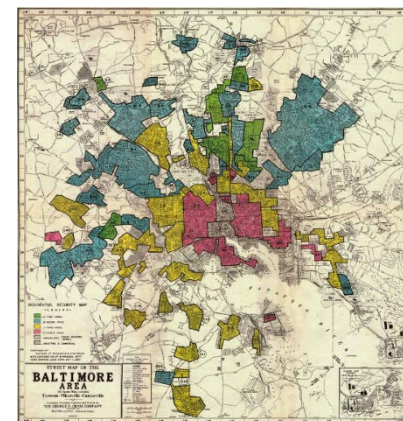


The Effects of the 1930s HOLC “Redlining” Maps

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The views expressed are those of the authors and do not necessarily represent the views of the Federal Reserve Bank of Chicago, the Board of Governors of the Federal Reserve System, or its staff.

Introduction

- “Place” matters for many outcomes
- Large literature on racial segregation
- Our question: What were the effects of the *original* HOLC redlining maps
- Did the maps lead to urban disinvestment and shut out Blacks from attaining wealth?
- Lots of debate, but little *systematic* and quantitative evidence
- We trace out the effects of the maps over the 1940-2010 period

Key Findings:

- We find that the maps led to increased segregation, reduced home ownership, lower home values and credit scores
 - Effects peak around 1970 to 1980 and then wane
 - Boundaries drawn 80 years ago are reflected in measures of financial well-being today
 - Long-run effects are actually stronger and more persistent in “yellow-lined” areas than redlined areas.

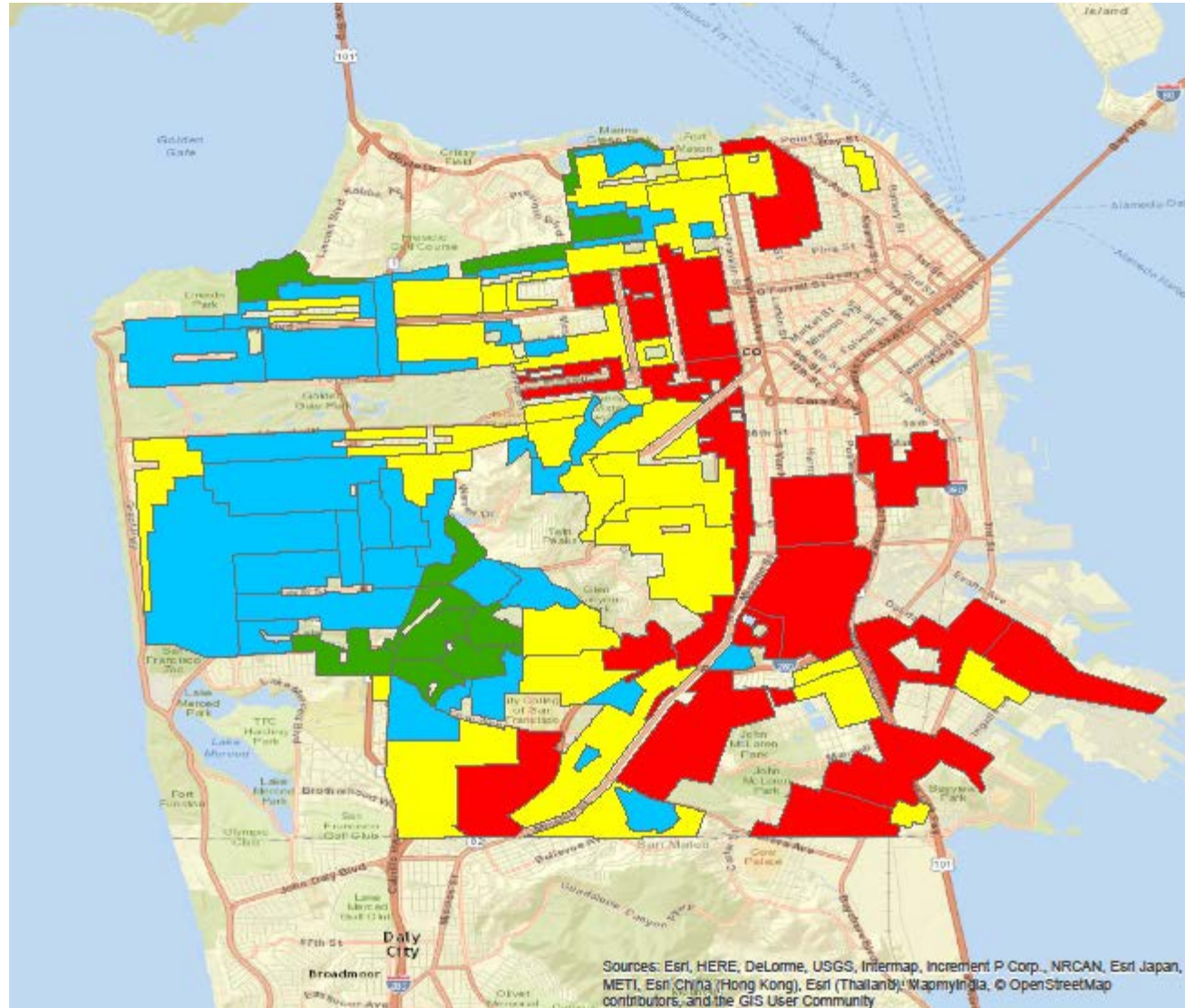
Background

- After the Great Depression, government creates a slew of new agencies to stabilize housing markets
- Major shift to long-term, amortized, insured loans
- HOLC asked to create “scientific” appraisal process and “residential security maps” for all major cities
- Color coded: **A** **B** **C** **D**
- Key variable in grades was the demographic makeup (race/ethnicity) of neighborhoods
- HOLC maps likely systemized, nationalized and coordinated these practices
- Maps influenced private lenders and FHA

Data

- We obtained geocoded HOLC maps of 149 cities (University of Richmond Digital Scholarship Lab, “mapping inequality”)
- Use Census data
 - 1910-1940 address level
 - 1950-1980 tract level
 - 1990-2010 block level
- Credit bureau data from 1999-2016

HOLC Risk Map for San Francisco



AREA DESCRIPTION - SECURITY MAP OF Tacoma

1. AREA CHARACTERISTICS:

- a. Description of Terrain. Low lying level.
- b. Favorable Influences. Schools, churches, stores and transportation conveniently available.
- c. Detrimental Influences. Unimproved streets - Heterogeneous population.
- d. Percentage of land improved 50 %; e. Trend of desirability next 10-15 yrs. Static

2. INHABITANTS:

- a. Occupation Laborers ; b. Estimated annual family income \$ 1000 to \$ 1800
- c. Foreign-born families few %; American born predominating; d. Negro Yes ; 2 %
- e. Infiltration of Lower classes slowly f. Relief families Many
- g. Population is increasing Slowly ; decreasing ---- ; static ----

