	(6) Black (C)	(7) Pooled, Coefficients on Race Interaction (A)	(8) Pooled, Coefficients on Race Interaction (B)	(9) Pooled, Coefficients on Race Interaction (C)
Cost variables									
Log distance	–1.27***	–1.23***	–1.56***	–1.78***	–1.73***	–1.84***	–0.512***	–0.500***	–0.275***
	(0.0278)	(0.0285)	(0.0339)	(0.0728)	(0.0738)	(0.0900)	(0.0759)	(0.0772)	(0.093)
Migrant stock	0.193***	0.201***	0.182***	0.193***	0.198***	0.157***	–0.000375	–0.00330	–0.0256
	(0.00799)	(0.00877)	(0.0137)	(0.0251)	(0.0252)	(0.0312)	(0.0257)	(0.0265)	(0.0336)
Labor market variables									
Log average income	1.40***	1.10***	—	0.556***	0.0478	—	–0.848***	–1.05***	—
	(0.0859)	(0.0955)	—	(0.139)	(0.180)	—	(0.159)	(0.201)	—
Log labor demand	0.436***	—	—	0.789***	—	—	0.352***	—	—
	(0.0180)	—	—	(0.0377)	—	—	(0.0413)	—	—
Percent manufacturing	—	–0.0259***	—	—	0.0101**	—	—	0.0360***	—
	—	(0.00284)	—	—	(0.00494)	—	—	(0.00560)	—
Percent agriculture	—	–0.0271***	—	—	–0.0281***	—	—	–0.000976	—
	—	(0.00280)	—	—	(0.00614)	—	—	(0.00667)	—

The Great Migration

Region and other control variables									
Non-South	–0.452***	–0.412***	—	–0.415***	–0.291**	—	0.0369	0.121	—
	(0.0465)	(0.0474)	—	(0.126)	(0.127)	—	(0.134)	(0.136)	—
Urban	–0.00842***	–0.0151***	—	0.00587***	–0.0111***	—	0.0143***	0.00404	—
	(0.00108)	(0.00172)	—	(0.00182)	(0.00360)	—	(0.00214)	(0.00400)	—
Log population	—	0.503***	—	—	0.879***	—	—	0.376***	—
	—	(0.0207)	—	—	(0.0396)	—	—	(0.0451)	—
Pseudo R^2	0.21	0.21	0.26	0.26	0.26	0.29	0.22	0.22	0.27
N	7,498	7,498	7,498	2,114	2,114	2,114	9,612	9,612	9,612

* = Significant at the 90 percent level.
** = Significant at the 95 percent level.
*** = Significant at the 99 percent level.

The Great Migration

- So we have substantial number of both white and black individuals migrating from the South
- Both groups seem somewhat positively selected
- Where they end up differs a bit by race
- The big question is what the returns to migration were and whether those differed by race
- To explore this, let's turn to the other Collins and Wanamaker paper
- First, let's see what earnings looked like for migrants before they migrated

TABLE 4—1910 LOG EARNINGS SCORE DIFFERENCES BETWEEN SUBSEQUENT MIGRANTS AND NONMIGRANTS

	(1)	(2)	(3)
Panel A. Earnings score based on Lebergott (1928)			
Nominal	0.126	0.0468	0.0221
	(0.0249)	(0.0198)	(0.0225)
Real	0.115	0.0443	0.0230
	(0.0238)	(0.0200)	(0.0227)
Panel B. Earnings score based on IPUMS (1960)			
Nominal	0.152	0.0519	0.0160
	(0.0287)	(0.0228)	(0.0264)
Real	0.142	0.0495	0.0169
	(0.0277)	(0.0230)	(0.0265)
Controls for personal, household and county characteristics in 1910	No	Yes	Yes
1910 County fixed effects	No	No	Yes
Observations	2,079	2,079	2,079

Notes: Each coefficient is from a separate regression of log earnings score on migrant status (=1 if interregional migrant). Earnings are assigned according to the industry or occupation held in 1910, as described in the text. The control variables differ across the columns. Standard errors are adjusted for clustering at the household level. Column 1 has no control variables. Column 2 controls for age fixed effects, veteran status, a binary variable for blank veteran status, city status, owner-occupied housing interacted with headship status, state-level log income per capita, black percent of county population, black adult literacy rate in the county, black children's school attendance in the county, and percent of farm acres in cotton. All variables pertain to 1910 status except veteran status. The specification in column 3 includes county fixed effects.

TABLE 6—OCCUPATIONAL TRANSITION MATRIX FOR MEN WORKING IN 1910 AND 1930

	Distribution in 1910	Professional/ clerical in 1930	Farm in 1930	Crafts/ semi-skill in 1930	Nonag. laborer/operative in 1930
Panel A. Full sample ($N = 1{,}829$)					
Professional/clerical	1.5	0.4	0.7	0.2	0.3
Farm	56.8	1.8	33.1	4.7	17.2
Crafts/semi-skill	8.0	0.9	2.5	1.1	3.5
Nonag. laborer/operative	33.8	1.6	13.8	4.3	14.1
Panel B. Nonmigrants ($N = 1{,}548$)					
Professional/clerical	1.6	0.5	0.8	0.1	0.3
Farm	59.1	1.7	38.8	4.4	14.3
Crafts/semi-skill	7.6	0.8	3.0	1.0	2.8
Nonag. laborer/operative	31.7	1.3	15.9	3.0	11.6
Panel C. Migrants ($N = 281$)					
Professional/clerical	0.7	0.0	0.0	0.4	0.4
Farm	43.8	2.5	1.8	6.1	33.5
Crafts/semi-skill	10.3	1.4	0.0	1.4	7.5
Nonag. laborer/operative	45.2	3.2	2.5	11.4	28.1

Notes: The base sample for this table includes men from the linked dataset who were age 21 to 40 in 1910 and had occupation reported in both 1910 and 1930. Each cell reports the percentage of the panel's sample that transitioned from one category to another between 1910 and 1930 (e.g., 17.2 percent of all workers transitioned from farming in 1910 to nonfarm, unskilled labor by 1930). Within each panel, the 1930 percentages sum to 100.

Source: See text.

The Great Migration

TABLE 7—LOG EARNINGS SCORE DIFFERENTIALS IN 1930 BY MIGRANT STATUS

	(1)	(2)	(3)	(4a)	(4b)	(5a)	(5b)
Panel A. Earnings score based on Lebergott (1928)							
Nominal	0.891	0.869	0.860	0.788	0.789	0.878	0.832
	(0.00981)	(0.0100)	(0.0124)	(0.0795)	(0.0982)	(0.0177)	(0.0273)
Real	0.685	0.667	0.661	0.604	0.595	0.680	0.636
	(0.00950)	(0.00968)	(0.0119)	(0.0759)	(0.0935)	(0.0167)	(0.0268)
Panel B. Earnings score based on IPUMS (1960)							
Nominal	0.900	0.873	0.860	0.788	0.786	0.889	0.829
	(0.0135)	(0.0138)	(0.0166)	(0.0996)	(0.121)	(0.0249)	(0.0345)
Real	0.694	0.671	0.661	0.604	0.592	0.691	0.633
	(0.0133)	(0.0136)	(0.0161)	(0.0993)	(0.121)	(0.0243)	(0.0342)
Controls for personal, household, and county characteristics in 1910	No	Yes	Yes	Yes	Yes	Yes	Yes
1910 County fixed effects	No	No	Yes	Yes	No	No	No
1910 Household fixed effects	No	No	No	No	Yes	No	No
Differenced dependent variable (1930–1910)	No	No	No	No	No	No	Yes
Observations	5,055	5,055	5,055	403	403	1,935	1,935

The Great Migration

- So these are huge returns to migration
- The question is, how much did this migration close the black-white wage gap?
- To answer this, Collins and Wanamaker estimate a counterfactual where none of the black migrants during the Great Migration migrated, stripping them of the wage gains from migration
- Without the Great Migration, the black-white earnings ratio would be 0.42 in 1930 instead of the actual ratio of 0.47
- The ratio in 1910 was 0.44, suggesting Southern blacks may have fell further behind without with the Great Migration

The Evolution of American Cities

- With the Great Migration, we see an increase in black populations in Northern and Midwestern cities
- A big question in a variety of social sciences literatures is how existing residents responded to that rise in the black population
- A common thread is that there may have been 'white flight' from the cities to the suburbs with a corresponding flight of tax revenues and jobs to the suburbs
- Let's explore this by first looking at the work of Cutler, Glaeser and Vigdor (1999)

The Evolution of American Cities

- Cutler, Glaeser and Vidgor are going to look at changes in segregation in American cities over the twentieth century
- To measure segregation, they are going to rely on *dissimilarity* as a measure of evenness and *isolation* as a measure of exposure
- Both of these measures rely on comparing the racial composition of a ward or census tract to the racial composition of a city as a whole

The Evolution of American Cities

The dissimilarity index provides a measure of how evenly black residents are distributed across wards within a city

$$D = \frac{1}{2} \sum_{i=1}^{N} \left| \frac{B_i}{B_{\text{total}}} - \frac{W_i}{W_{\text{total}}} \right|$$

- B_i: black households in ward i
- B_{total}: total black households in city
- W_i: white households in ward i
- W_{total}: total white households in city

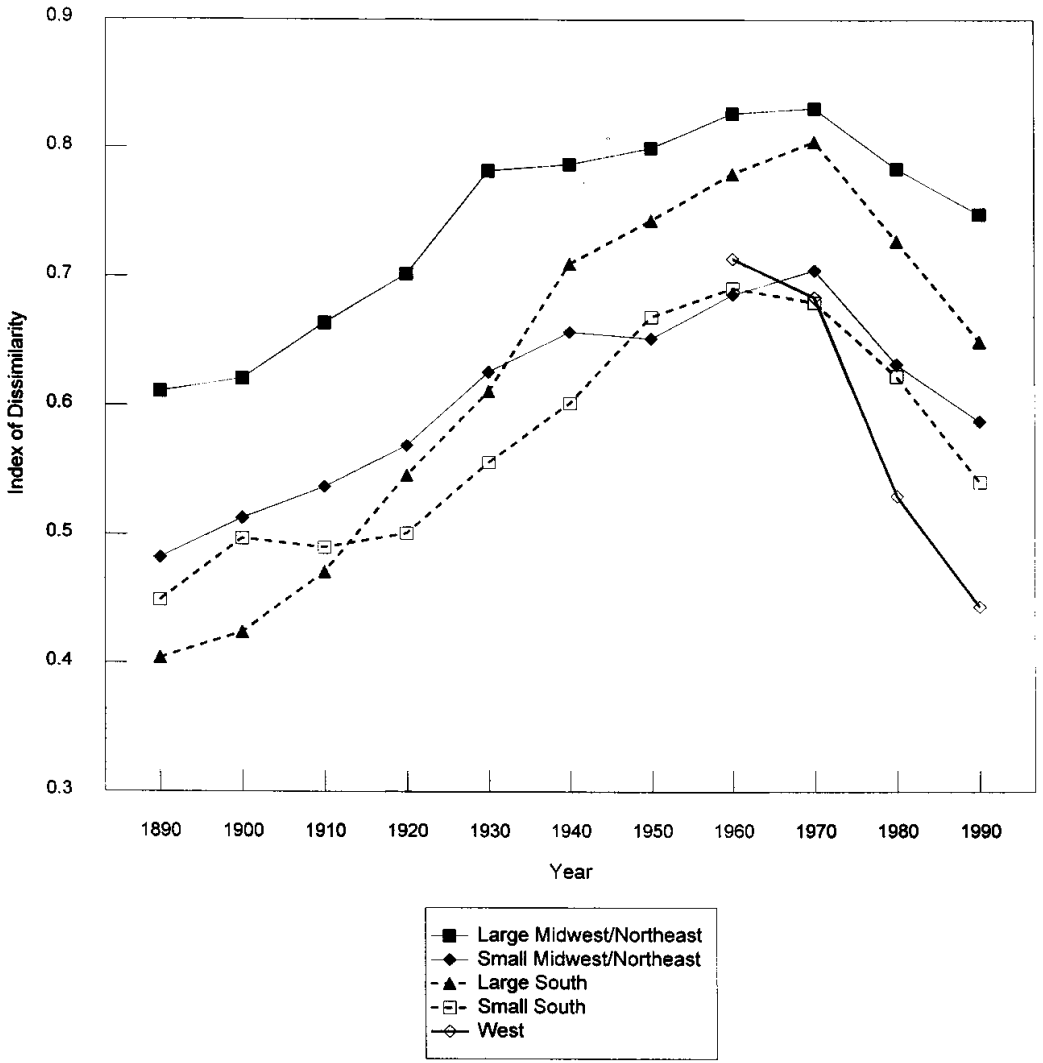
The Evolution of American Cities

The isolation index provides a measure of the lack of exposure of the average black resident to white residents

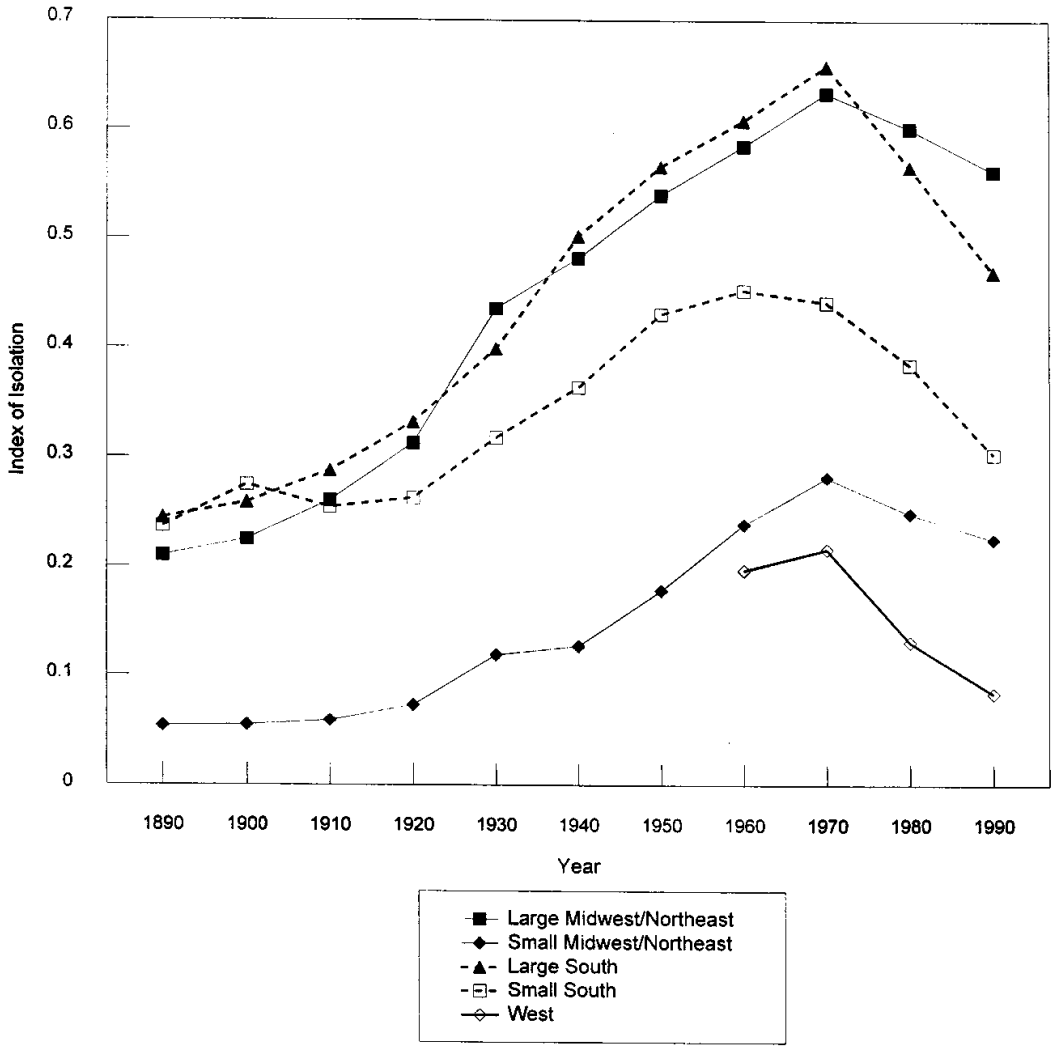
$$I = \sum_{i=1}^{N} \left(\frac{B_i}{B_{\text{total}}} \cdot \frac{B_i}{B_i + W_i} \right)$$

- B_i: black households in ward i
- B_{total}: total black households in city
- W_i: white households in ward i