3. BUILDINGS:

	PREDOMINATING	90 %	OTHER TYPE	10 %	OTHER TYPE	_____ %
a. Type	<u>4 & 5 room</u>		<u>Miscellaneous</u>			
b. Construction	<u>frame</u>					
c. Average Age	<u>15</u> Years					
d. Repair	<u>poor to fair</u>					
e. Occupancy	<u>95</u> %					
f. Home ownership	<u>50</u> %					
g. Constructed past yr.	<u>None</u>					
h. 1929 Price range	<u>\$ 1000 to \$2500</u>	<u>100</u> %		<u>100</u> %		<u>100</u> %
i. 1933 Price range	<u>\$ 500 to \$1500</u>	<u>60</u> %				
j. 1937 Price range	<u>\$ 800 to \$2000</u>	<u>80</u> %				
k. Sales demand	<u>\$ 1500 - fair</u>					
l. Activity	<u>fair</u>					
m. 1929 Rent range	<u>\$ 10 to \$25</u>	<u>100</u> %		<u>100</u> %		<u>100</u> %
n. 1933 Rent range	<u>\$ 5.00 to \$12</u>	<u>50</u> %				
o. 1937 Rent range	<u>\$ 12 to \$20</u>	<u>95</u> %				
p. Rental demand	<u>\$ 15 good</u>					
q. Activity	<u>good</u>					

4. AVAILABILITY OF MORTGAGE FUNDS: a. Home purchase limited ; b. Home building limited

5. CLARIFYING REMARKS: This might be classed as a 'Low Yellow' area were it not for the presence of the number of Negroes and low class Foreign families who reside in the area. Lot values run from \$2.00 to \$5.00 per front foot.

Area Description of Tacoma

Detailed housing characteristics (age, repair), prices of sales etc.

“This might be classed as a ‘low yellow’ area if not for the presence of the number of Negroes and low class Foreign families who reside in the area.”

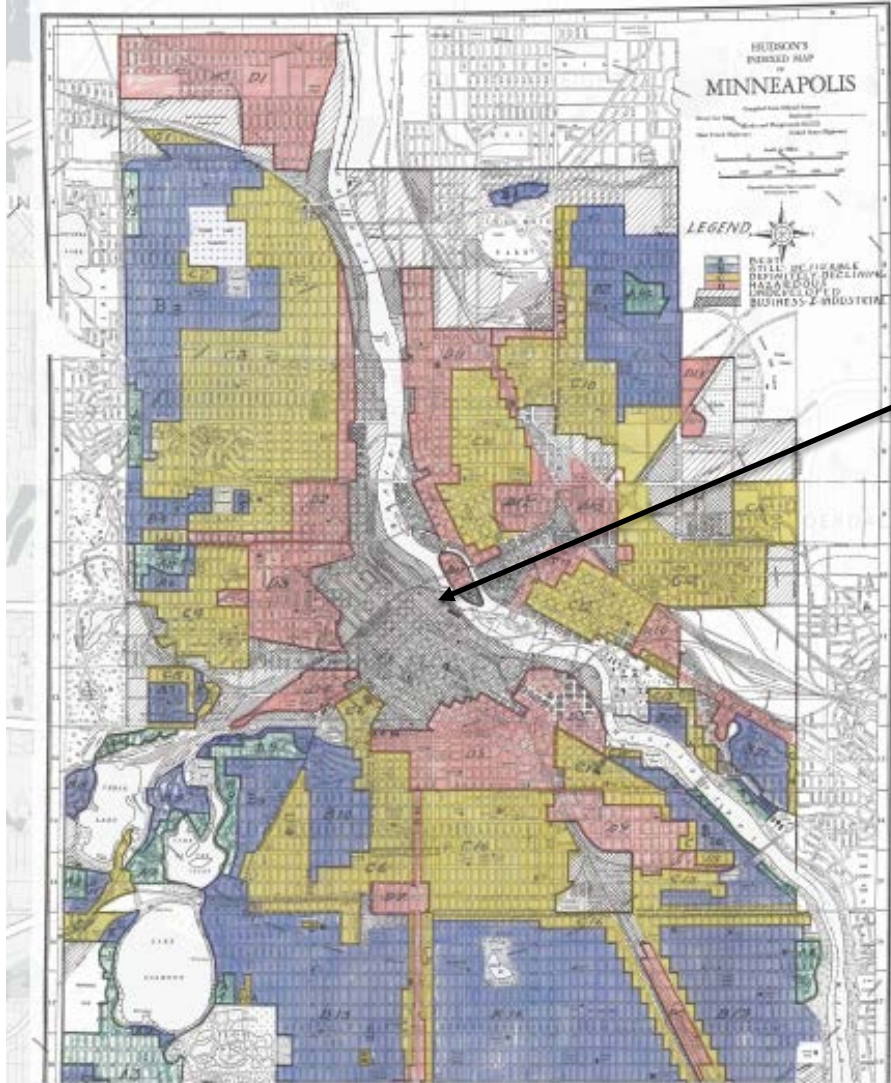
Who Reviewed the Maps

More Evidence that Race was Pivotal

- Berkeley, Area 2, C grade:
“Northeastern part of area, north of University, could be classed as High Yellow, but for infiltration of Orientals and gradual infiltration of Negroes form south to north.”
- Brooklyn, Bedford-Stuyvesant, Area 8, D-grade:
“Colored infiltration a definitely adverse influence on neighborhood desirability although Negroes will buy properties at fair prices and usually rent rooms.”
- Oakland, Piedmont, Area 14, B-grade:
“Some parts of this area would be considered only High Yellow but for the rigid restrictions existing in Piedmont as to type of new construction and also the fact that there are no Negroes or Asiatics allowed in the city limits.”
- Richmond, VA, Area 7, C-grade:
“Respectable people but homes are too near negro area D2”
- Baltimore, Area 6, C grade:
“No immediate danger of negro encroachment, but there is a heavy concentration of negroes in the section adjoining.”
- Spokane, Area 10, D-grade:
“The territory immediately adjacent to Liberty Park is slightly better grade but proximity to largest negro concentration of the city precludes higher grading.”
- Warren, Area 8, C-grade:
“Section is “killed” by influx of negroes from D-3 to attend Francis Willard School in C-8”
- Youngstown, Area 3, D-grade:
“Evergrowing influx of negroes and low class Jewish in the westerly end. “