The Evolution of American Cities



The Evolution of American Cities



The Evolution of American Cities

- Cutler, Glaeser and Vigdor identify a substantial rise in segregation in American cities starting around the time of the Great Migration
- Segregation is more pronounced in larger cities and in the Midwest/Northeast
- Segregation peaks around 1970 and the falls somewhat after that
- Is there any way to determine whether an inflow of migrants caused white flight?
- Let's turn to Boustan (2010)

The Evolution of American Cities

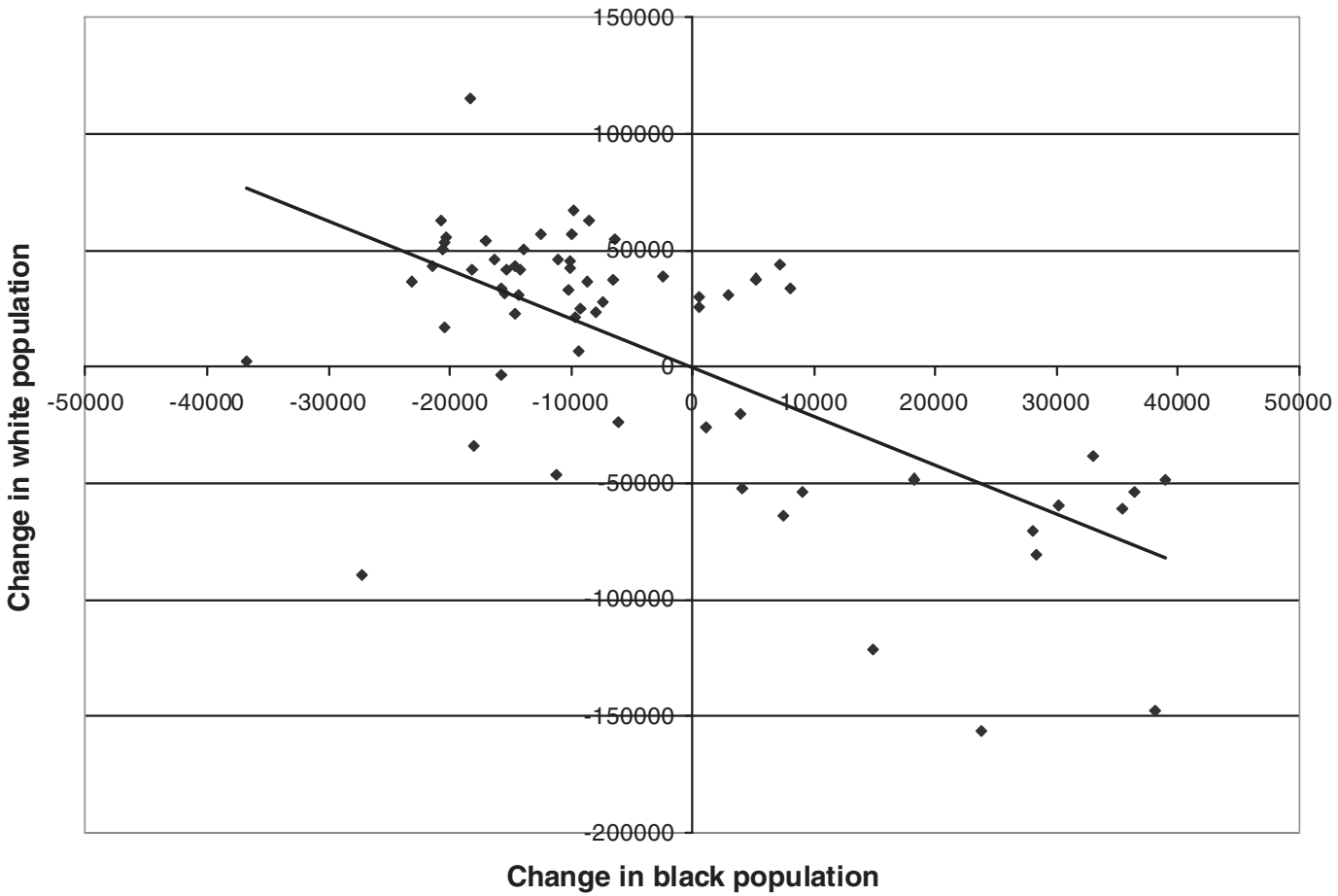


FIGURE I
Change in Black and White Population in Central City, 1950–1960

The Evolution of American Cities

- So we've got a pretty strong negative correlation between black and white population flows
- But is there a way to establish a causal relationship here?
- Boustan is going to use an instrument for northern black population composed of two components:
  - Predicted migrant flows from southern states
  - The settlement pattern established by blacks leaving these states in an earlier wave of migration
- The basic idea is to tease out fluctuations in the current black population of a city driven by economic conditions elsewhere (uncorrelated with conditions in the city of interest)

TABLE II
BLACK MIGRATION TO CENTRAL CITIES AND WHITE POPULATION LOSS

Dependent variable:	Actual black population in city	White population in city	
Instrument type	First stage	OLS	IV
Assign actual migrants	4.442	−2.099	−2.365
	(0.652)	(0.549)	(0.805)
Assign predicted migrants, 1940–1970	3.466	−2.099	−2.627
	(0.671)	(0.549)	(0.782)
Assign predicted migrants, 1950–1970	4.488	−2.278	−2.983
	(0.968)	(0.604)	(0.768)
Predict with 1940 variables, 1950–1970	4.365	−2.278	−3.085
	(0.799)	(0.604)	(0.708)
Long-run changes, 1940–2000	6.800	−0.771	−1.050
	(0.421)	(0.166)	(0.199)
Long-run changes, white foreign-born population in the city	—	0.264	0.169
		(0.066)	(0.078)

Suburbanization, Mobility and Inequality

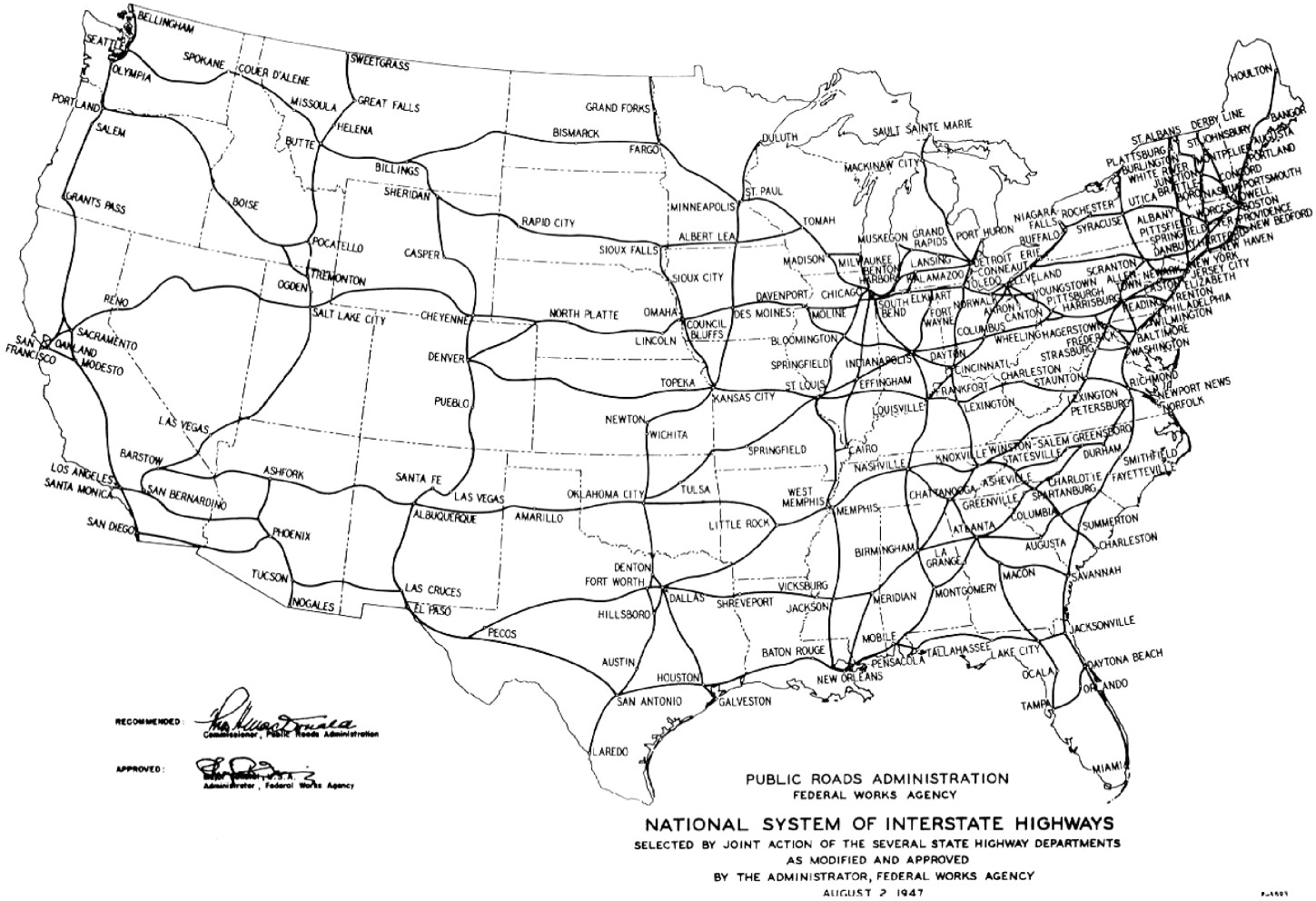
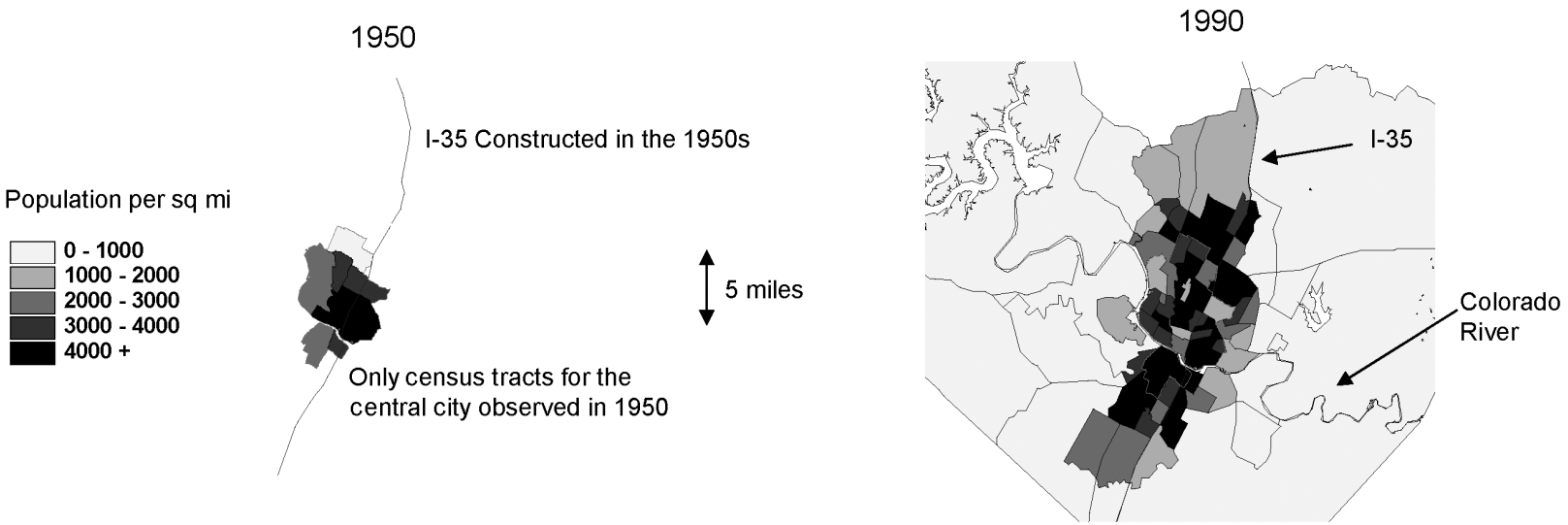


FIGURE I
The Projected System of Interstate Highways in 1947

Suburbanization, Mobility and Inequality



Note: Each shaded region is a separate census tract.

FIGURE II
Development Patterns in Austin, TX.

Table 2: Spending Per Pupil, Average Teacher Salary, Student-Teacher Ratio, and Student-Support Staff Ratio at the Median Spending School in Each Metropolitan Area

	Spending per pupil	Average teacher salary	Student-teacher ratio	Students-student support staff ratio
Boston				
Inner city	$5,770	$61,079	16:1	119:1
Suburb	$4,433	$38,180	17:1	61:1
Chicago				
Inner city	$4,482	$46,661	23:1	58:1
Suburb	$3,216	$39,852	21:1	100:1
Denver				
Inner city	$3,852	$38,044	20:1	171:1
Suburb	$3,313	$32,753	17:1	86:1
Fort Worth				
Inner city	$3,058	$41,402	21:1	162:1
Suburb	$4,246	$33,316	17:1	68:1
New York				
Inner city	$6,057	$42,285	[a]	[a]
Suburb	$7,218	$72,591	18:1	73:1
Oakland				
Inner city	$4,022	$52,440	30:1	233:1
Suburb	$4,849	$60,395	20:1	155:1
St. Louis				
Inner city	$5,337	$33,223	25:1	28:1
Suburb	$3,467	$34,304	13:1	87:1

Note: School districts in New York City did not provide us with information on student-teacher ratios and the ratio of students to student support staff.

[a]Not applicable.

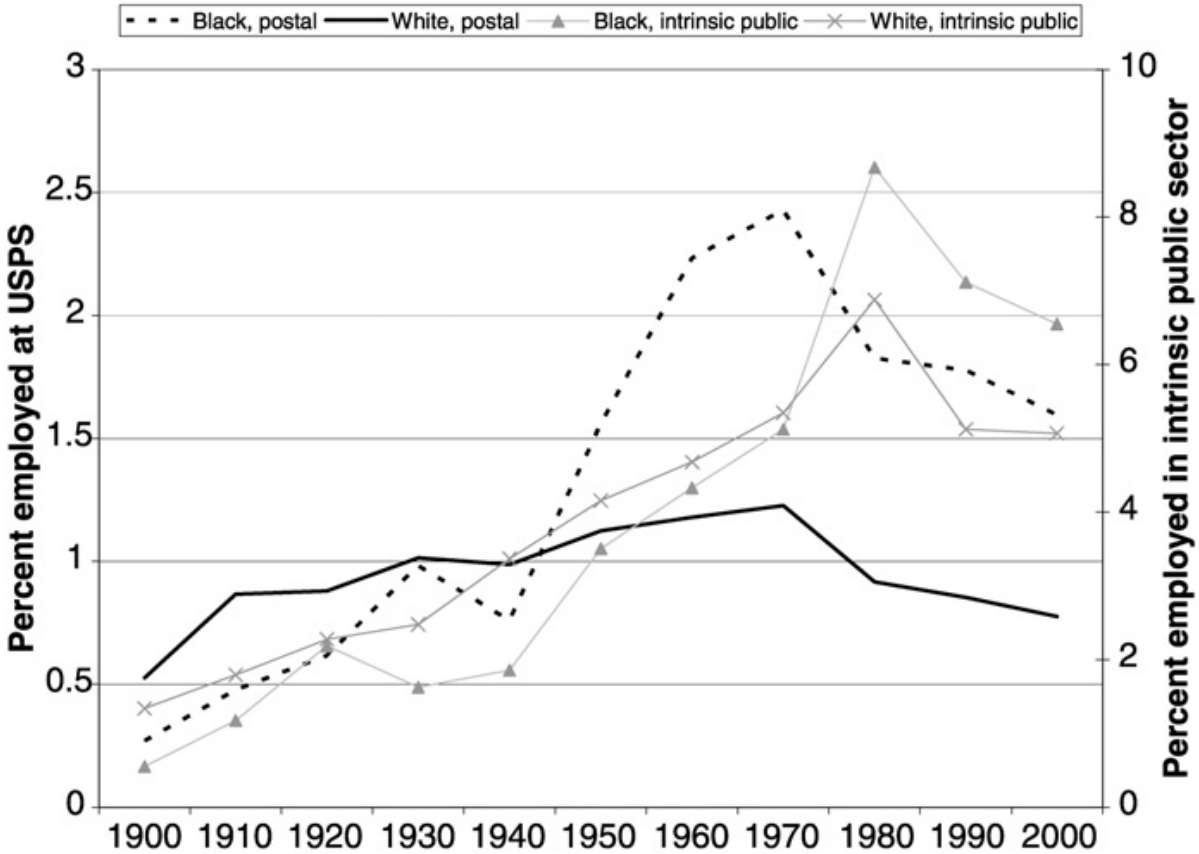
Source: GAO's data analysis.