Minneapolis HOLC Map

We are here



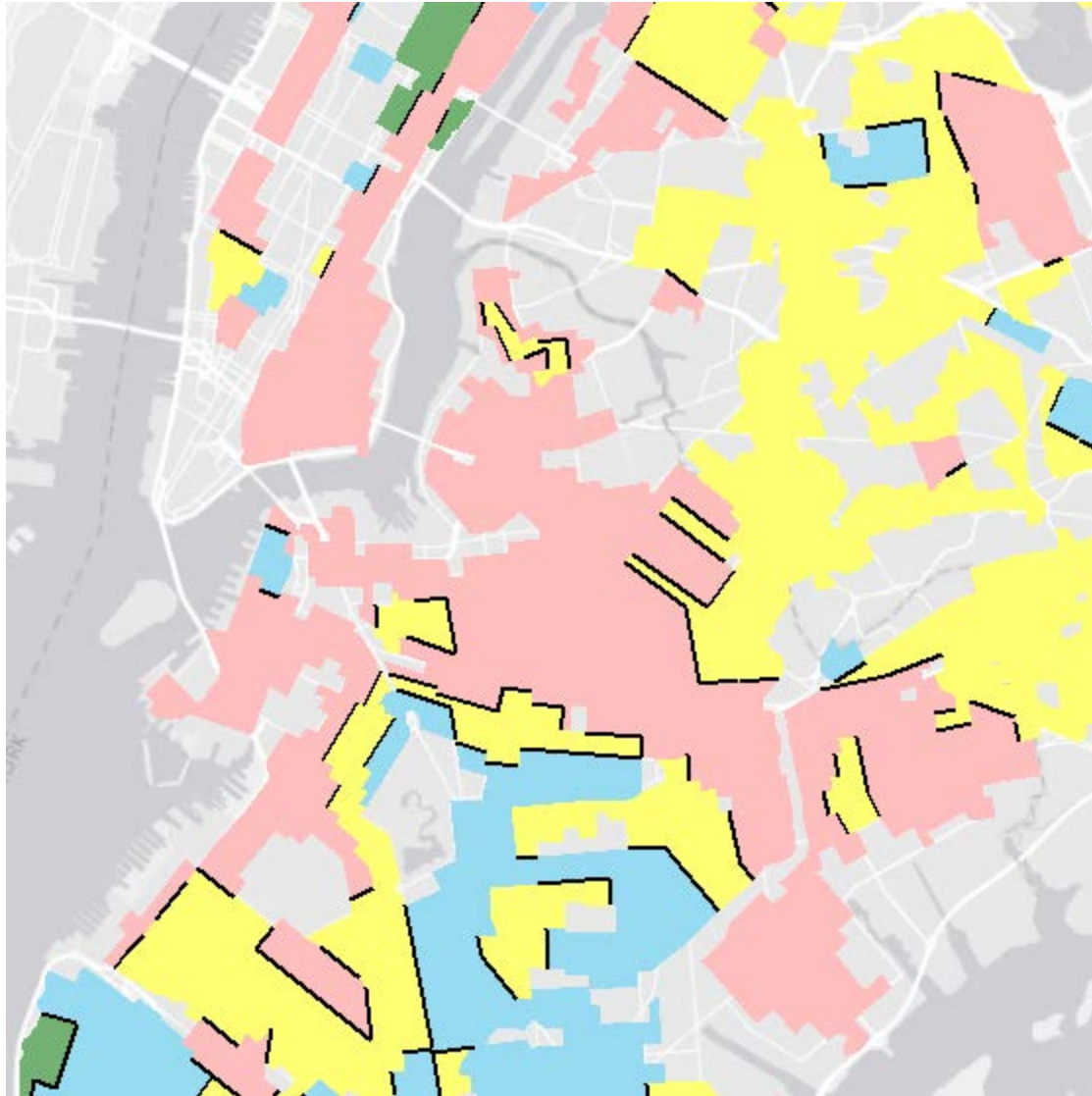
Description of D-11

ago, but residential use in this area is very decidedly on the down grade. Original population of French, Germans and Irish are gradually being supplanted by Poles, Russians, Syrians and Slvas. Nicollet Island, on the lower end of this section is heavily industrialized, especially south of Hennepin Avenue, practically only remaining residence of any values is the home of the pastor of the French Catholic Church, which church was built here many years ago and is still being used by a French Community for worship. The north end of the Island on Hennepin Avenue

How We Make Our Border Comparisons

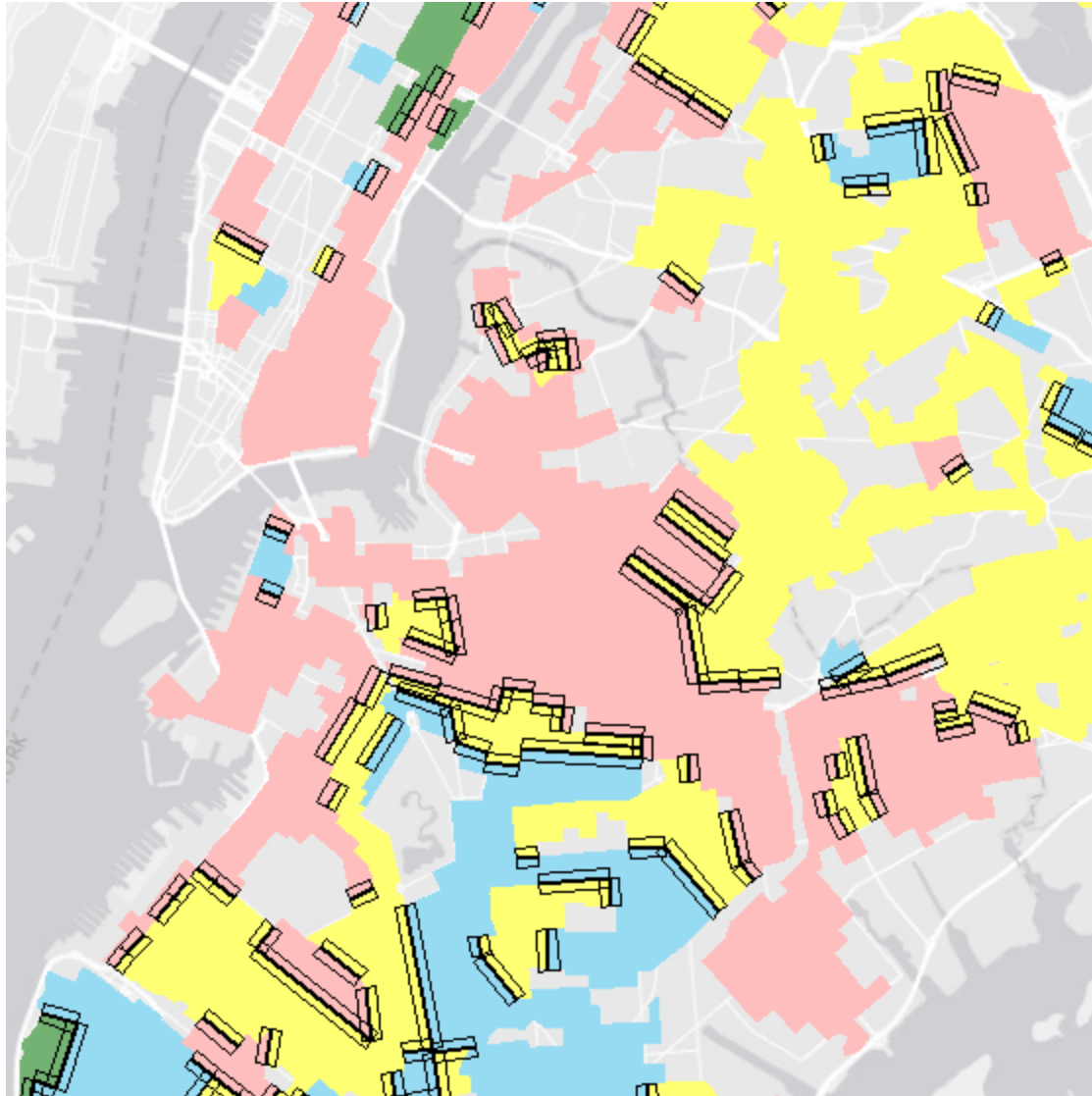
1) Identify Different Grade Boundaries

Example: New York City



2) Create Boundary Buffer Zones

(1/8 mile buffer around HOLC boundaries that are over 1/4 mile in length)