Suburbanization, Mobility and Inequality

- So suburbanization may have major impacts on children in inner city vs suburban school districts
- This will certainly impact prospects for upward mobility
- Compounding these problems is spatial mismatch related to jobs
- Let's see an interesting take on this by Boustan and Margo (2009)

Suburbanization, Mobility and Inequality

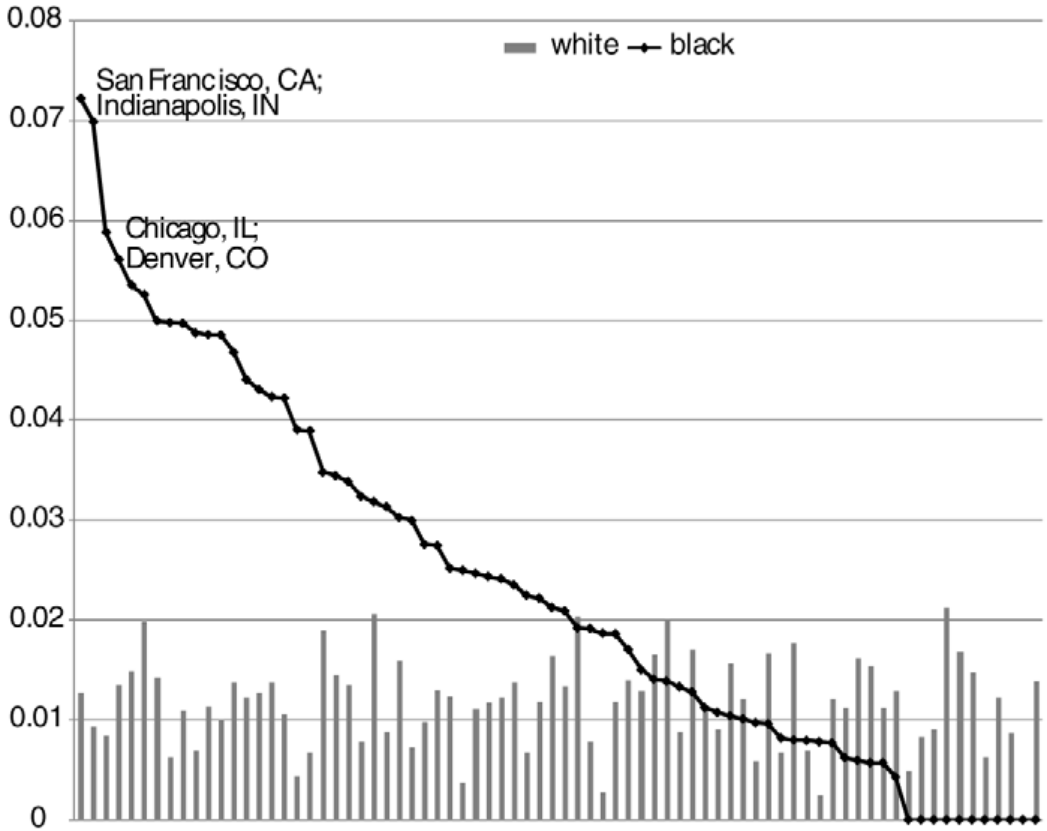
Suburbanization, Mobility and Inequality



Notes: The data underlying this figure is presented in Appendix Table 1 and is described in its notes.

Fig. 1. Employment in the postal service and the intrinsic public sector by race, 1900–2000.

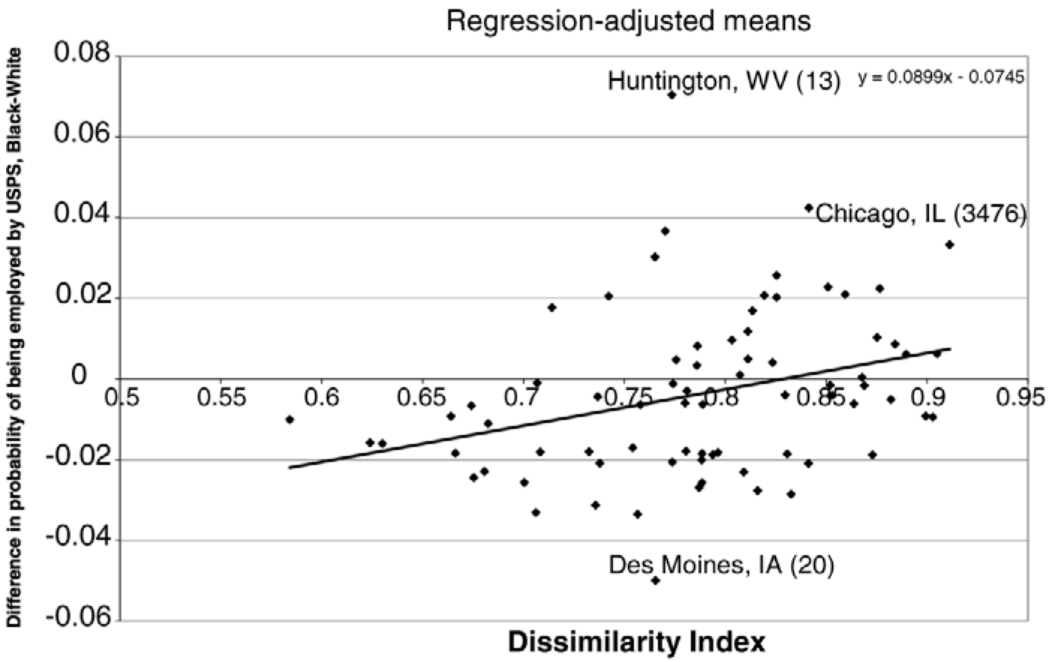
Suburbanization, Mobility and Inequality



Notes: Each dot or bar represents the share of full-time, full-year employees working for the postal service by race. The figure portrays the 76 metropolitan areas that contain at least 50 black observations meeting the sample criteria in 1970. Metropolitan areas are arrayed from highest black postal share to lowest.

Fig. 2. The share of the labor force employed by the postal service by metropolitan area and race, 1970.

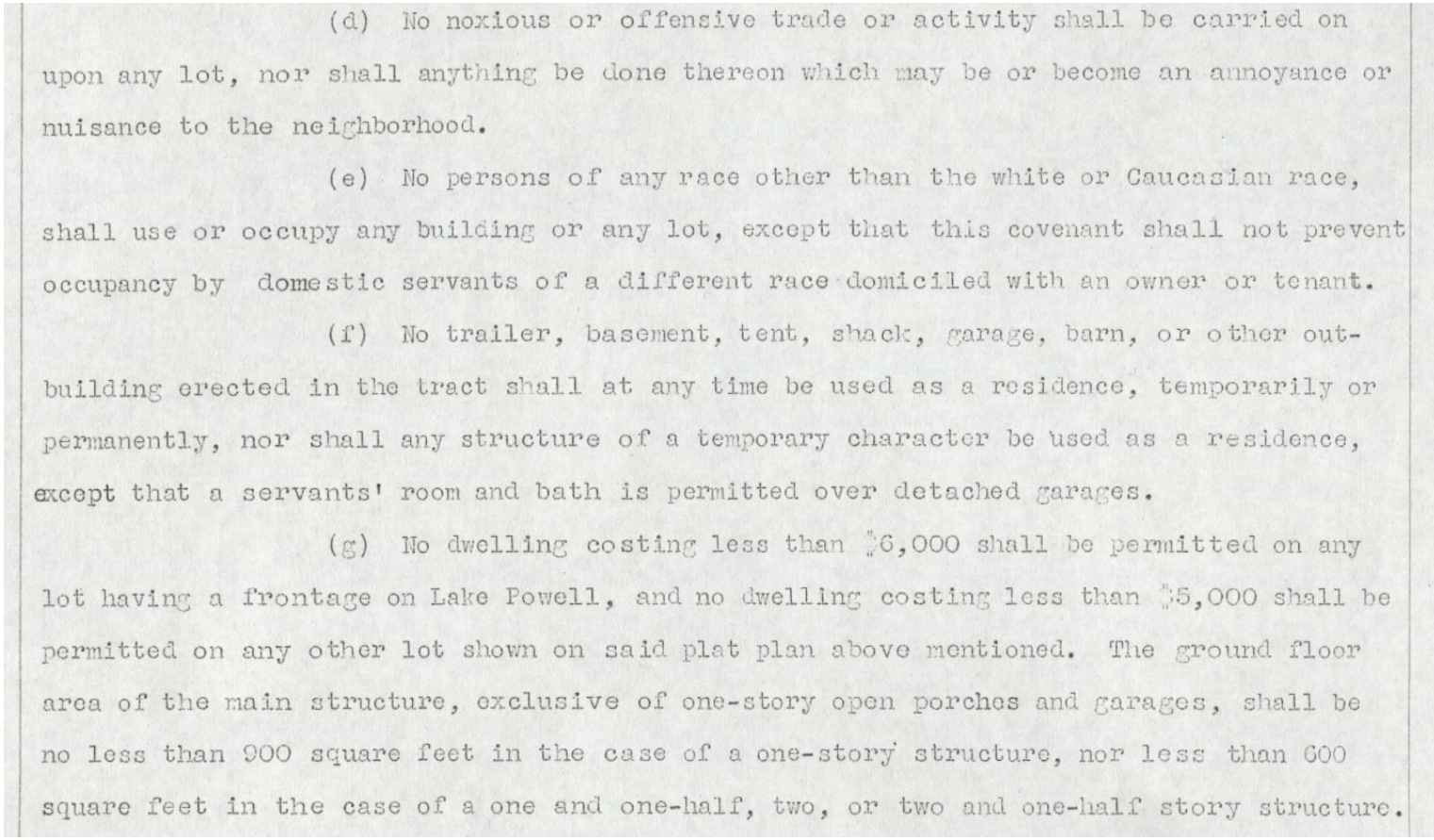
Suburbanization, Mobility and Inequality



Notes: Each dot represents one of the 74 metropolitan areas with available segregation data in 1970. The differential probability of postal employment (black versus white) is regression-adjusted for a series of individual characteristics. Sample restrictions and the set of control variables are listed in the notes to Table 2.

Fig. 3. Racial residential segregation and the differential probability of being employed in the postal service, 1970.

Impediments to Black Mobility



(d) No noxious or offensive trade or activity shall be carried on upon any lot, nor shall anything be done thereon which may be or become an annoyance or nuisance to the neighborhood.

(e) No persons of any race other than the white or Caucasian race, shall use or occupy any building or any lot, except that this covenant shall not prevent occupancy by domestic servants of a different race domiciled with an owner or tenant.

(f) No trailer, basement, tent, shack, garage, barn, or other out-building erected in the tract shall at any time be used as a residence, temporarily or permanently, nor shall any structure of a temporary character be used as a residence, except that a servants' room and bath is permitted over detached garages.

(g) No dwelling costing less than $6,000 shall be permitted on any lot having a frontage on Lake Powell, and no dwelling costing less than $5,000 shall be permitted on any other lot shown on said plat plan above mentioned. The ground floor area of the main structure, exclusive of one-story open porches and garages, shall be no less than 900 square feet in the case of a one-story structure, nor less than 600 square feet in the case of a one and one-half, two, or two and one-half story structure.

The Colony, 1952

Impediments to Black Mobility

Shelley v. Kraemer, 1948

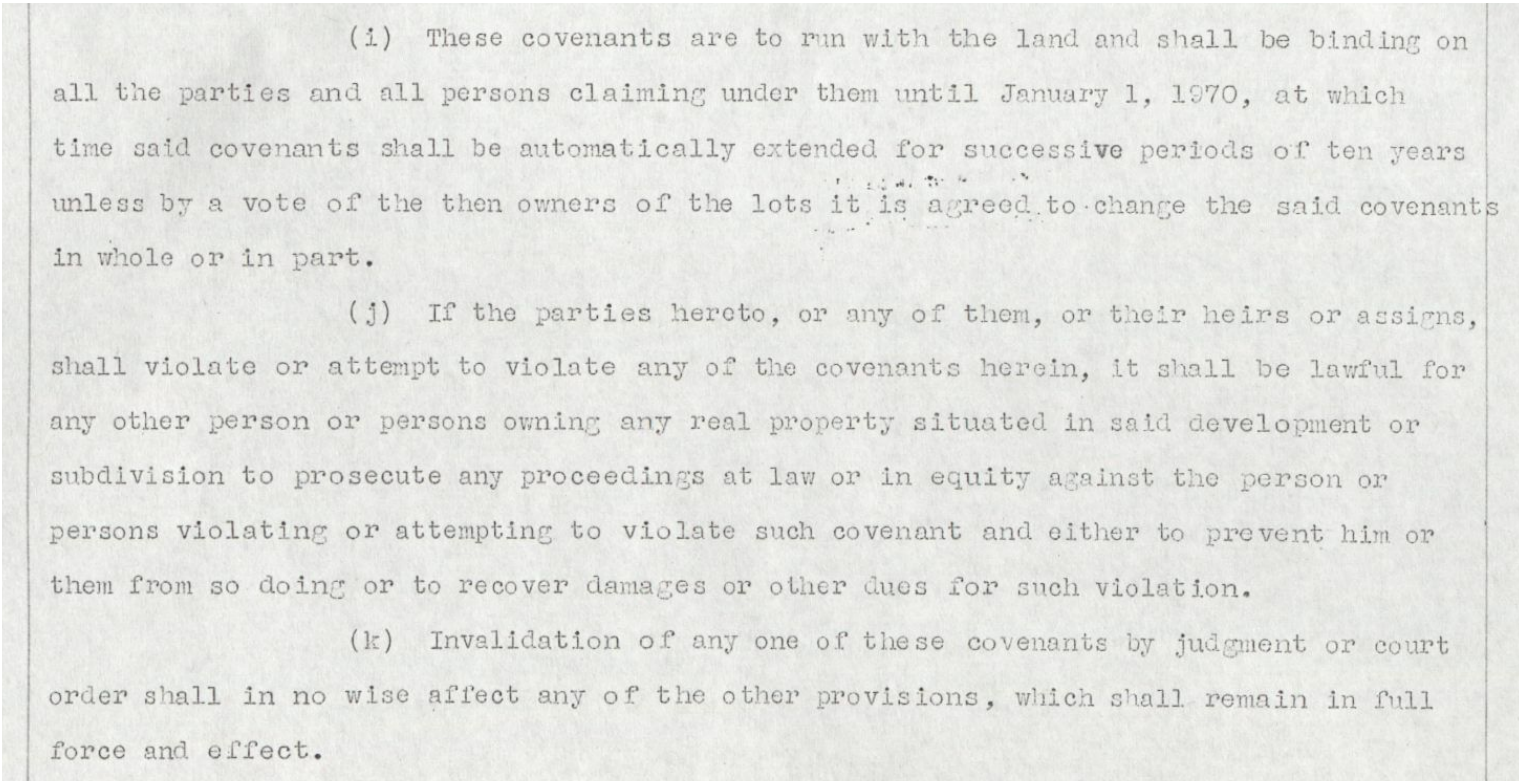
Impediments to Black Mobility

These are not cases, as has been suggested, in which the States have merely abstained from action, leaving private individuals free to impose such discriminations as they see fit. Rather, these are cases in which the States have made available to such individuals the full coercive power of government to deny to petitioners, on the grounds of race or color, the enjoyment of property rights in premises which petitioners are willing and financially able to acquire and which the grantors are willing to sell.

Impediments to Black Mobility

The difference between judicial enforcement and nonenforcement of the restrictive covenants is the difference to petitioners between being denied rights of property available to other members of the community and being accorded full enjoyment of those rights on an equal footing.

Impediments to Black Mobility



(i) These covenants are to run with the land and shall be binding on all the parties and all persons claiming under them until January 1, 1970, at which time said covenants shall be automatically extended for successive periods of ten years unless by a vote of the then owners of the lots it is agreed to change the said covenants in whole or in part.

(j) If the parties hereto, or any of them, or their heirs or assigns, shall violate or attempt to violate any of the covenants herein, it shall be lawful for any other person or persons owning any real property situated in said development or subdivision to prosecute any proceedings at law or in equity against the person or persons violating or attempting to violate such covenant and either to prevent him or them from so doing or to recover damages or other dues for such violation.

(k) Invalidation of any one of these covenants by judgment or court order shall in no wise affect any of the other provisions, which shall remain in full force and effect.