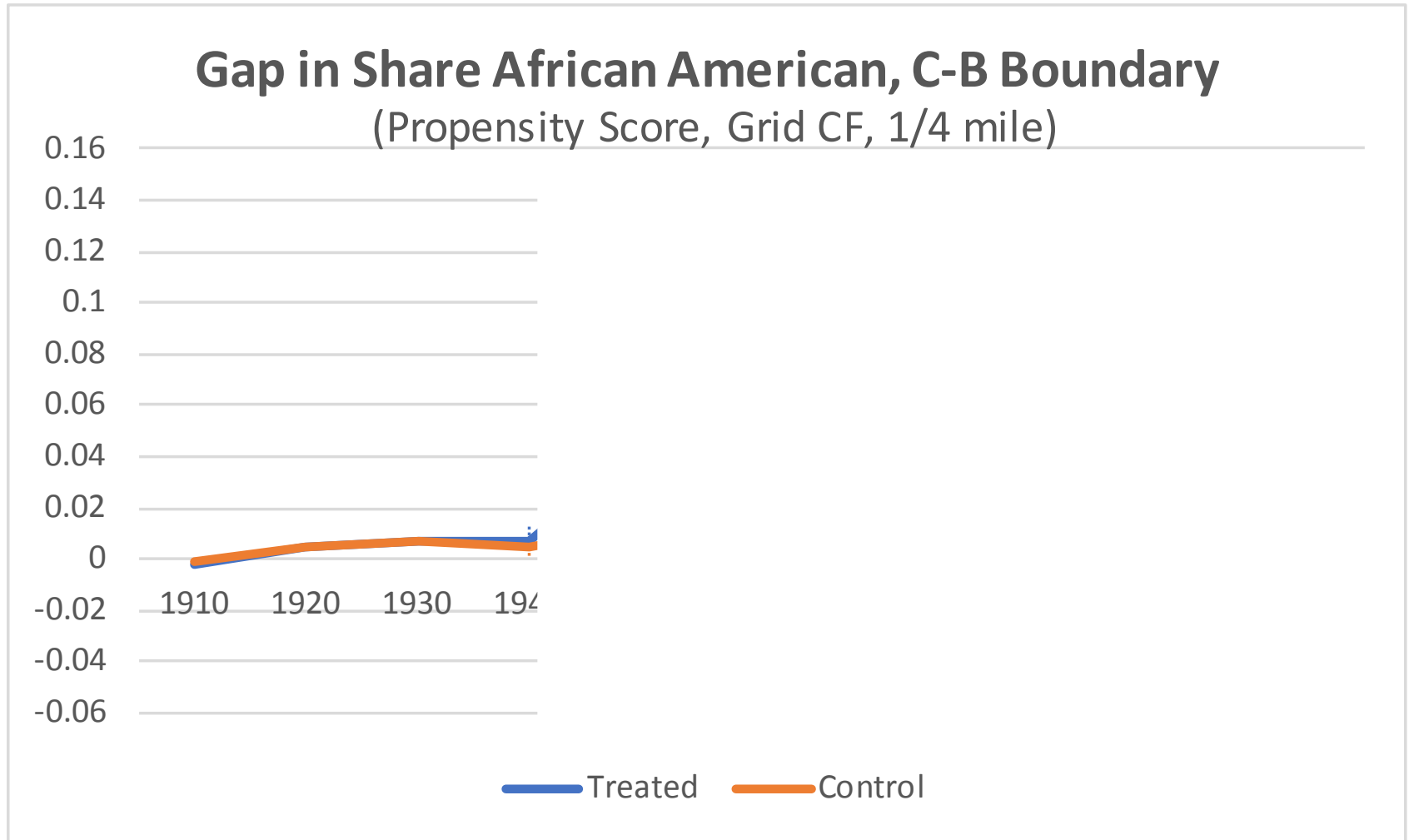


We also use statistical methods to create a “control group” of boundaries

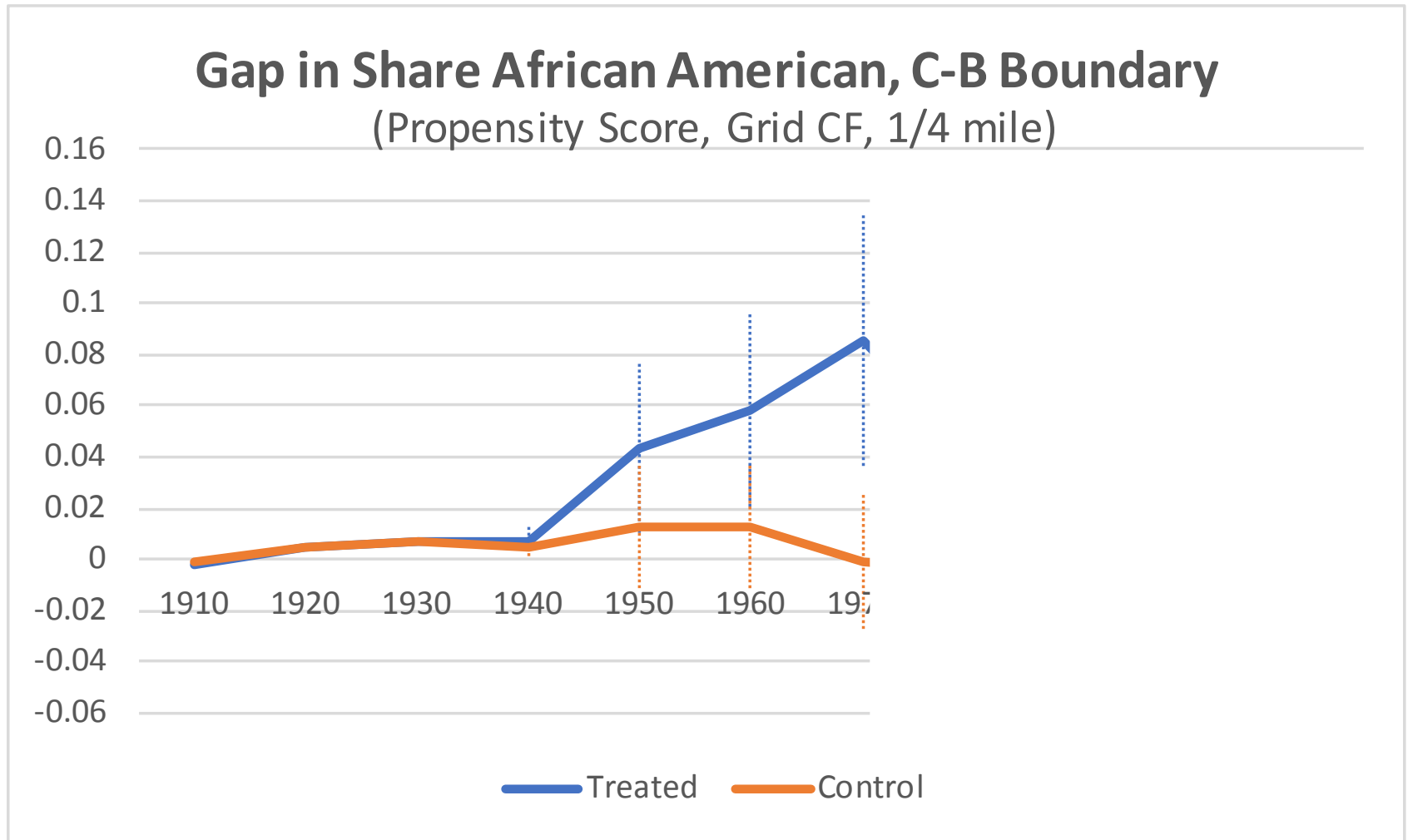
- Impose a grid over each city and find boundaries with similar “gaps”
- Also use actual HOLC boundaries with the same grade on both sides
- See paper for details

Results on Segregation

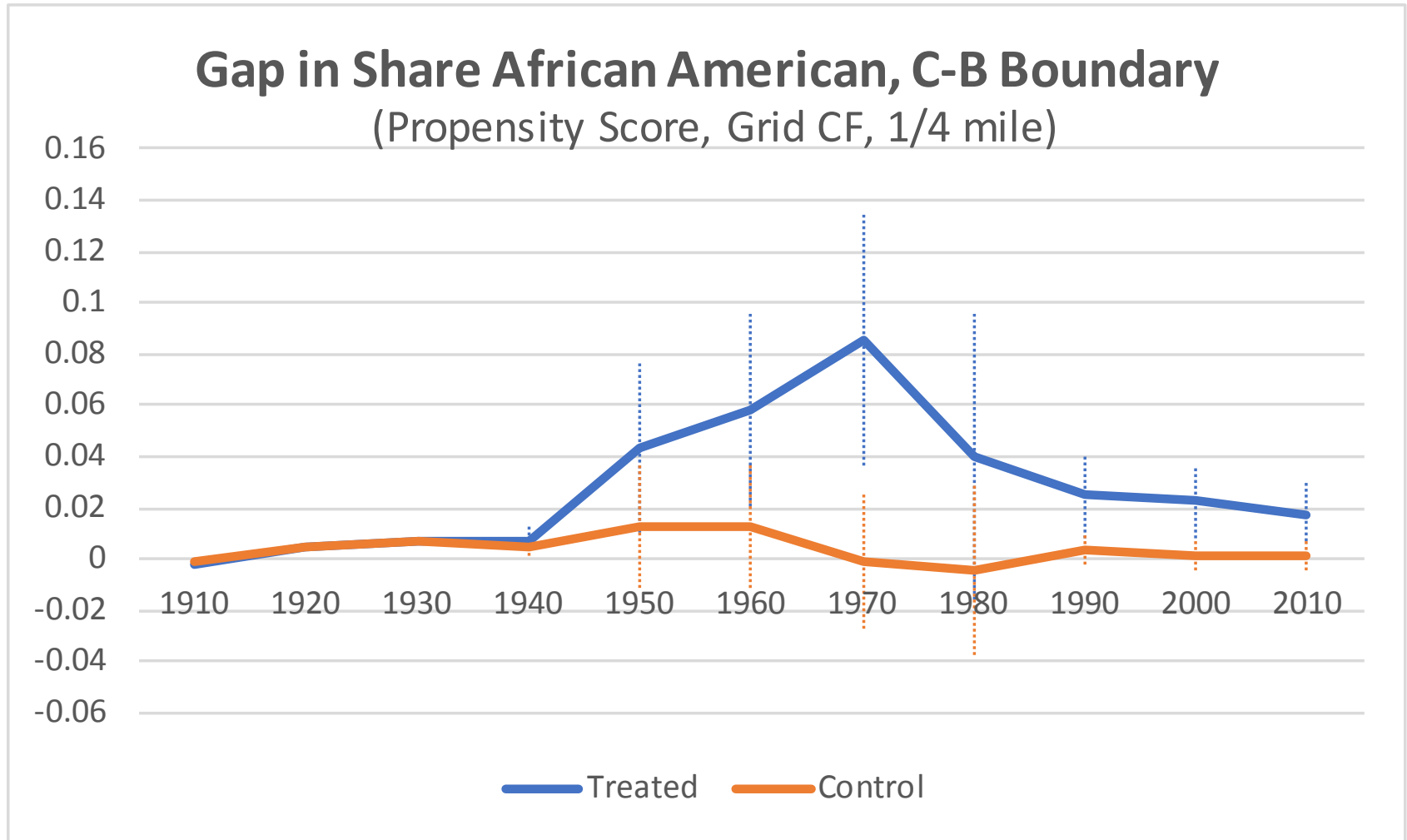
Effects on Segregation (C-B)



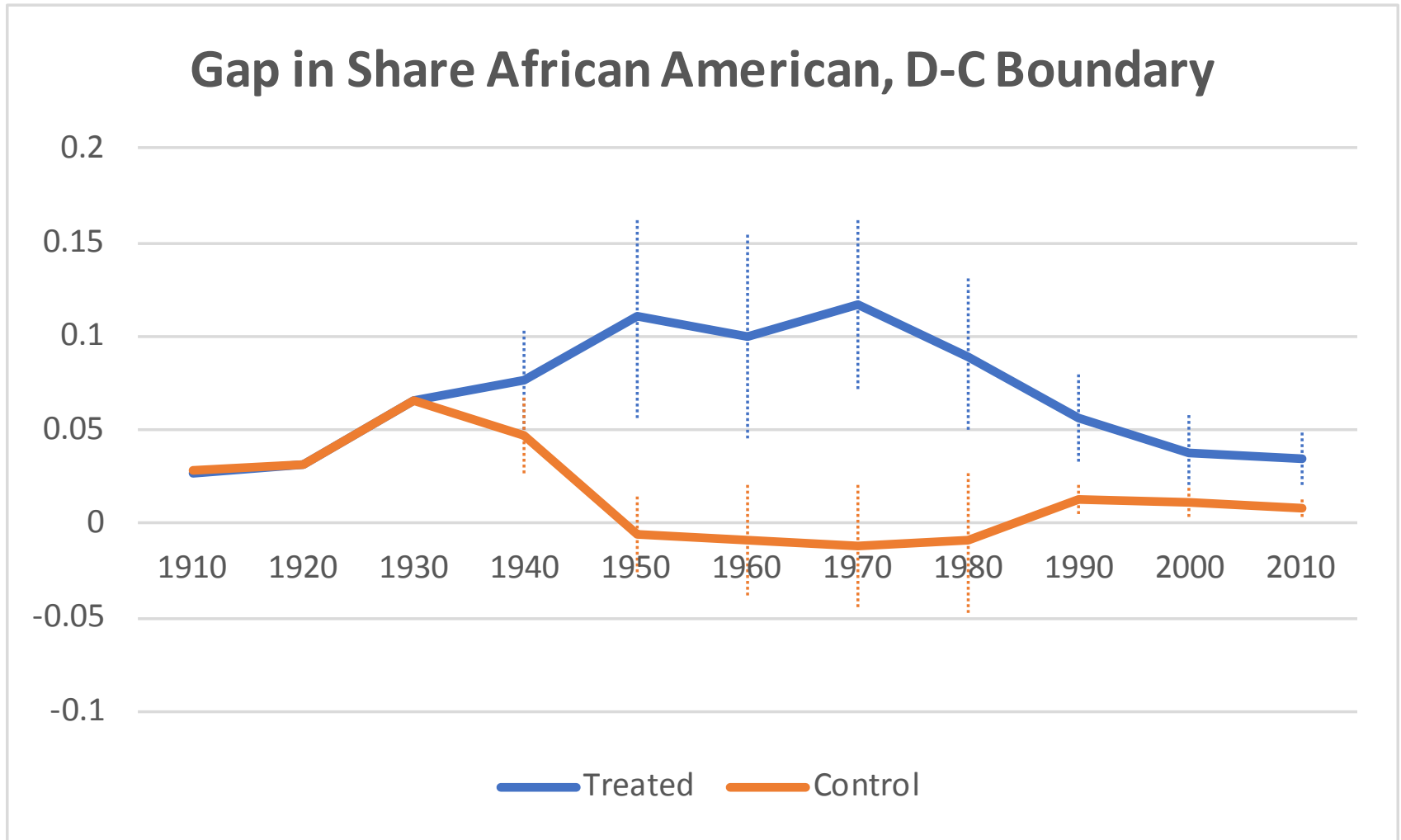
Effects on Segregation (C-B)