The Colony, 1952

Impediments to Black Mobility

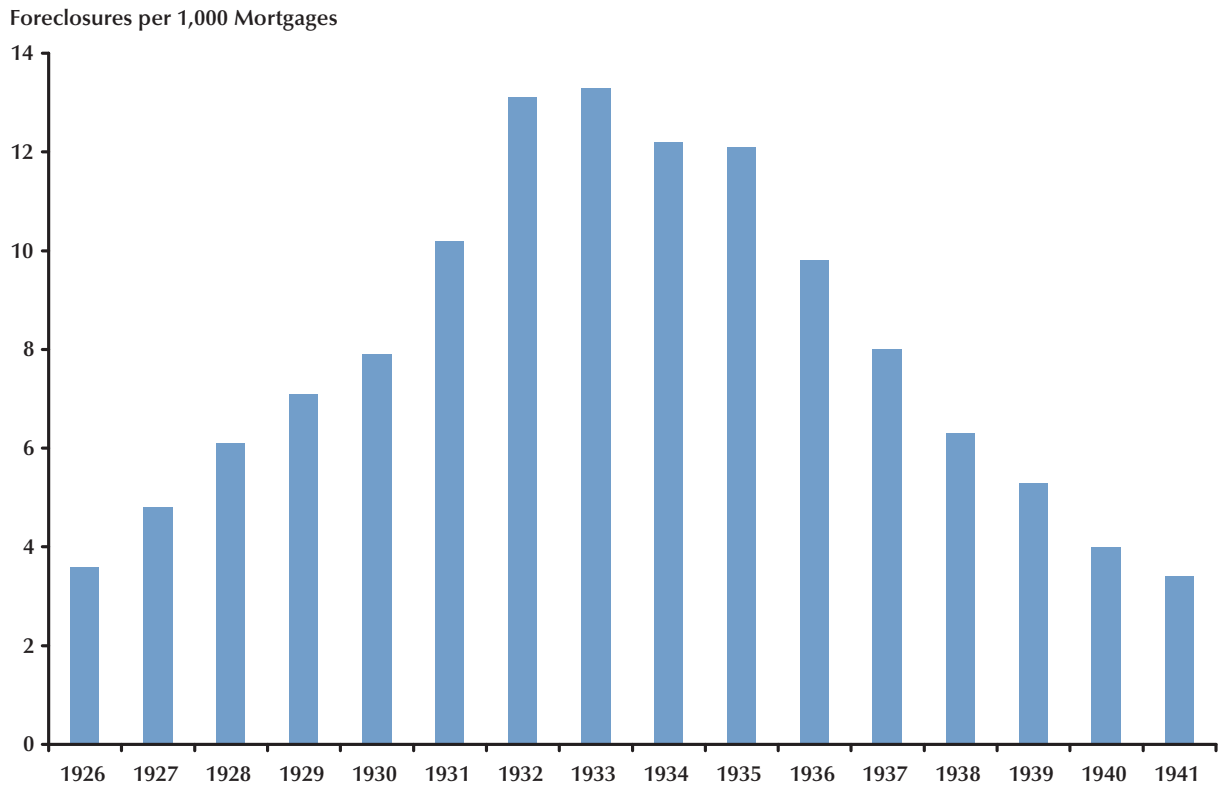
4) The aforesaid Architectural Control Committee shall have full, absolute and complete discretion to approve or disapprove proposed buildings and improvements on any of said lots and in the exercise of its discretion said Committee shall not be bound to approve any proposed buildings and improvements solely because such comply with the other restrictions and covenants herein contained or are equal in cost or value to buildings and improvements on other lots. Said Committee shall also have the further discretion to approve any proposed buildings or improvements on any of said lots even though said improvements do not meet the requirements of the other provisions of this instrument, if, in the absolute discretion of said Committee, such variations are not harmful to the value of the adjoining property. In no event, however, shall said Committee be empowered to permit any use of any of said lots other than as provided in Paragraph 1 above.

5) The ground floor area of any dwelling permitted on any of said lots, exclusive of one-story porches and garages, shall be not less than fourteen hundred (1,400) square feet for a one-story dwelling, nor less than one thousand (1,000) square feet for a one and one-half story, two-story or two-and-one-half story dwelling.

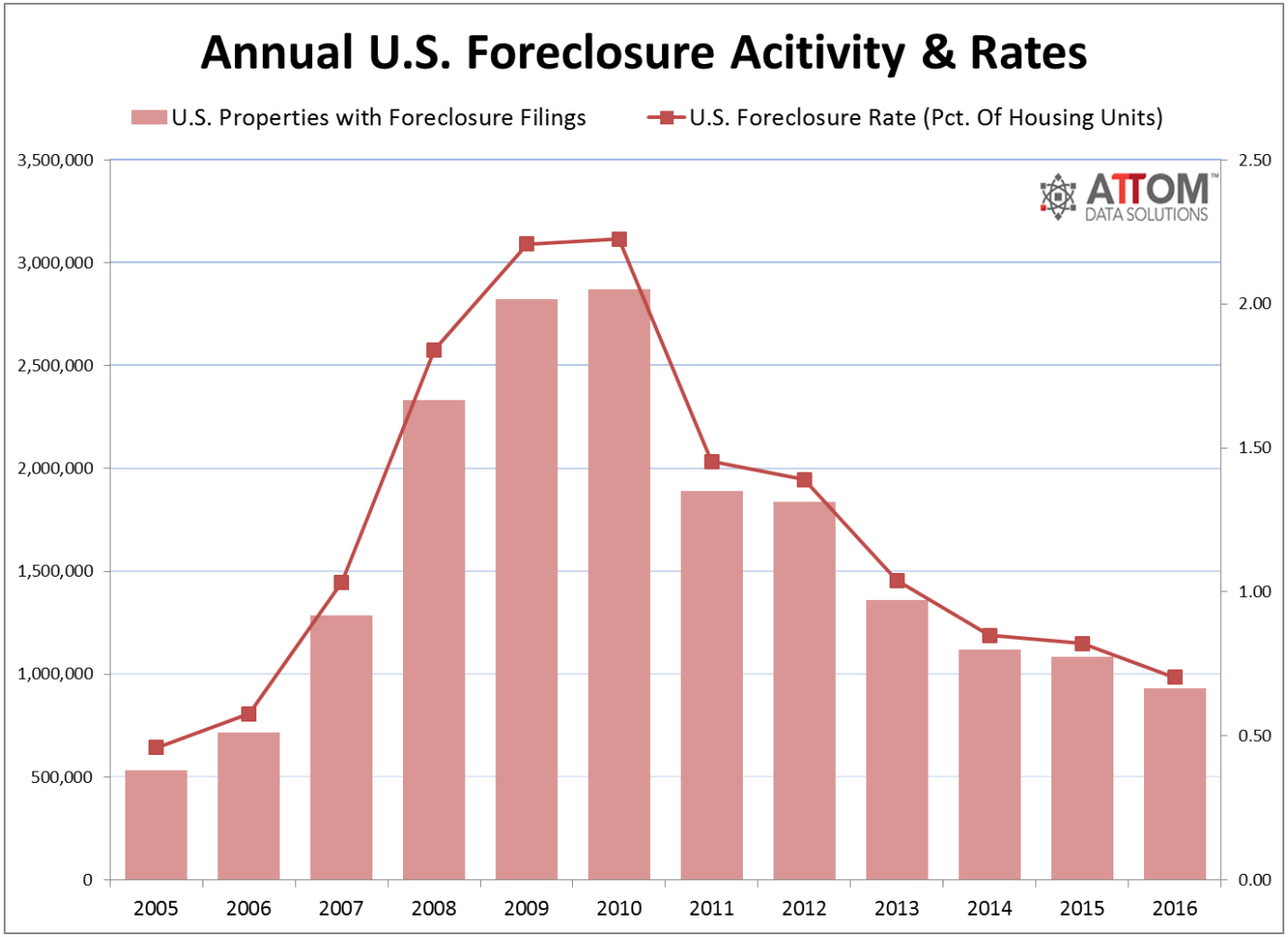
Kingspoint, 1964

The Great Depression and HOLC

Nonfarm Real Estate Mortgage Foreclosure Rate, 1926-41



The Great Depression and HOLC



The Great Depression and HOLC

- With the onset of the Depression, the US faced a major housing crisis
- The federal government stepped in to shore up the market
- This gives us the Federal Housing Administration and a bunch of changes to the mortgage market
- Of interest here is the creation of the Home Owners' Loan Corporation (HOLC)

The Great Depression and HOLC

- HOLC initially issues bonds to buy and refinance mortgages, refinancing 1 in 10 non-farm mortgages
- Between 1935 and 1940, HOLC attempted to introduce a systematic appraisal process based on neighborhood-characteristics when evaluating individual properties
- In the process, HOLC created 'security maps' for 239 cities
- Here are two nice sites to explore these maps in Virginia:
  - Redlining Richmond
  - Redlining in Virginia (for Roanoke, Norfolk and Richmond)

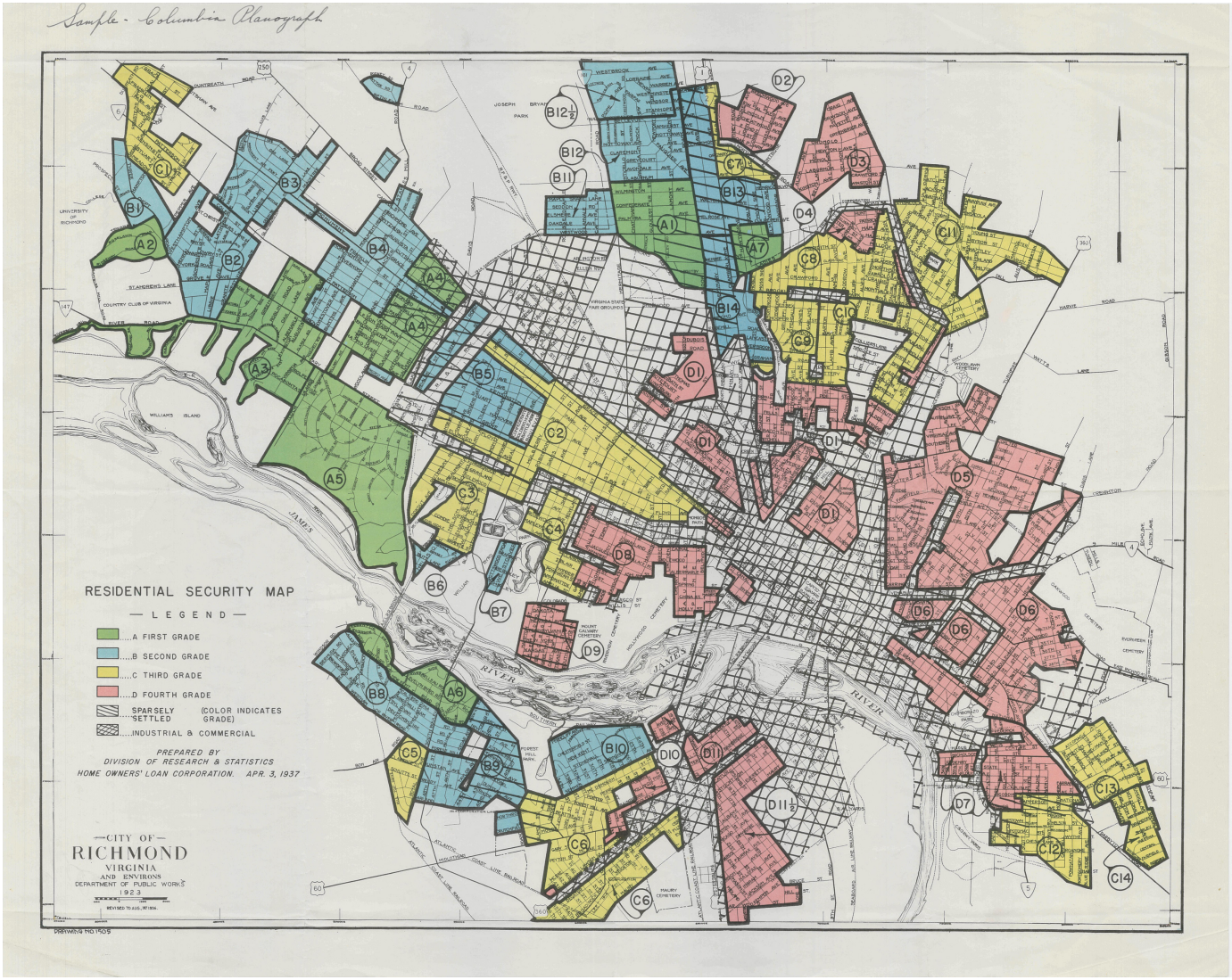
The Impact of HOLC Security Maps

- These HOLC maps divided neighborhoods up into different quality grades, A through D
- These grades are described in the following way:
  - Grade A: "homogenous," in demand during "good times or bad"
  - Grade B: "like a 1935 automobile - still good, but not what the people are buying today who can afford a new one"
  - Grade C: becoming obsolete, "expiring restrictions or lack of them" and "infiltration of a lower grade population"
  - Grade D: "those neighborhoods in which the things that are now taking place in the C neighborhoods, have already happened"

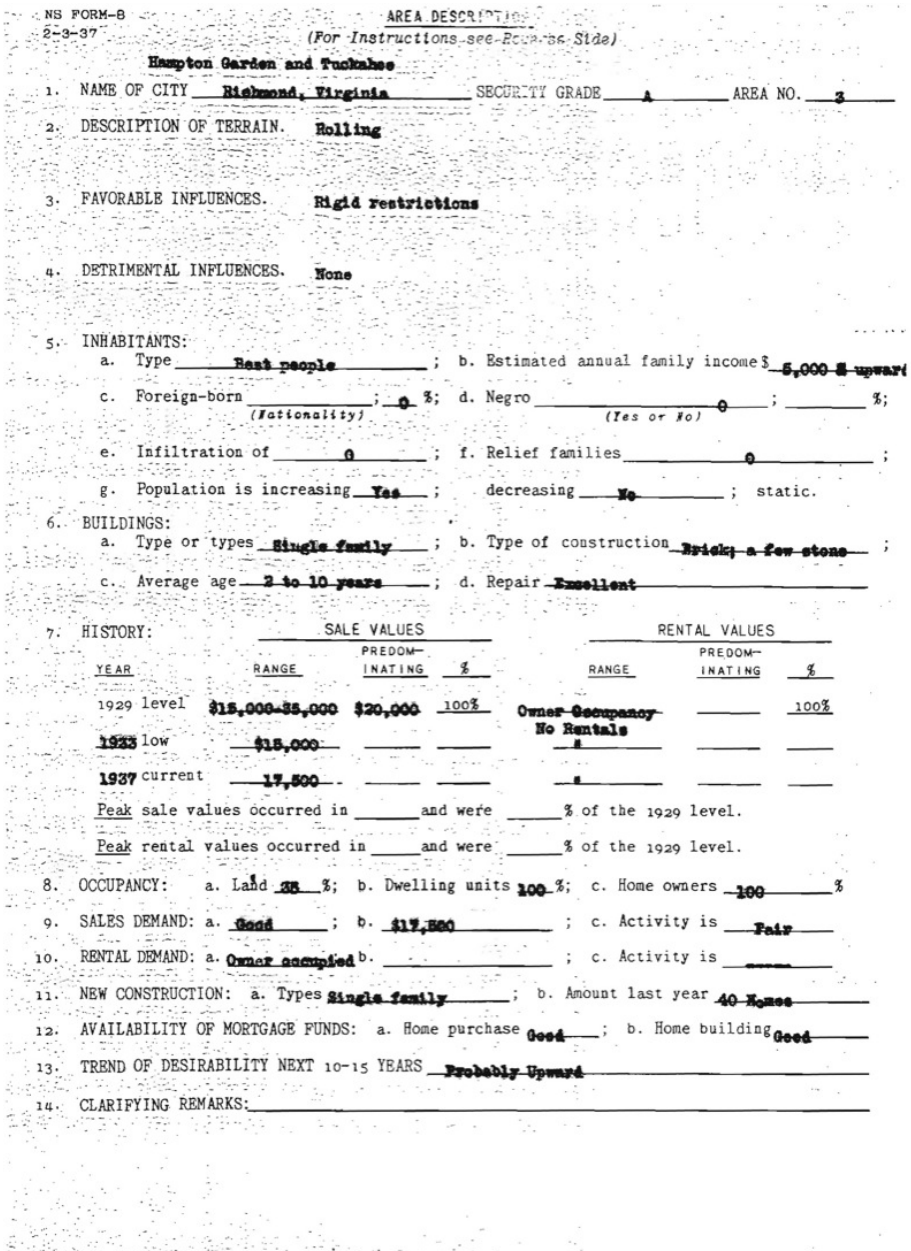
The Impact of HOLC Security Maps

- The worst neighborhoods, the D neighborhoods, were shaded red on the security maps
- This is the origin of 'redlining'
- A major question in the social sciences literature (and the popular press) is whether these HOLC maps led to discrimination against black borrowers, furthering black-white gaps in outcomes
- Let's start by taking a look at our local maps

Richmond's Redlining



Richmond's Redlining



NS FORM-8
2-3-37

AREA DESCRIPTION
(For Instructions see Reverse Side)

Hampton Garden and Tuckahoe

1. NAME OF CITY Richmond, Virginia SECURITY GRADE A AREA NO. 3

2. DESCRIPTION OF TERRAIN. Rolling

3. FAVORABLE INFLUENCES. Rigid restrictions

4. DETRIMENTAL INFLUENCES. None

5. INHABITANTS:
   a. Type Best people ; b. Estimated annual family income $ 5,000 & upward
   c. Foreign-born (Nationality) ; 0 %; d. Negro 0 (Yes or No) ; %;
   e. Infiltration of 0 ; f. Relief families 0 ;
   g. Population is increasing Yes ; decreasing No ; static.