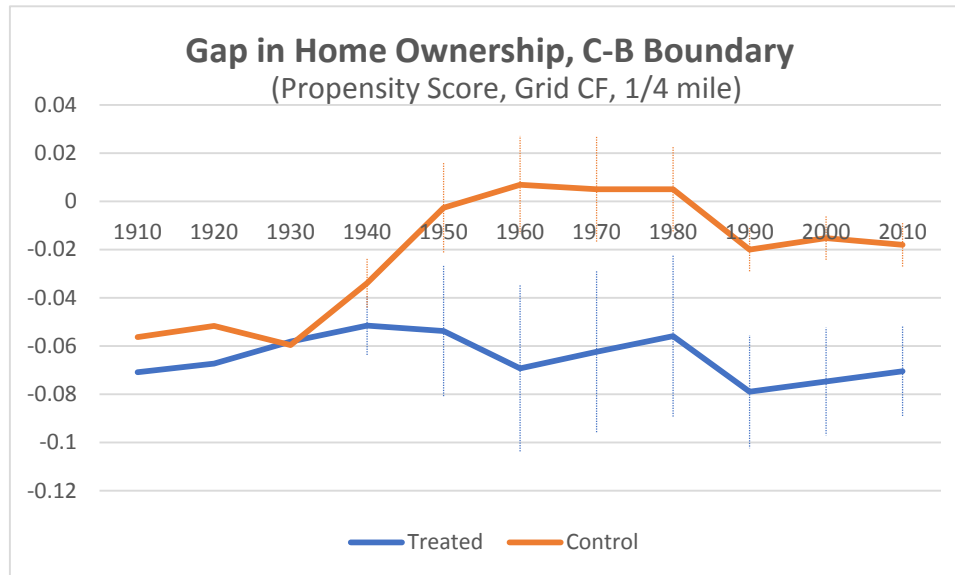
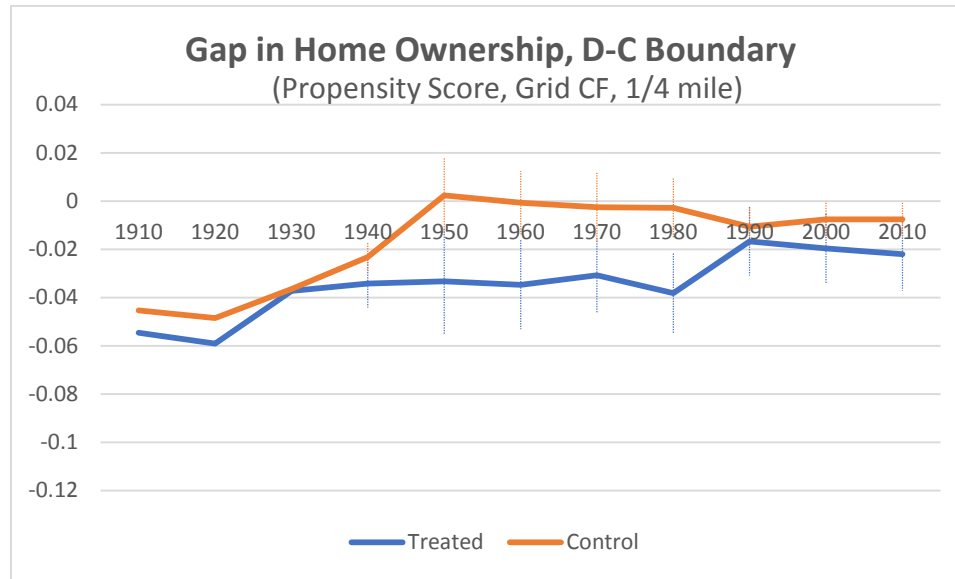
Effects on Segregation (C-B)



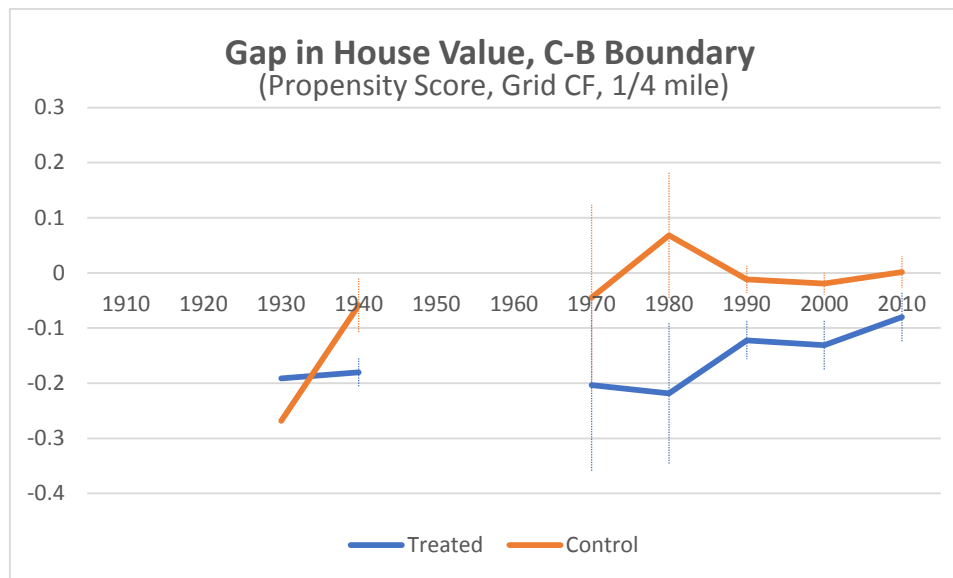
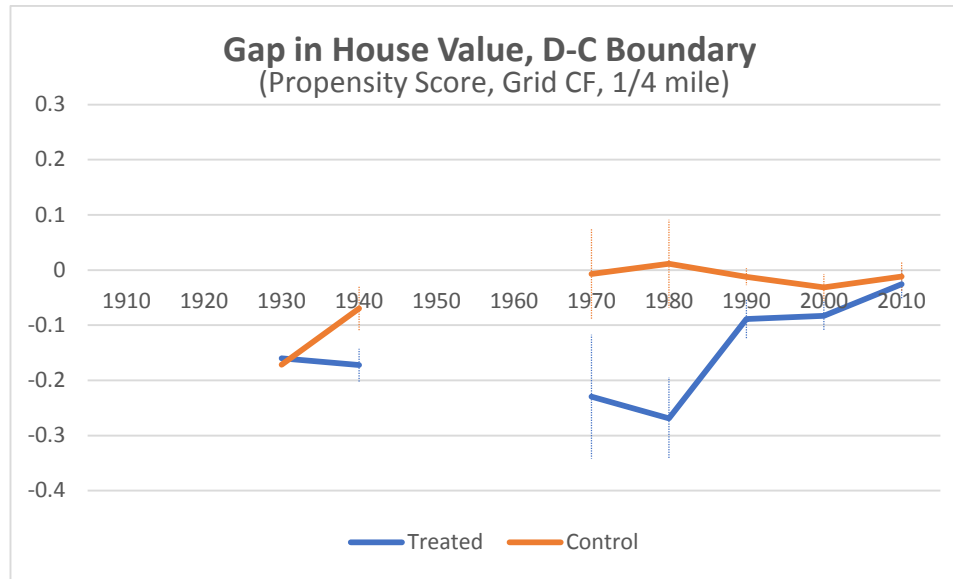
Effects on Segregation (D-C)



Home Ownership Results



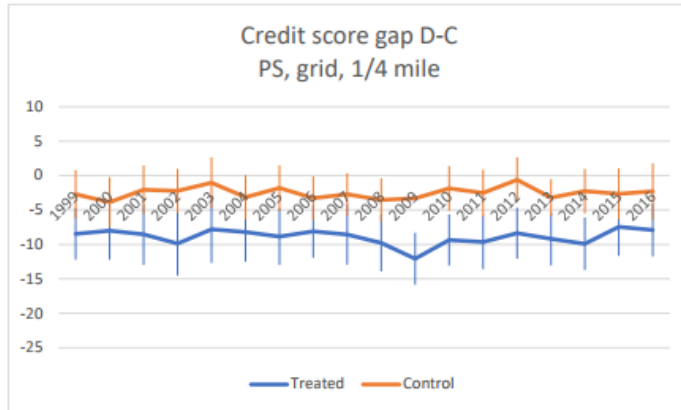
House Value Results



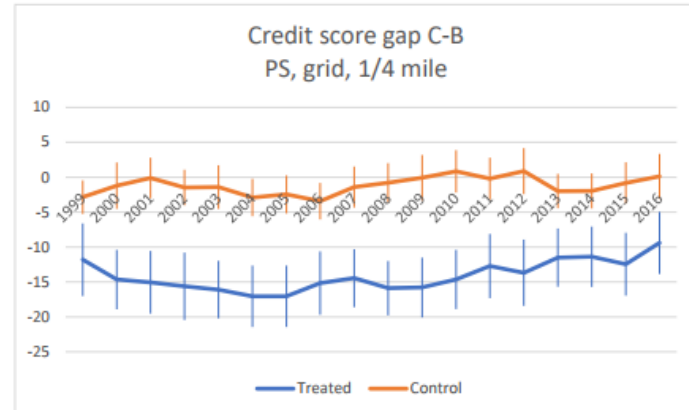
Effects on Modern Credit Scores

Figure 11: Effects on D-C and C-B Gaps in Credit Scores

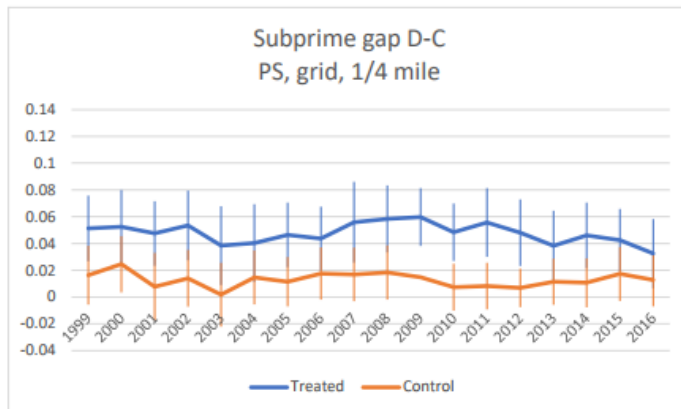
Panel A: D-C Gaps in Credit Scores



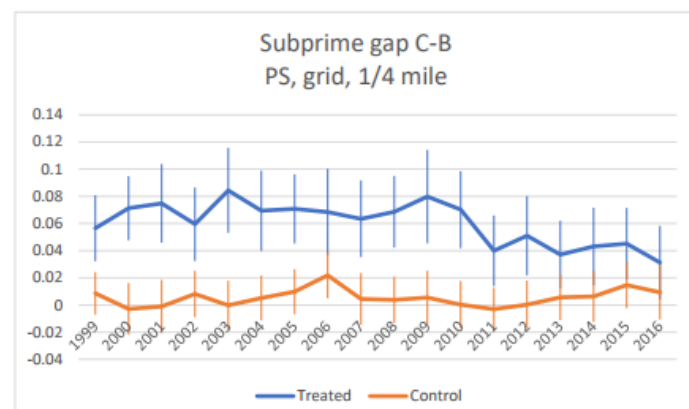
Panel C: C-B Gaps in Credit Scores



Panel B: D-C Gaps in Subprime



Panel D: C-B Gaps in Subprime



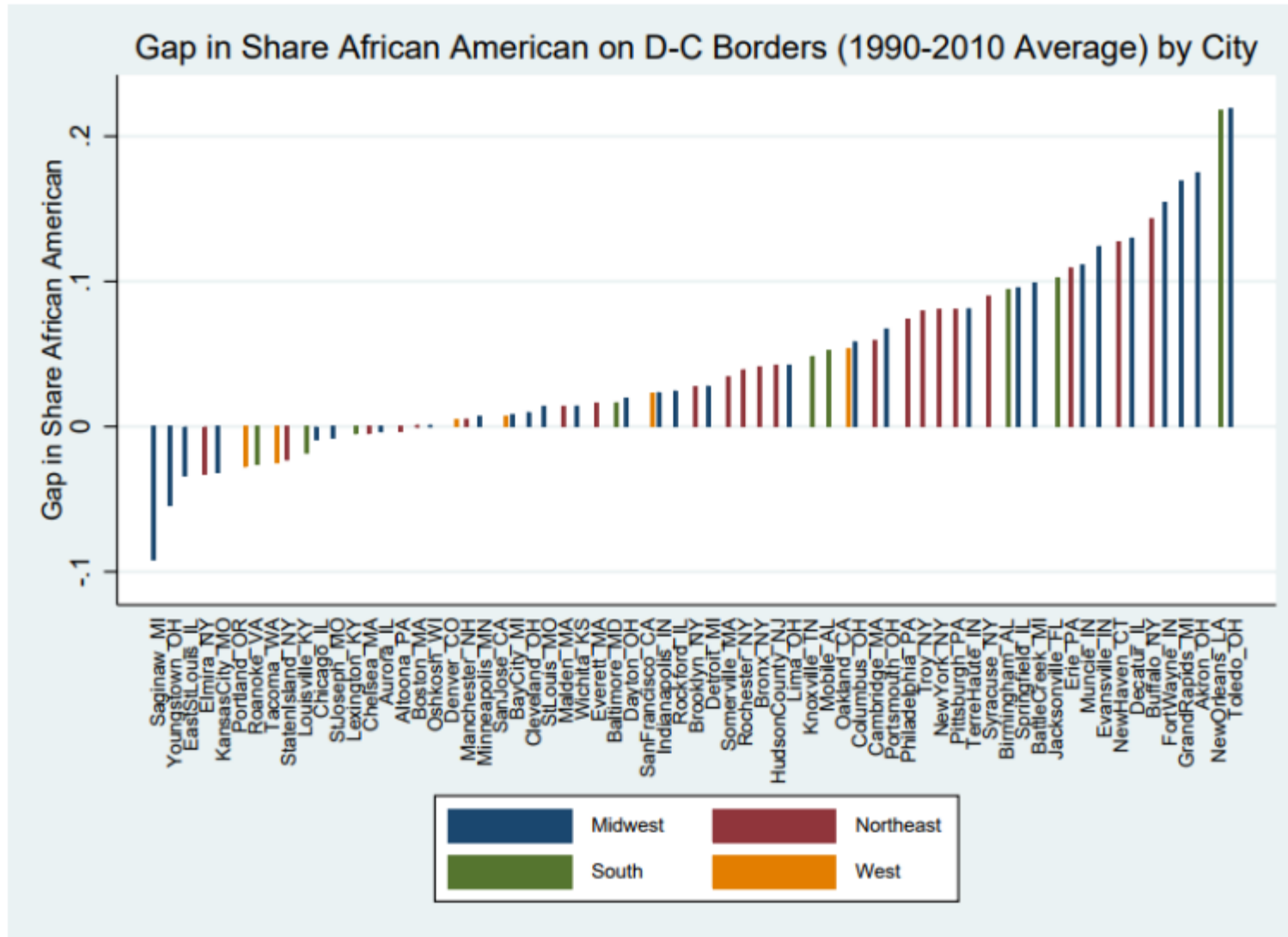
Source: FRBNY Consumer Credit Panel/Equifax