6. BUILDINGS:
   a. Type or types Single family ; b. Type of construction Brick; a few stone ;
   c. Average age 2 to 10 years ; d. Repair Excellent

7. HISTORY:

YEAR	SALE VALUES RANGE	SALE VALUES PREDOMINATING	SALE VALUES %	RENTAL VALUES RANGE	RENTAL VALUES PREDOMINATING	RENTAL VALUES %
1929 level	$15,000-35,000	$20,000	100%	Owner Occupancy No Rentals		100%
1933 low	$15,000					
1937 current	17,500					

Peak sale values occurred in _____ and were _____ % of the 1929 level.

Peak rental values occurred in _____ and were _____ % of the 1929 level.

8. OCCUPANCY: a. Land 35 %; b. Dwelling units 100 %; c. Home owners 100 %

9. SALES DEMAND: a. Good ; b. $17,500 ; c. Activity is Fair

10. RENTAL DEMAND: a. Owner occupied b. _____ ; c. Activity is _____

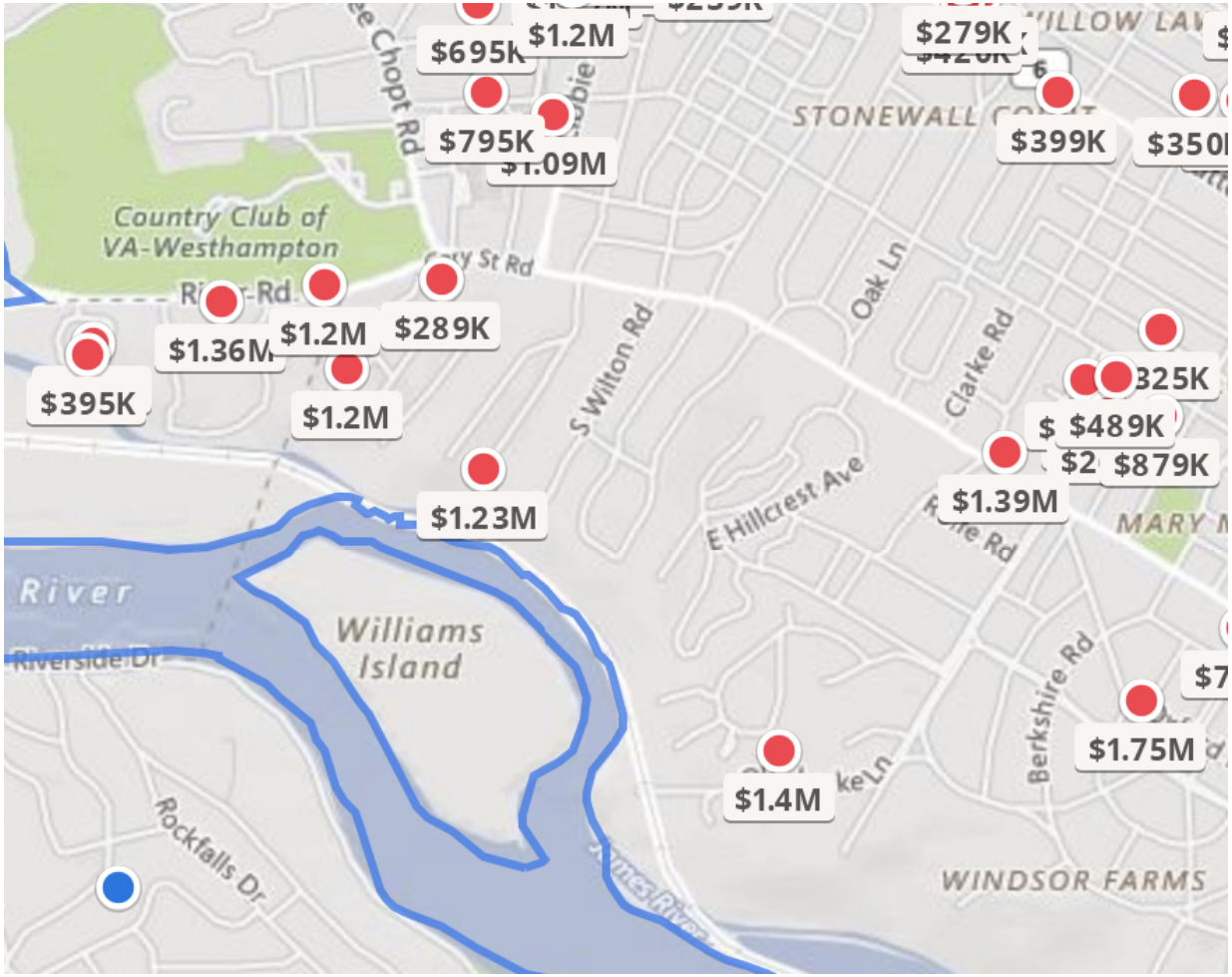
11. NEW CONSTRUCTION: a. Types Single family ; b. Amount last year 40 Homes

12. AVAILABILITY OF MORTGAGE FUNDS: a. Home purchase Good ; b. Home building Good

13. TREND OF DESIRABILITY NEXT 10-15 YEARS Probably Upward

14. CLARIFYING REMARKS: _____

Richmond's Redlining



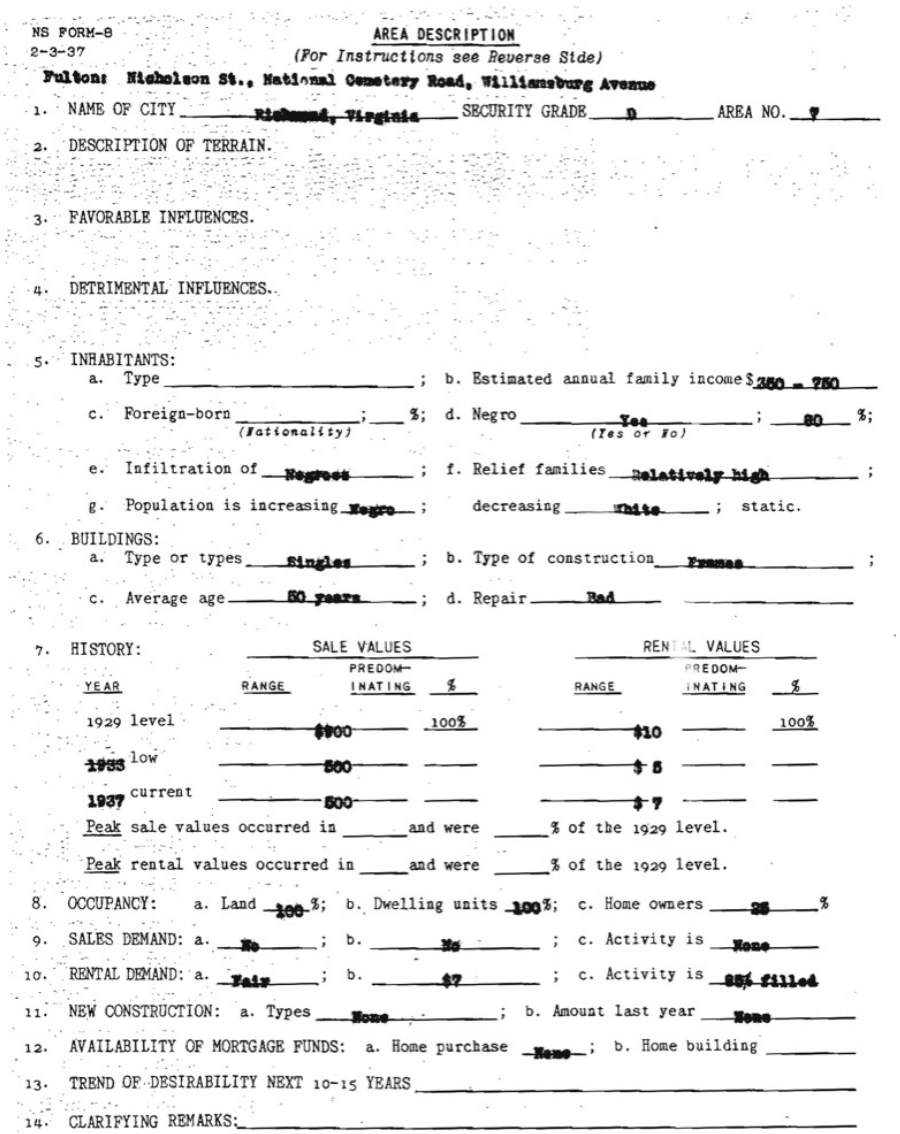
Richmond's Redlining

Neighborhood: Wilton

Nearby Schools in Richmond

GREATSCHOOLS RATING		GRADES	DISTANCE
8 out of 10	Mary Munford Elementary	PK-5	1.4 mi
3 out of 10	Albert Hill Middle	6-8	2.5 mi
2 out of 10	Thomas Jefferson High	9-12	2.2 mi

Richmond's Redlining



NS FORM-8
2-3-37

AREA DESCRIPTION

(For Instructions see Reverse Side)

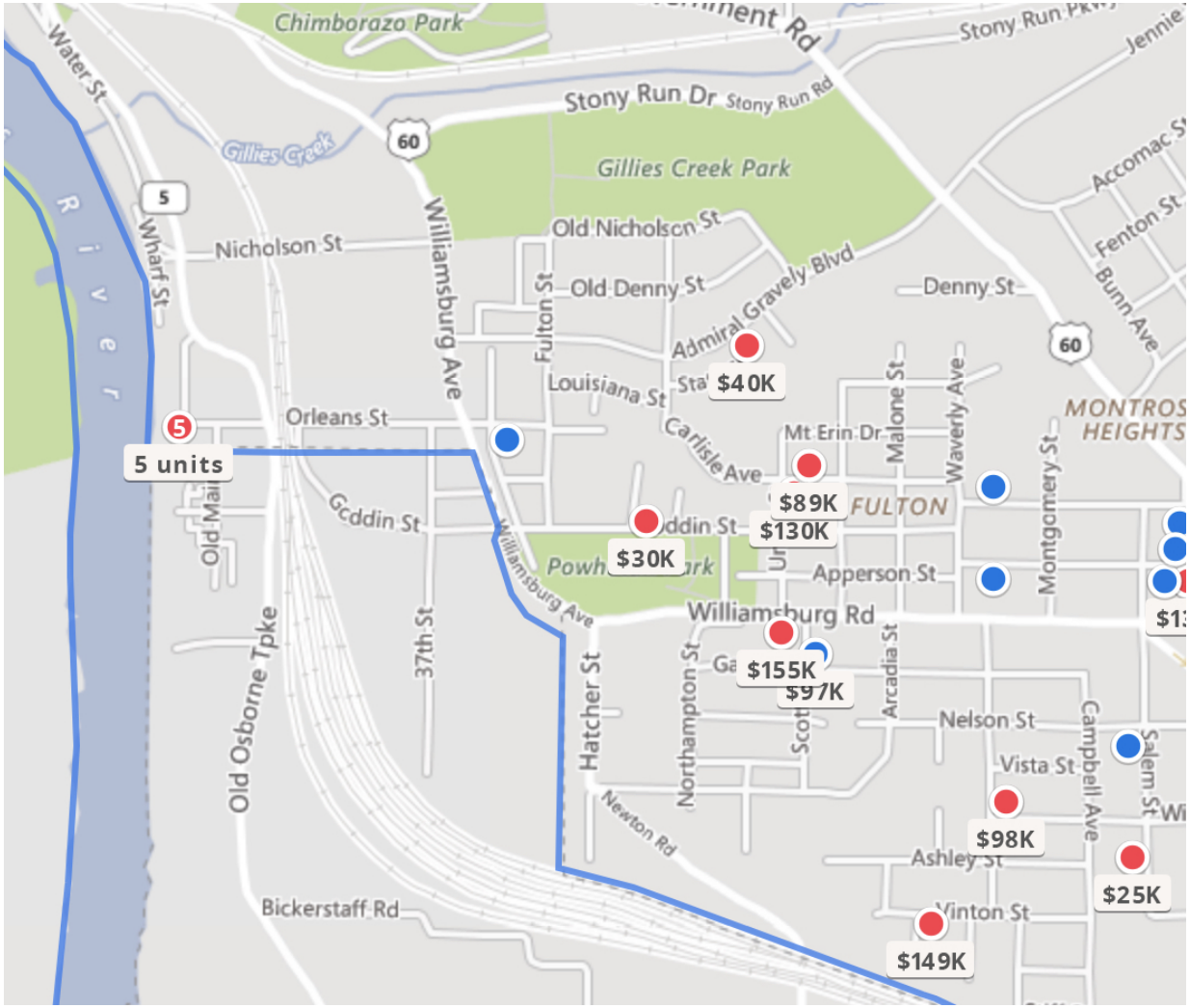
Fulton: Nicholson St., National Cemetery Road, Williamsburg Avenue

1. NAME OF CITY **Richmond, Virginia** SECURITY GRADE **D** AREA NO. **7**
2. DESCRIPTION OF TERRAIN.
3. FAVORABLE INFLUENCES.
4. DETRIMENTAL INFLUENCES.
5. INHABITANTS:
   a. Type ; b. Estimated annual family income $**250 - 750**
   c. Foreign-born (Nationality); %; d. Negro **Yes** (Yes or No); **80** %;
   e. Infiltration of **Negroes**; f. Relief families **Relatively high**;
   g. Population is increasing **Negro**; decreasing **White**; static.
6. BUILDINGS:
   a. Type or types **Singles**; b. Type of construction **Frames**;
   c. Average age **50 years**; d. Repair **Bad**
7. HISTORY:

	SALE VALUES			RENTAL VALUES		
YEAR	RANGE	PREDOMINATING	%	RANGE	PREDOMINATING	%
1929 level	$900		100%	$10		100%
~~1933~~ low	500			$ 5		
1937 current	500			$ 7		

   Peak sale values occurred in ____ and were ____ % of the 1929 level.
   Peak rental values occurred in ____ and were ____ % of the 1929 level.
8. OCCUPANCY: a. Land ~~100~~ %; b. Dwelling units **100** %; c. Home owners **25** %
9. SALES DEMAND: a. **No**; b. **No**; c. Activity is **None**
10. RENTAL DEMAND: a. **Fair**; b. **$7**; c. Activity is **85% filled**
11. NEW CONSTRUCTION: a. Types **None**; b. Amount last year **None**
12. AVAILABILITY OF MORTGAGE FUNDS: a. Home purchase **None**; b. Home building
13. TREND OF DESIRABILITY NEXT 10-15 YEARS
14. CLARIFYING REMARKS:

Richmond's Redlining



Richmond's Redlining

Neighborhood: Fulton

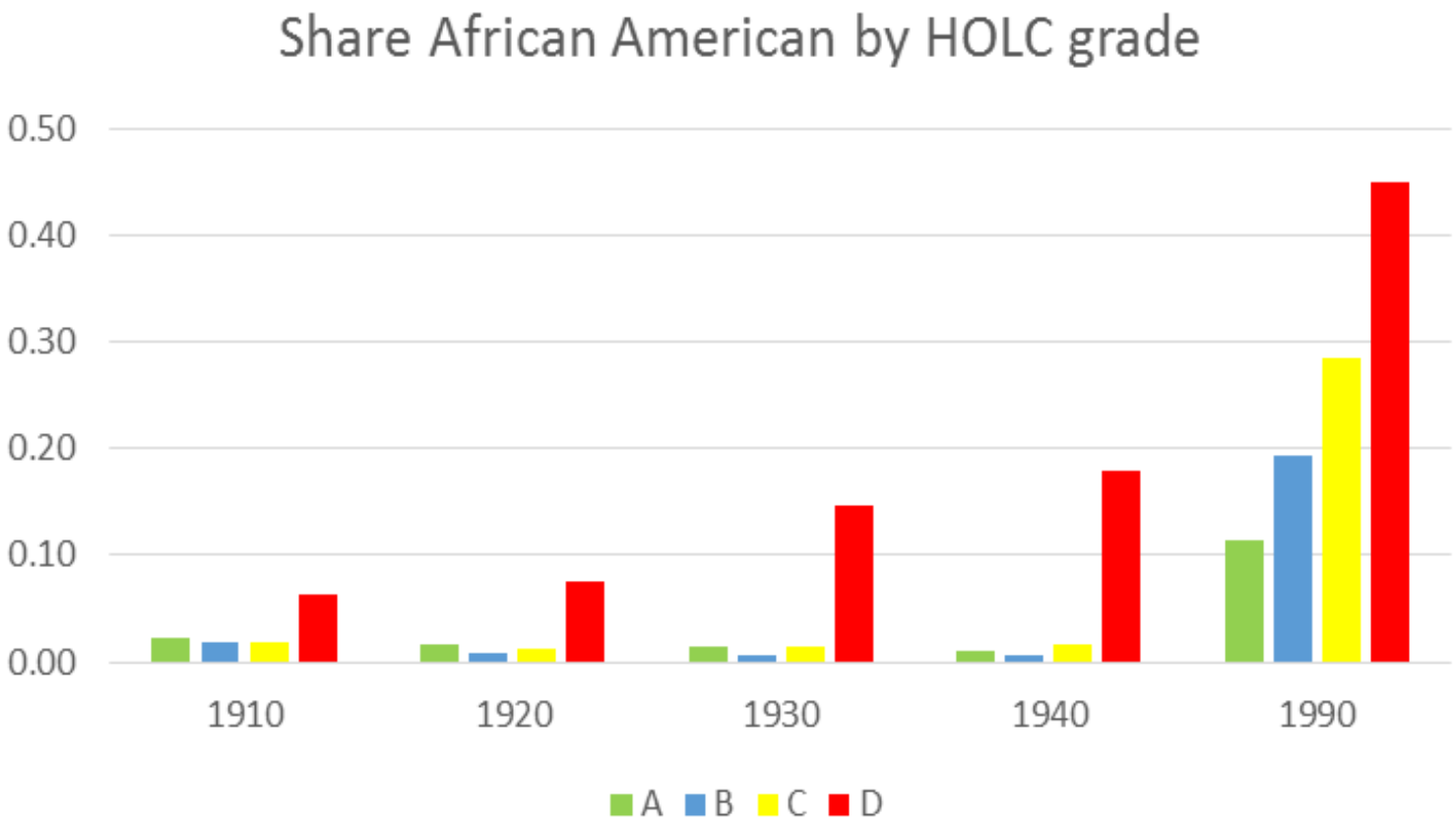
Nearby Schools in Richmond

GREATSCHOOLS RATING		GRADES	DISTANCE
2 out of 10	Chimborazo Elementary	PK-5	1.4 mi
1 out of 10	Martin Luther King Jr. Middle	6-8	2.3 mi
1 out of 10	Armstrong High	9-12	2.6 mi

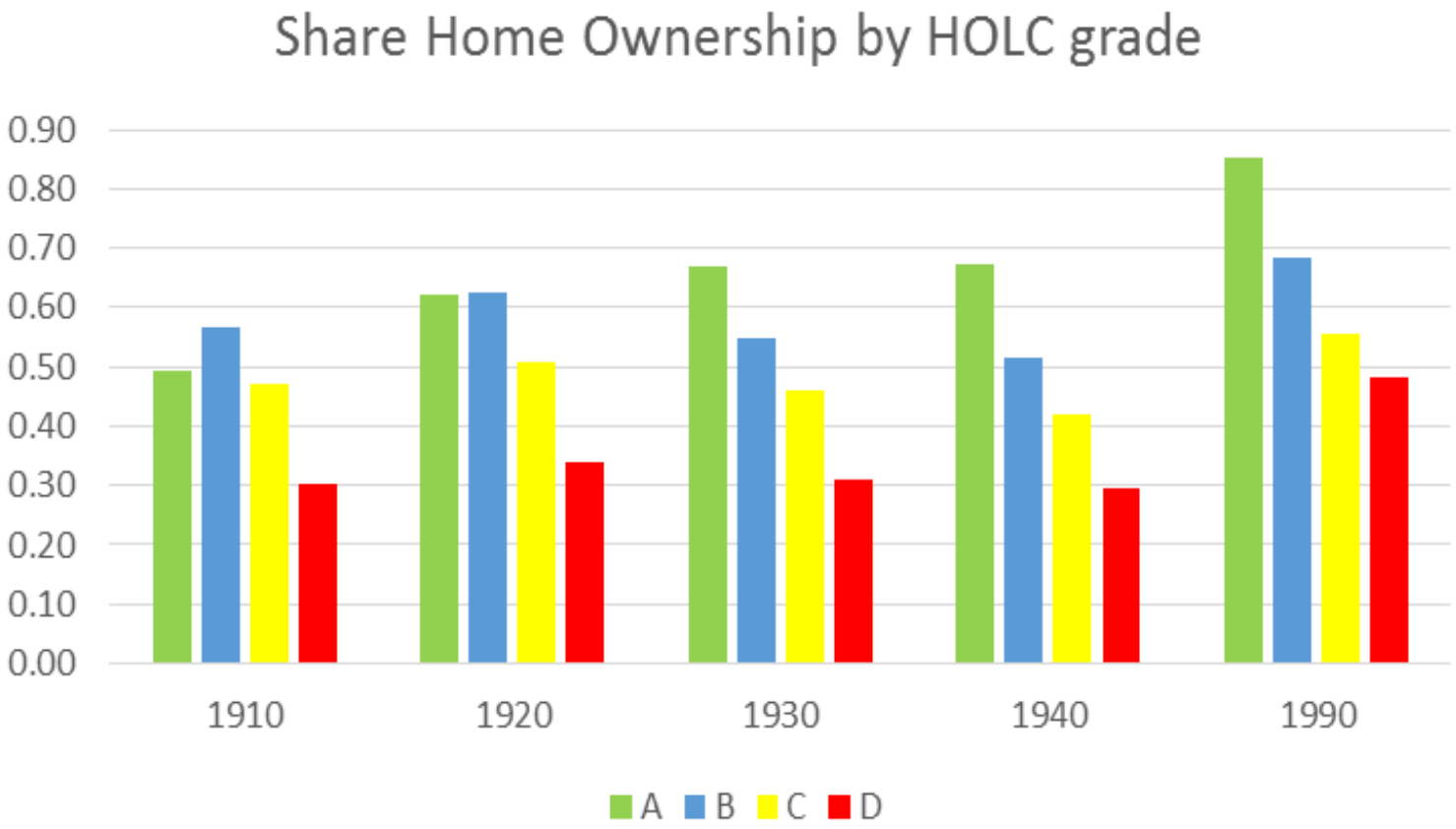
The Effects of Redlining

- To examine the effects of redlining, we'll take a look at Aaronson, Hartley and Mazumder's "The Effects of the 1930s HOLC 'Redlining Maps'""
- They are going to geocode the security maps and merge them with census and credit bureau data
- The main question is whether residents on a lower graded side of a boundary have worse outcomes than residents on the higher graded side of a boundary

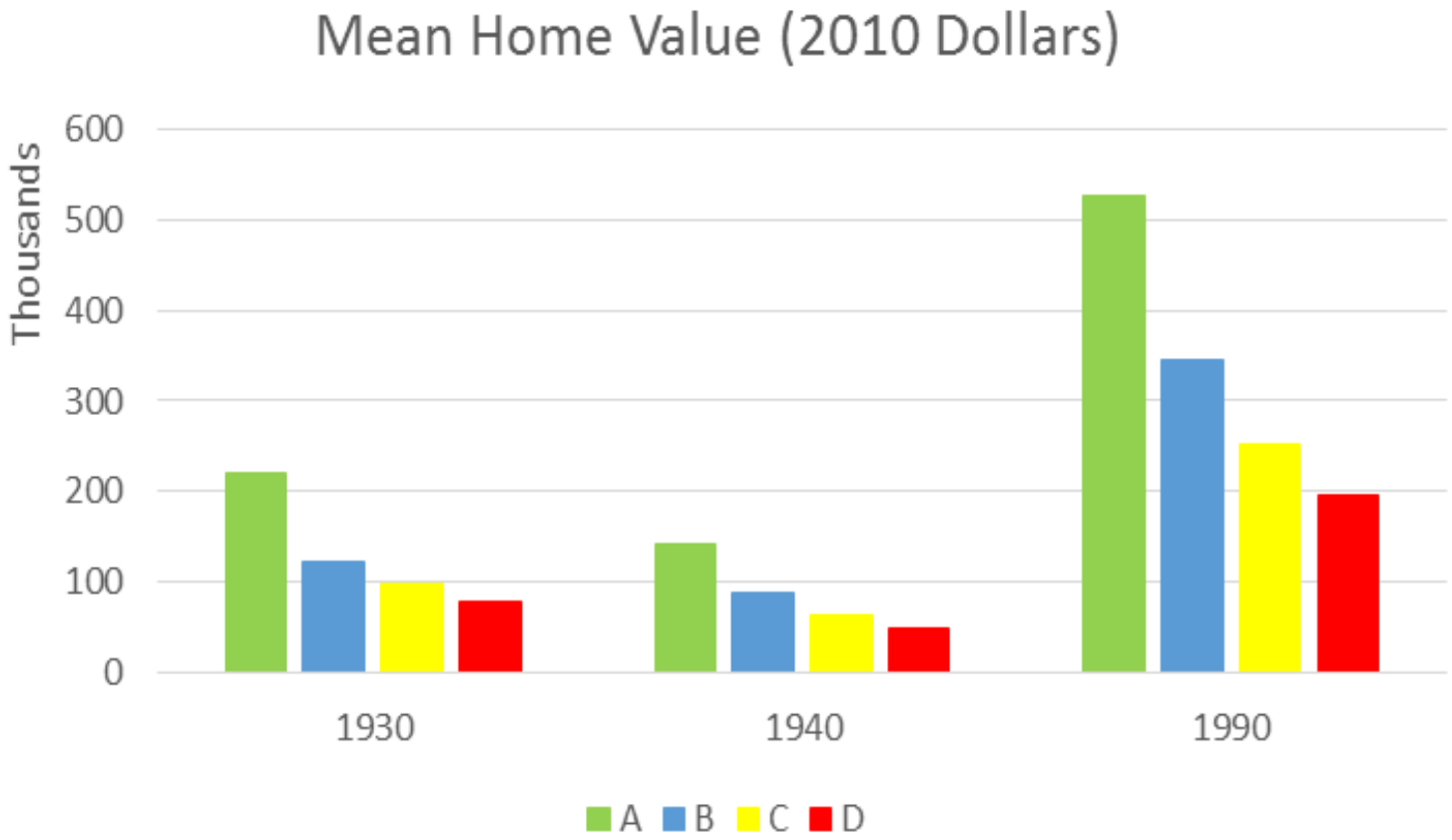
The Effects of Redlining



The Effects of Redlining



The Effects of Redlining



The Effects of Redlining

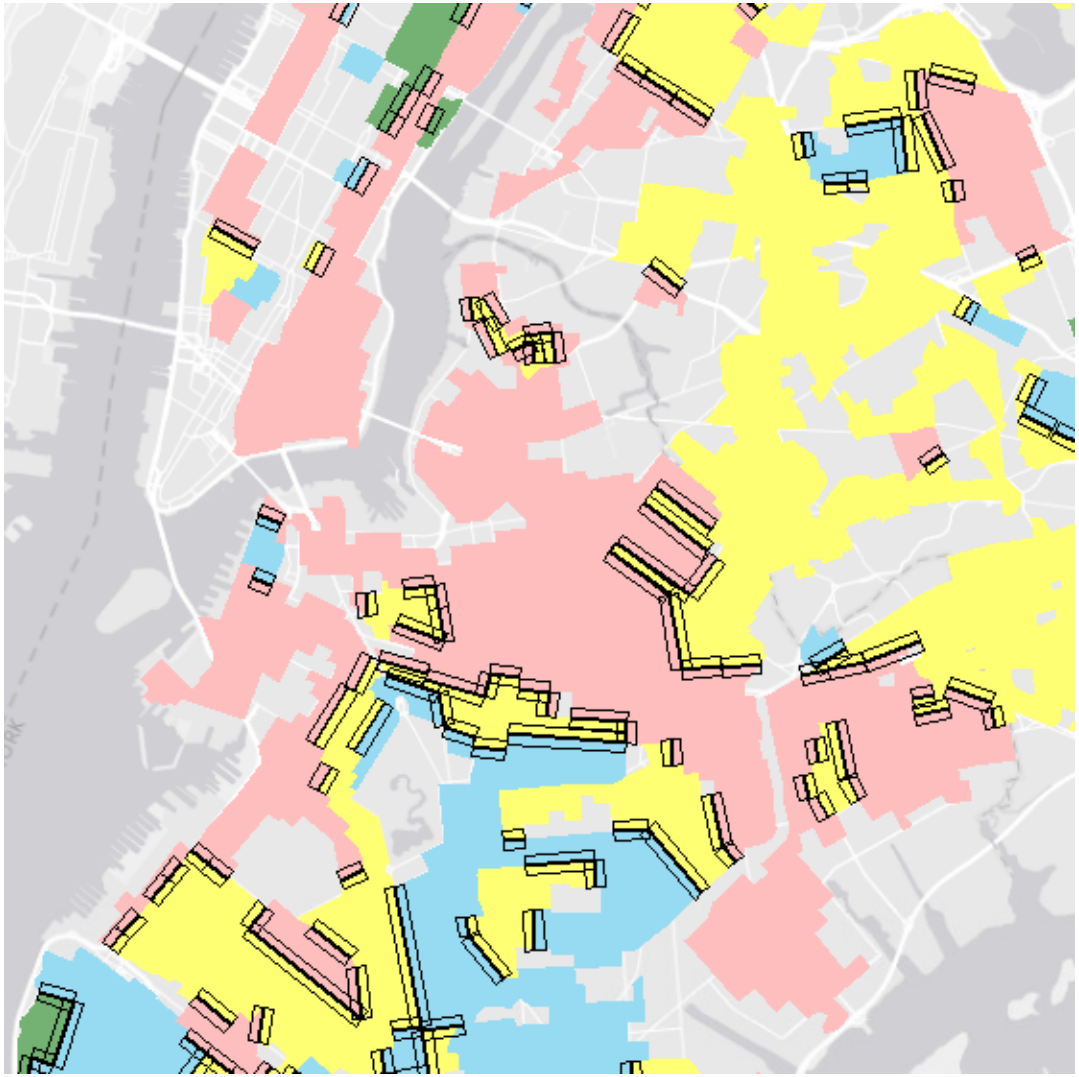
Table 2: Assessing HOLC Grading Criteria

	(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)
	Ordered Logit			Probit					
Coeficients	ABCD	ABCD		DC	DC	CB	CB	BA	BA
Share AA	2.824	1.510		2.742	2.093	-2.857	-3.531	-5.514	-10.147
	(1.233)	(1.521)		(0.870)	(1.125)	(1.146)	(1.398)	(1.262)	(2.283)
Share Home Ownership	-6.600	-7.590		-3.353	-4.523	-3.966	-4.818	-3.786	-3.857
	(0.594)	(0.737)		(0.428)	(0.529)	(0.485)	(0.593)	(0.565)	(0.753)
Log House Value	-3.057	-3.319		-1.570	-1.936	-1.474	-2.005	-1.598	-1.676
	(0.225)	(0.268)		(0.239)	(0.218)	(0.178)	(0.189)	(0.195)	(0.281)
Log Rent	-0.154	-0.163		-0.095	-0.071	-0.118	-0.145	0.064	0.035
	(0.080)	(0.091)		(0.060)	(0.072)	(0.061)	(0.075)	(0.073)	(0.092)
Occscore	-4.318	-6.012		-0.514	-2.231	-1.593	-3.875	-3.004	-2.971
	(1.166)	(1.246)		(1.091)	(1.177)	(0.968)	(1.215)	(1.055)	(1.258)
Employment	-0.139	-0.148		-0.143	-0.203	-0.132	-0.170	0.030	0.051
	(0.031)	(0.038)		(0.041)	(0.049)	(0.022)	(0.037)	(0.023)	(0.030)
Radio	-6.665	-7.163		-3.812	-2.894	-3.809	-4.260	-1.336	-2.214
	(0.753)	(0.910)		(0.530)	(0.576)	(0.622)	(0.765)	(0.766)	(0.930)
Literacy	-7.825	-10.676		-7.803	-10.726	-0.649	-0.888	-4.699	-4.003
	(2.349)	(2.698)		(1.802)	(2.331)	(3.618)	(3.596)	(3.834)	(6.512)
School Attendance	4.198	6.099		1.059	1.329	2.210	4.537	1.783	2.645
	(0.811)	(1.192)		(0.729)	(0.947)	(0.661)	(1.014)	(0.721)	(1.202)
Share Foreign Born	-0.332	-1.194		-2.548	-3.139	0.466	0.172	0.681	0.609
	(1.373)	(1.757)		(0.824)	(0.968)	(1.023)	(1.139)	(1.298)	(1.832)
Includes changes*	--	X		--	X	--	X	--	X
Cities	147	146		138	137	144	142	120	102
N	4717	3928		3146	2704	3045	2506	1479	1088
Psuedo R^2	0.482	0.511		0.498	0.538	0.442	0.502	0.348	0.399