Why Differences in Effects Between D/C and C/B?

- **Policy:** FHA 1968, CRA 1977, successfully targeted D but not C areas.
- **Information:** HOLC grades had more “bite” in C than D. (perhaps lending was already more restricted in D areas pre-map)
- **Spatial investment:** D quicker to be redevelop than C
 - D closer to central business district and thus more likely to redevelop first
 - Building stock in D depreciated more quickly and thus more suitable for redevelopment.

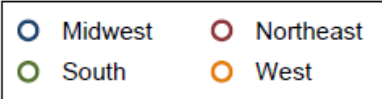
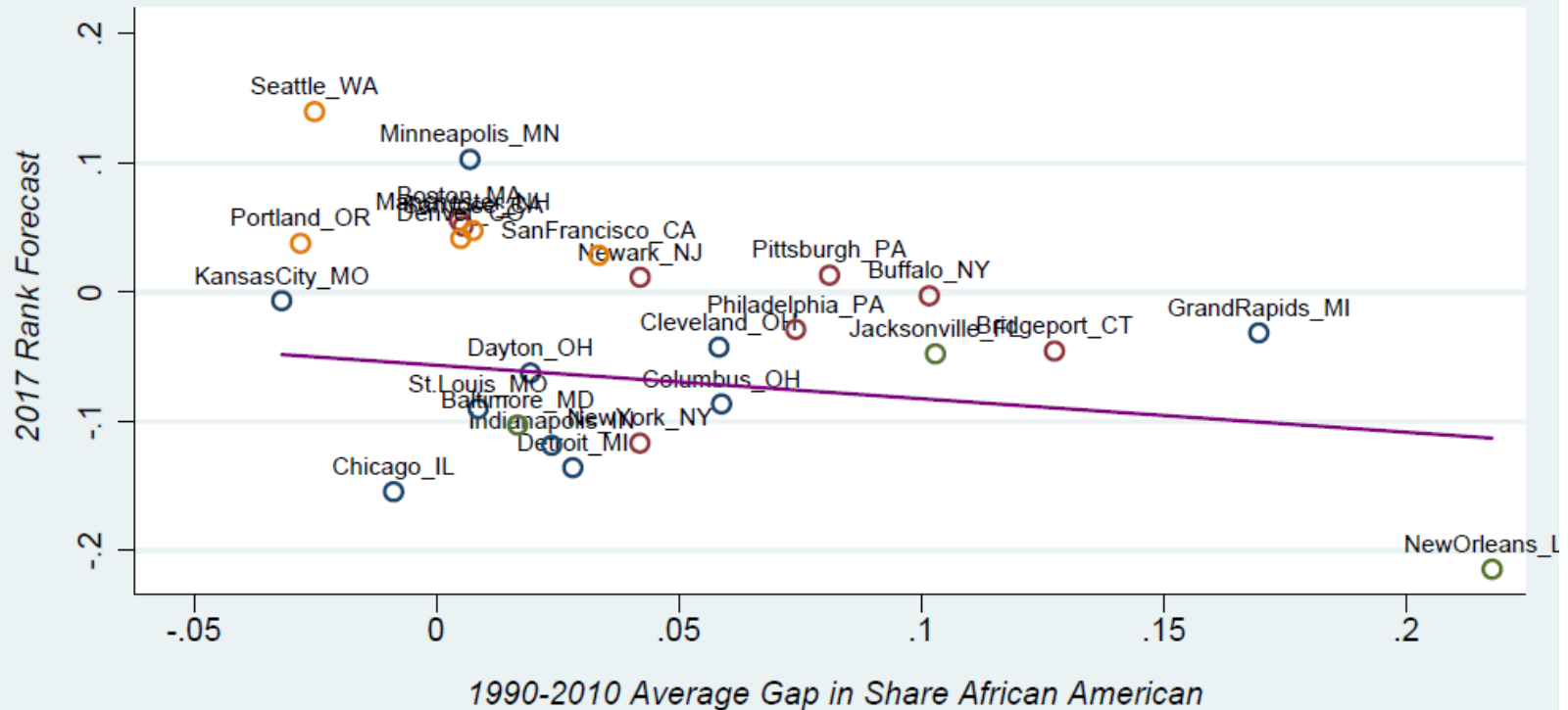
Figure 13: City-specific Gaps Along D-C and C-B Borders

Panel A: D-C Gaps in African American Share by City, Average 1990-2010



Effects Correlated with Upward Mobility

Average Gap in Share African American on D-C Borders from 1990-2010 vs. Chetty and Hendren's Rank Forecast at the 25th Percentile (by Commuter Zone)



Slope = - .583
 Standard Error = .255
 Constant = -3.5e-03
 Adjusted R-Squared = .144

Concluding Thoughts

- Maps long been suspected to be a factor driving urban development but little actual evidence.
- We find that the maps had causal effects over subsequent decades
- Back of envelope: Maps account for 15-30 percent of *overall area gaps* in share African-American and home ownership over 1950-2010.
- Yellow-lining effects larger and more persistent than redlining
- Implications for the Fed
 - Highlights the continued importance of the Fed's community development function, it serves as one important counterweight to this historical legacy working on issues ranging from small business creation to financial literacy
 - Importance of regulatory function in enforcing CRA
- Future Work:
 - Exploiting the city-level variation to look at mechanisms
 - Looking at the long-run individual-level outcomes of children exposed to the HOLC maps