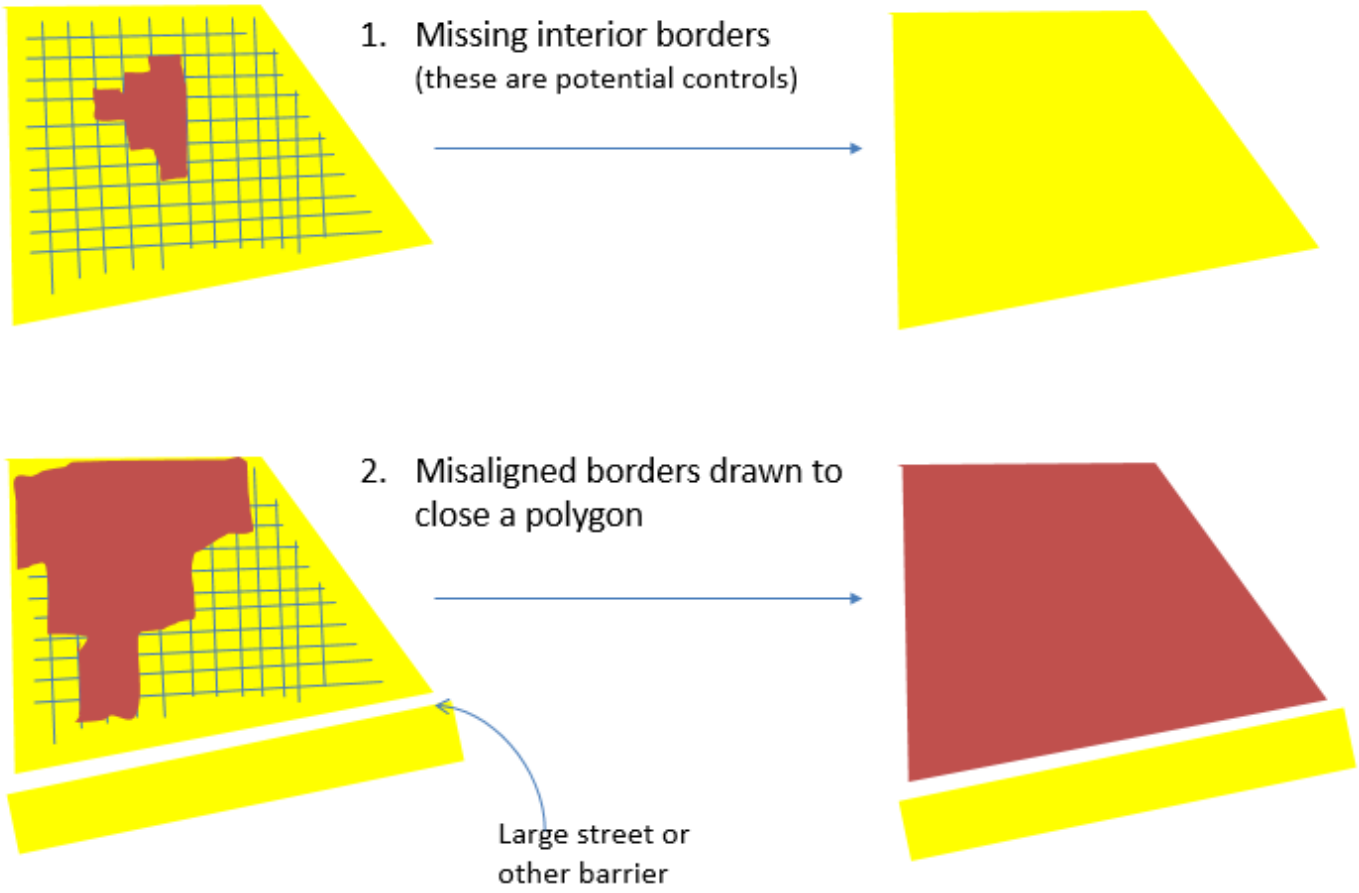
The Effects of Redlining

- But there is a big question of identification
- Are any observed differences caused by the boundary being drawn?
- Or are differences being driven by the underlying variables that led to the boundary getting drawn in the first place?
- Aaronson, Mazumder and Hartley are going to take a couple of approaches to try to establish causality

The Effects of Redlining



The Effects of Redlining



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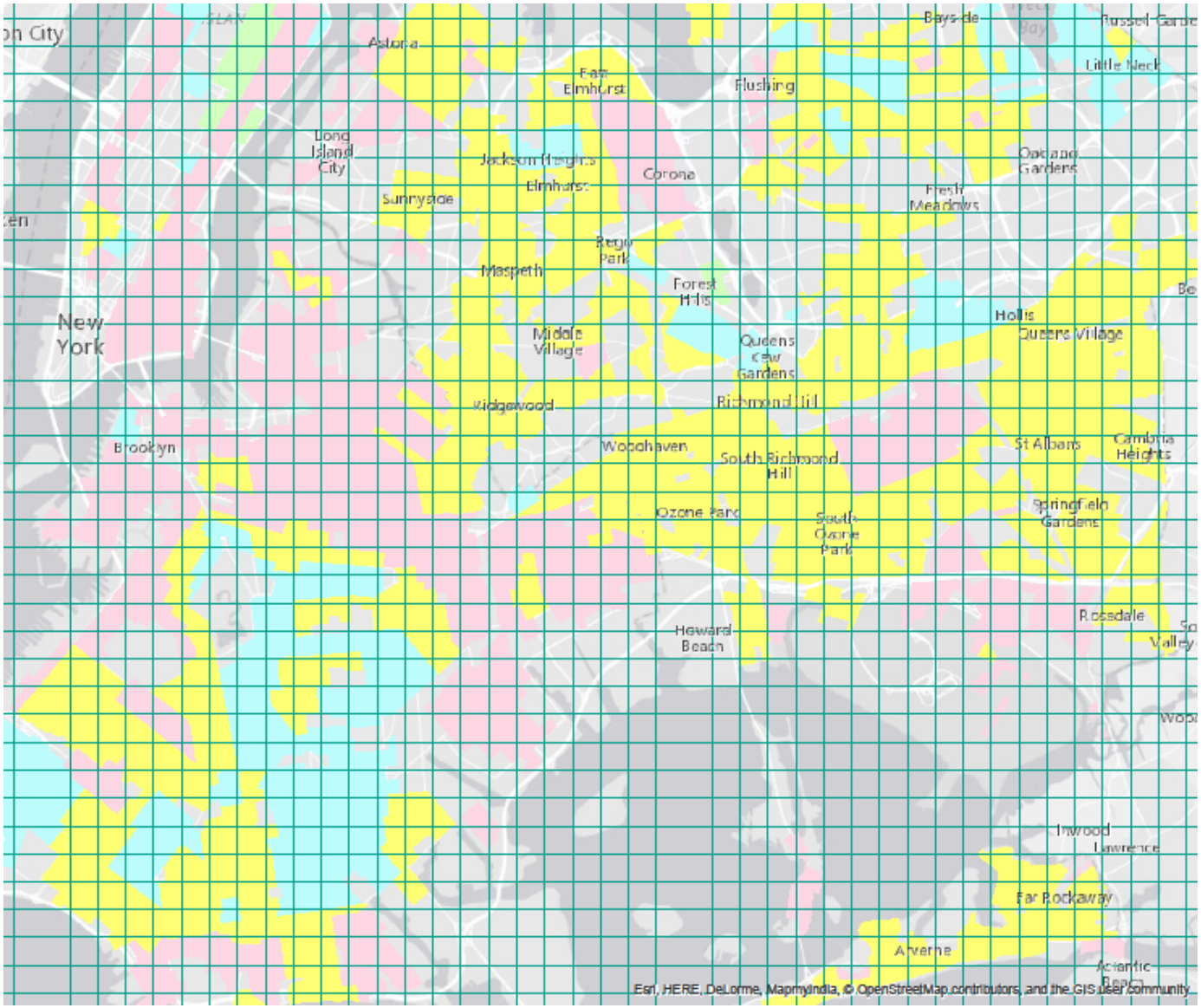

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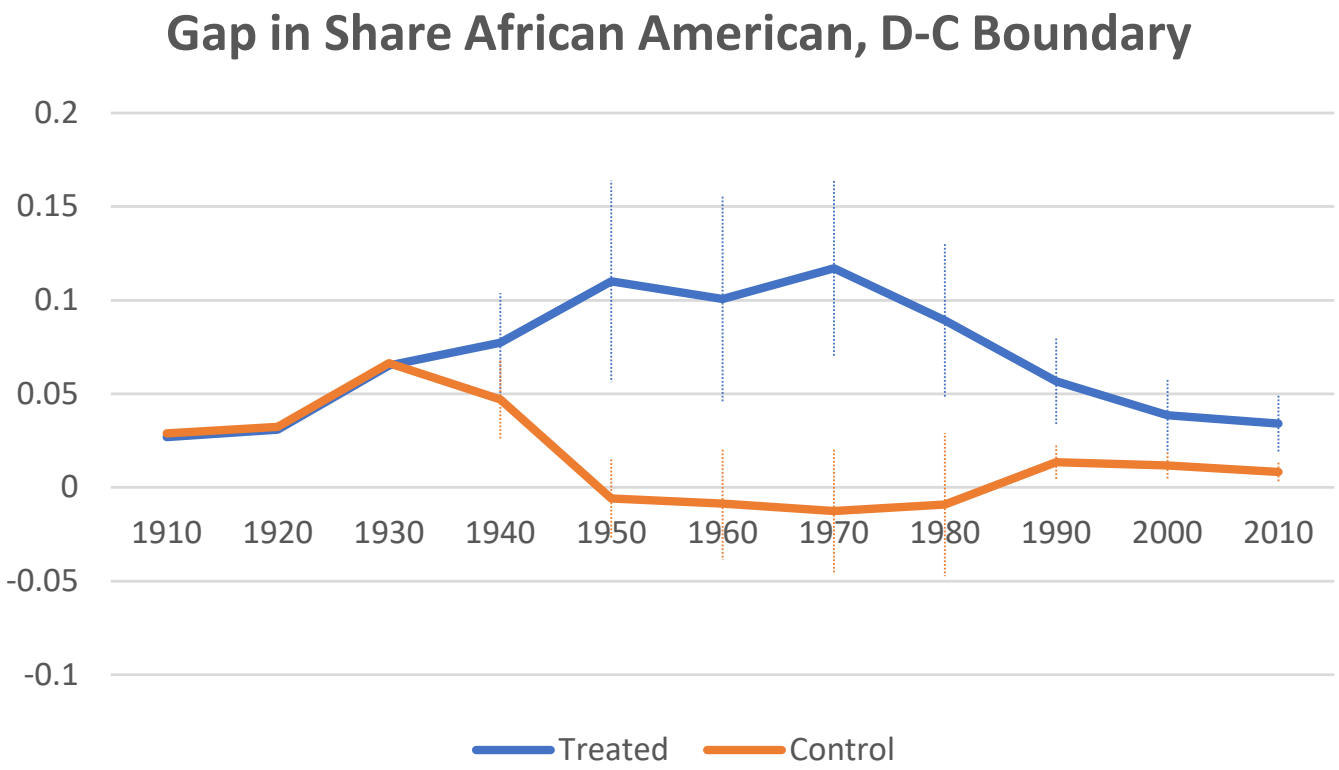

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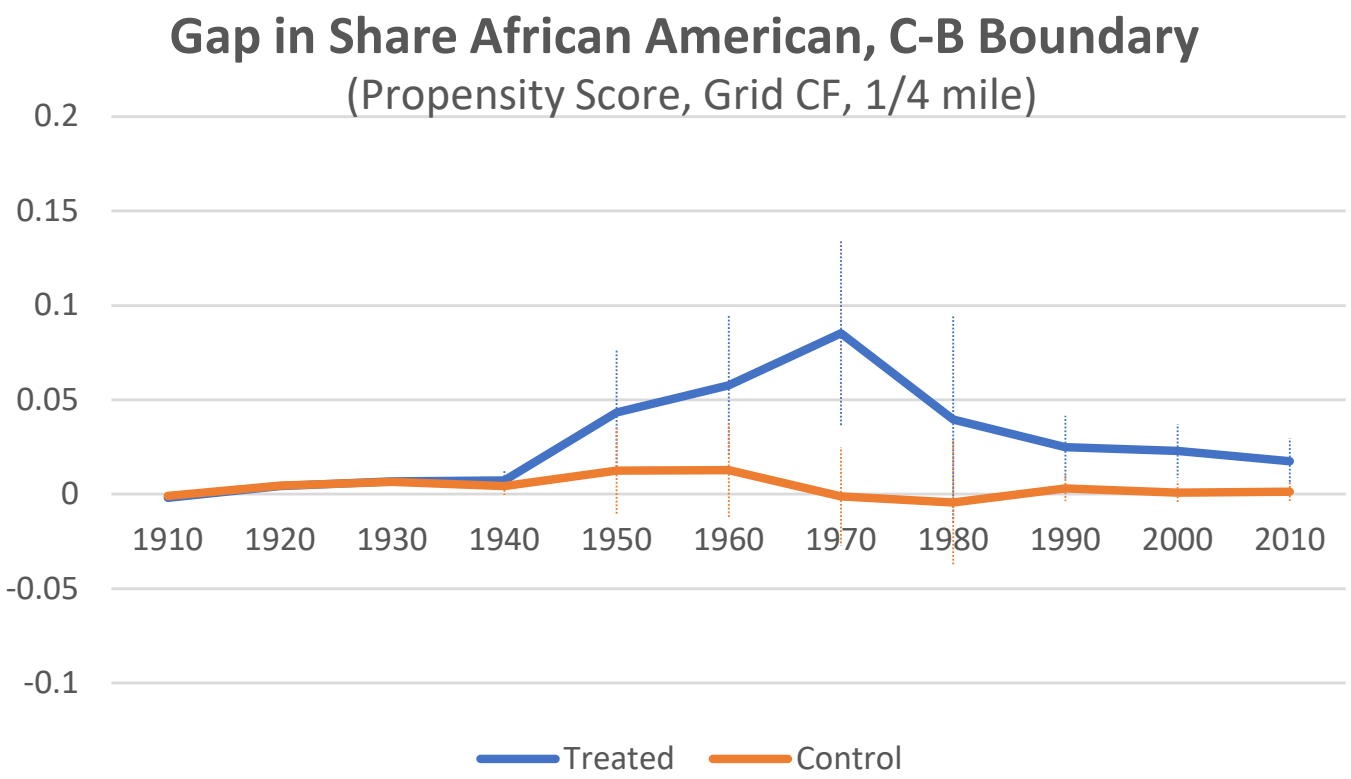
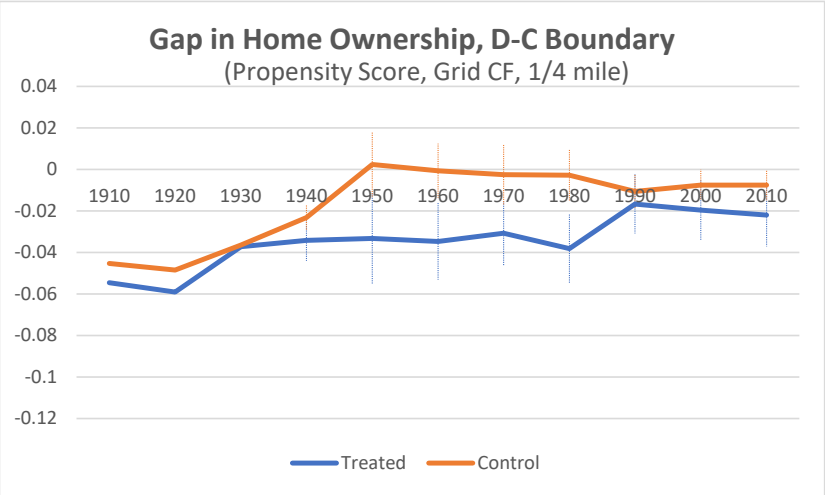
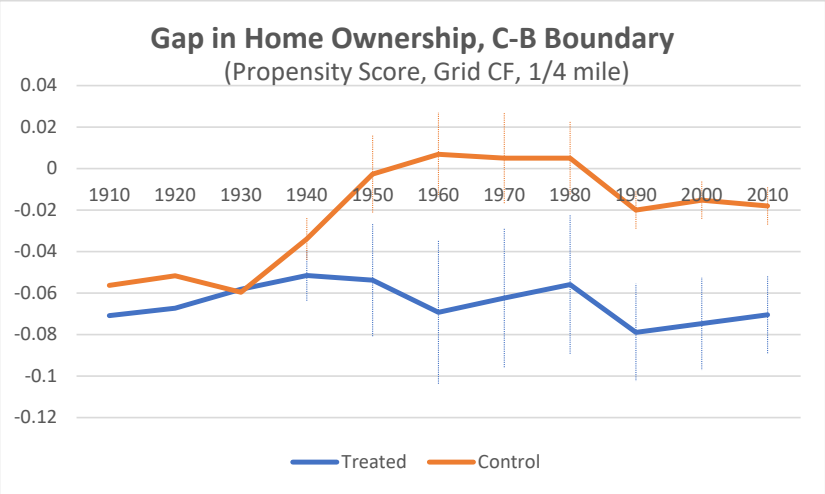


The Effects of Redlining

Panel A: D-C Gaps in Home Ownership

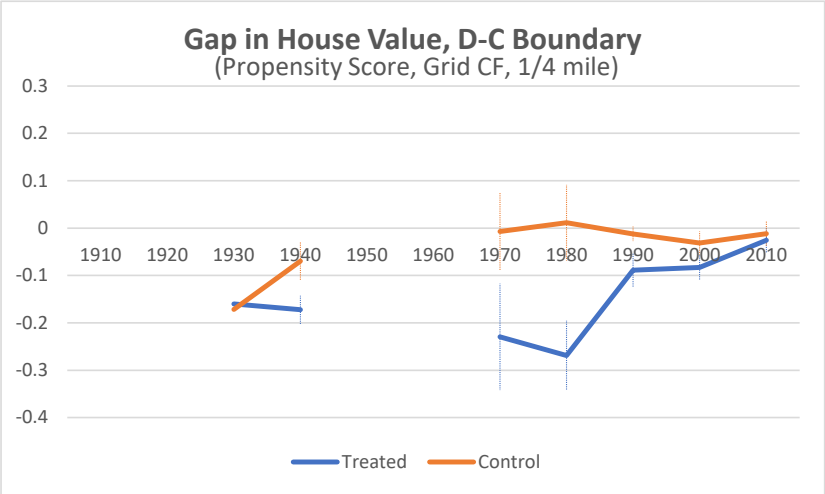


Panel B: C-B Gaps in Home Ownership

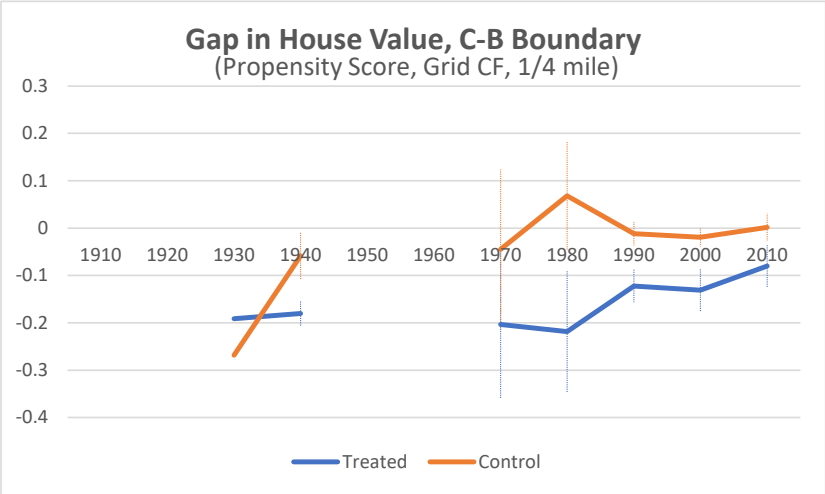


The Effects of Redlining

Panel A: D-C Gaps in House Values



Panel B: C-B Gaps in House Values



The Effects of Neighborhoods on Inequality and Mobility

- Let's switch our approach a little bit
- Instead of focusing on how the evolution of differences in predominantly white and predominantly black neighborhoods may be contributing to black-white gaps, let's think about what happens when you move an individual or family from one neighborhood to the other
- We're going to take a look at the results from the Moving to Opportunity experiment
- This experiment was not specifically about racial gaps in opportunity but rather about gaps in opportunity between high and low poverty neighborhoods generally

The Effects of Neighborhoods on Inequality and Mobility

- The program operated in five cities: Baltimore, Boston, Chicago, Los Angeles and New York
- It focused on families that had children, resided in public housing or Section 8 assisted housing, and lived in a census tract with a 1990 poverty rate of 40 percent or more
- Participants were randomly placed into three groups:
  - Experimental - received a restricted housing voucher (could only be used in a low poverty area) and counseling
  - Section 8 Comparison - received an unrestricted housing voucher and no counseling
  - Control - no housing voucher or counseling

The Effects of Neighborhoods on Inequality and Mobility

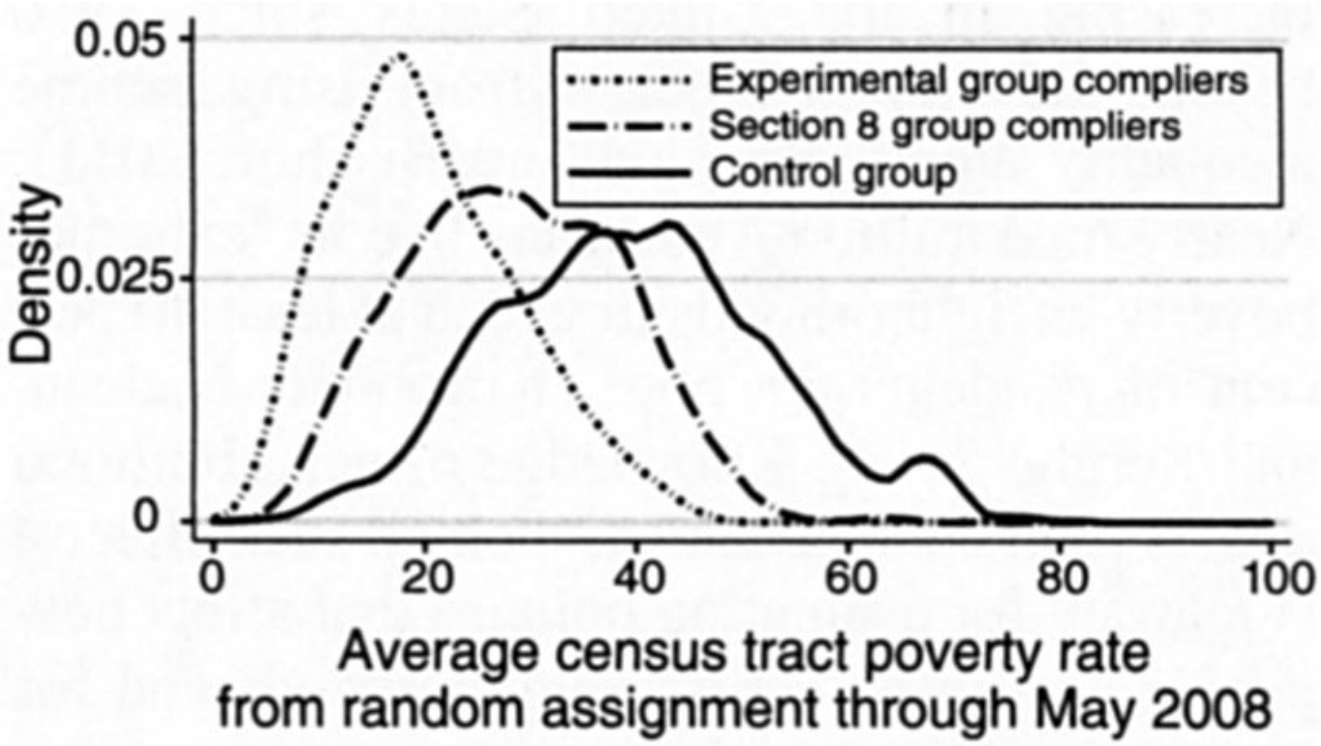


FIGURE 1. DENSITIES OF AVERAGE POVERTY RATE BY TREATMENT GROUP

The Effects of Neighborhoods on Inequality and Mobility

TABLE X
SUMMARY OF IMPACTS OF MTO-BOSTON ON OUTCOMES

	Experimental versus Control		Section 8 Comparison versus Control	
	Control Complier Mean (1)	Relative Change for Treatment Compliers (2)	Control Complier Mean (3)	Relative Change for Treatment Compliers (4)
A. Children's human capital accumulation				
Behavior problems index (boys)	.44	−42%**	.45	−36%**
Behavior problems index (girls)	.20	−24%	.23	−34%
Injury requiring medical attention	.16	−74%**	.14	−43%
Asthma attack requiring attention	.16	−65%*	.11	−9%
B. Adult economic self-sufficiency				
Receiving TANF 7–9 quarters after enrollment	.52	+2%	.48	−11%
Not employed 7–9 quarters after enrollment	.62	−4%	.53	−9%
C. Safety				
Heard gunfire in neighborhood	.26	−100%**	.24	−72%**
Seen drugs in neighborhood	.43	−95%**	.40	−54%**
Child attacked, robbed, threatened	.16	−80%*	.15	−37%
D. Adult health				
Overall health fair or poor	.54	−44%**	.48	−55%**
Calm and peaceful some of the time or less	.61	−37%**	.57	−40%**
Happy some of the time or less	.51	−27%	.43	−19%
Predicted probability of major depressive episode	.34	−29%	.23	−43%

Control Complier Means and Relative Changes for Compliers (based on TOT Differences) are derived from coefficients in Tables VI–IX.
* = p-value < .1; ** = p-value < .05 (based on TOT estimates).

The Effects of Neighborhoods on Inequality and Mobility

TABLE 1—MTO IMPACTS ON ADULT OUTCOMES

	Experimental versus control	Section 8 versus control
Panel A. Outcome indices (z-scores)		
Index for all outcomes	0.037	−0.010
	(0.040)	(0.059)
Economic self-sufficiency	−0.029	−0.112*
	(0.040)	(0.059)
Absence of physical health problems	0.055	0.062
	(0.042)	(0.058)
Absence of mental health problems	0.069	0.063
	(0.042)	(0.062)
Panel B. Selected individual health outcomes		
Psychological distress, K–6 z-score	−0.106**	−0.081
	(0.042)	(0.060)
BMI $\geq$ 40	−0.036**	−0.038*
	(0.016)	(0.023)
Blood test detected diabetes (HbA1c $\geq$ 6.5%)	−0.050***	−0.015
	(0.018)	(0.026)

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TABLE 2—MTO IMPACTS ON YOUTH OUTCOMES

	Experimental versus control	Section 8 versus control	Experimental versus control	Section 8 versus control
Panel A. Outcome indices (z-scores)				
	Female youth		Male youth	
Index for all outcomes	0.079	0.077	−0.016	−0.116*
	(0.062)	(0.065)	(0.062)	(0.069)
Absence of physical health problems	0.109*	0.124*	−0.075	−0.058
	(0.061)	(0.065)	(0.068)	(0.078)
Absence of mental health problems	0.160***	0.039	0.008	−0.062
	(0.058)	(0.065)	(0.064)	(0.071)
Absence of risky behavior	−0.001	0.007	0.027	−0.069
	(0.065)	(0.066)	(0.061)	(0.067)
Education	−0.043	0.027	−0.006	−0.082
	(0.061)	(0.072)	(0.061)	(0.069)
Panel B. Selected education outcomes by age group (z-scores)				
	Under age 6		Ages 6 and over	
Combined math/reading assessment	−0.014	0.019	−0.018	0.043
	(0.055)	(0.056)	(0.061)	(0.072)

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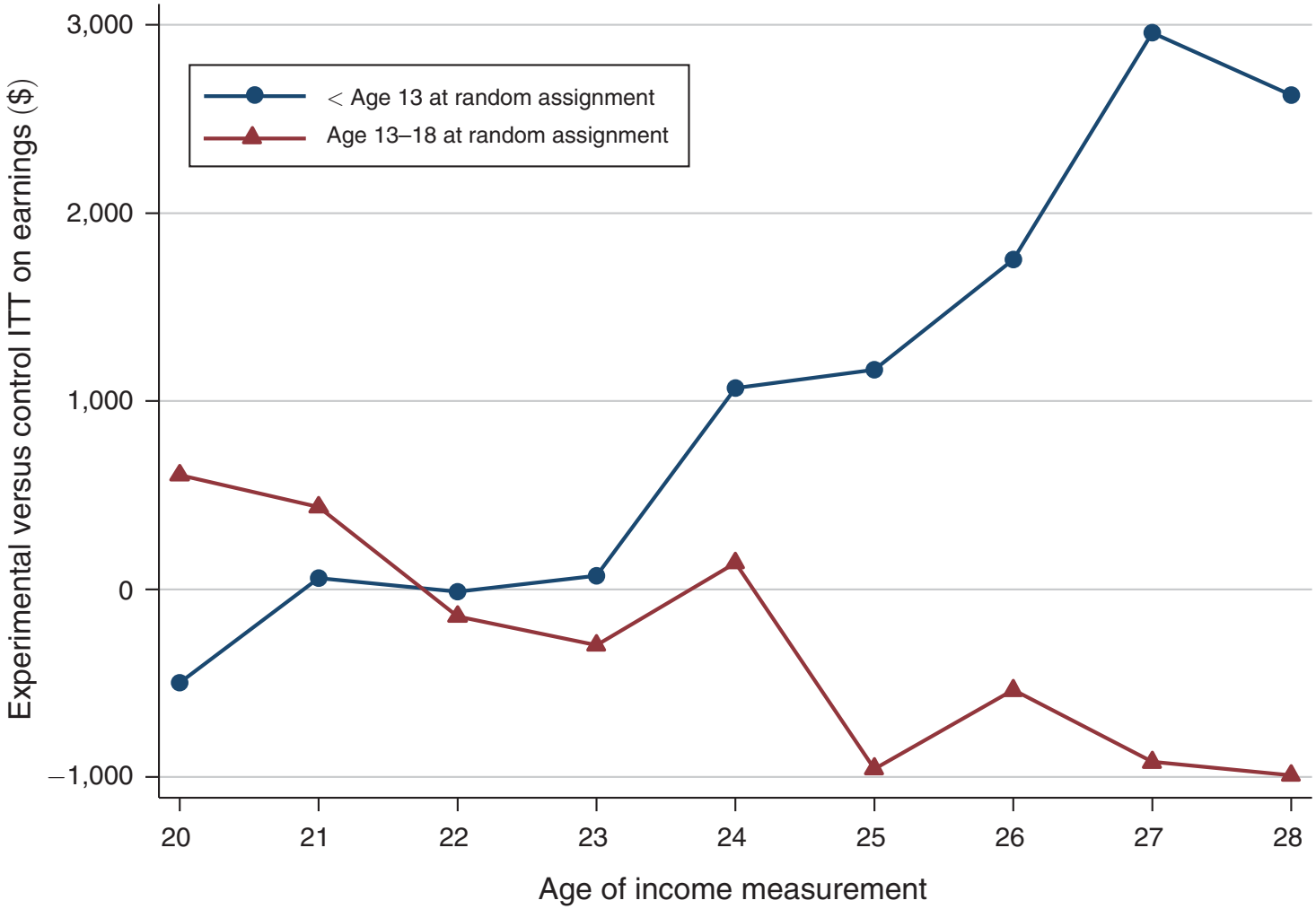

FIGURE 1. IMPACTS OF EXPERIMENTAL VOUCHER BY AGE OF EARNINGS MEASUREMENT