Race and Home Ownership in Historical Perspective

Robert A. Margo
Boston University,
Russell Sage Foundation, and
National Bureau of Economic Research

Road Map

- Some general background
- Overview of RSF Project w/focus on home ownership part
- Special Topic #1 (IF there is time): The Relative Decline in African-American Urban Housing Values in the 1970s: The Role of the 1960s Riots
- Special Topic #2 (IF there is time): New Evidence on Spatial Mismatch From an Unusual Source – Employment at the Post Office

General Background

- I'm a "cliometrician"
- Cliometrics: application of theoretical models + statistical techniques of contemporary economics to historical data
  - Early cliometrics (1960s-70s) motivated by history
  - Today, motivated primarily by economics → historical roots of contemporary policy issues

- My work: economic history of (a) racial differences in economic outcomes (b) wages (c) manufacturing (d) transportation.
  - *Race and Schooling in the South, 1880-1950: An Economic History* (U of Chicago Press 1990)
  - *Wages and Labor Markets in the United States, 1820-1860* (U of Chicago Press, 2000)

RSF Project

- '*No Place Like Home': Race and Housing in the United States from 1870 to the Present*
  - Co-authored with William J. Collins (Vanderbilt and NBER)

- There is a HUGE contemporary literature on racial differences in housing outcomes (mortgage finance, etc), but it (generally) lacks an historical dimension.

- There is MUCH relevant work in history, but it tends to focus on particular urban areas.

Contribution

- Long-term and broad-based
  - Will cover 1870 to present, entire United States
- Focus is (primarily) on owner-occupancy, augmented with data on housing characteristics, prices, and residential segregation.
- So what?
  - Ratio of wealth/income VERY LOW for AA ca. 1870. Home ownership is the ONLY long-term indicator of wealth that we have for the US.
  - Owner-occupied housing is a BIG share of HH wealth, and racial wealth gap larger than income gap.
  - Homeownership is a social indicator (middle-class status)
  - HARD enough for one book (but we do talk about housing consumption *per se*)
  - Segregation is a first-order characteristic of metropolitan areas.
  - (Recent) public policy aimed at combating racial discrimination in housing.

Take Away

- Since 1870, home ownership has increased greatly for both African-American and White households. Racial gap in ownership has narrowed substantially in the long run, but most narrowing took place before World War I.

- Residential segregation in metro areas increased sharply as AA moved to cities.
  - Little evidence that segregation inhibited convergence in ownership after WW2.
  - But, by 1970s, there is a strong negative correlation between segregation level and racial gap in property values.

- Owner-occupied housing is a normal good so lasting gains in ownership go hand-in-hand with gains in economic resources.
  - Despite improved access to mortgage markets and fair-housing regulation, racial ownership gap has not narrowed since 1980.
  - In our view future racial convergence in owner-occupancy hinges on racial convergence in income and non-housing assets (which, in turn, depend on educational attainment). Access to mortgage markets not enough.

Chapter Outline

- Chapter One: Introduction
- Chapter Two: The Economics and History of Race and Housing
- Chapter Three: Race and Home Ownership in Historical Perspective
- Chapter Four: Race, Space and Riots
- Chapter Five: Policy Responses to Housing Discrimination
- Chapter Six: Conclusion
- Approximately 300 manuscript pages

Basis for the Book: Published Articles

- Residential Segregation and Socioeconomic Outcomes: When Did Ghettos Go Bad? (with Collins), *Economics Letters* (2000)
- Race and Homeownership: A Century Long View (with Collins), *Explorations in Economic History* (2001)
- Race and the Value of Owner-Occupied Housing, 1940-1990 (with Collins), *Regional Science and Urban Economics* (2003)
- Race, Homeownership, and Family Structure in Twentieth Century America (with Collins), in E. Wolff, ed. *What Has Happened to the Quality of Live in Advanced Industrialized Nations?* (2004)
- The Housing Market Impact of State-Level Anti-Discrimination Laws, 1960-70 (by Collins), *Journal of Urban Economics* (2004)
- The Political Economy of State Fair-Housing Laws Prior to 1968 (by Collins), *Social Science History* (2006)
- The Economic Impact of the 1960s Riots: Evidence from Property Values (with Collins), *Journal of Economic History* (2007)
- Race, Segregation, and Postal Employment: New Evidence on Spatial Mismatch (with Boustan), *Journal of Urban Economics* (forthcoming)

Data We Use

- Primarily based on census data – from published volumes and especially IPUMS samples (www.ipums.umn.edu)
- 1870: real estate ownership (IPUMS)
- 1880: farm ownership (published volumes, Ransom-Sutch sample)
- 1890-present: Home ownership and mortgage status (in a few years)
  - IPUMS: 1900-1940, 1960-2000; ACS: 2001-2007
- 1930-present: value of owner-occupied housing (IPUMS)
- 1940-present: housing characteristics (IPUMS from 1960-present)
- Additional data on segregation (census-tract based), riots, housing policies

Research Methods

- Descriptive econometrics: unconditional and conditional differences in ownership and property values
  - Regression analyses link households' economic characteristics to housing market outcomes. Blinder-Oaxaca decomposition and/or race dummy variable (= 1 if AA).
- "Causal" estimation
  - Instrumental variables and difference-in-difference techniques
- Qualitative sources and earlier literature
  - For example, Du Bois, Myrdal, and so on
  - Adds historical nuance, enriches the narrative (and, we hope, sell more copies!)

(Our) Economics of Owner-Occupancy (1)

- Much (MUCH) current work on home ownership using DGE (dynamic general equilibrium) methods. Our approach is less formal (wave arms!).

- Housing demand = H (R, p, S), R = "resources", p = relative price of housing, S = household type (eg. marital status, family size). Note: S should really be endogenous).

- R = f(current income, current assets, expected future values)

- $H_R f_x > 0$. Housing is a normal good. Elasticities may vary across terms in f.

- Note: H probably also depends on expected future values of p.

(Our) Economics of Owner-Occupancy (2)

- Imagine identical households, identical housing units.
- Own if user cost < rental price
- Most basic version: user cost = opportunity cost + depreciation – expected capital gains. Rational expectations → E(capital gains) = 0.
- If identical households + units in equilibrium user cost = rental price. Rate of owner-occupancy is indeterminate (all households, not just marginal, are indifferent).

How to Resolve

- Agency costs (focus on depreciation term)
  - Fundamental principal (landlord) – agent (tenant) problem. Various partial solutions but, in general, depreciation of unit ↓ if owner-occupied
  - For some types of housing optimal market structure is developer builds homes that are owner-occupied from the start and no (or very limited) rental market exists. One household units.
  - BUT market (may) also exist for multi-household units = one building, many units. Agency costs for within-unit depreciation are internalized by owner-occupancy but NOT (necessarily) "commons" maintenance problems.
  - "One building, one owner" rule of thumb (Glaeser and Shapiro 1999)
  - Embed in standard mono-centric model. Multi-household units near CBD (capital-land substitution) while (detached) single-household on urban periphery. Individuals occupy multi-household dwellings while young (R relatively low) and single (family size = 1). Detached single-family occupied by older household heads (higher value of R and family size > 1)
  - Generates life-cycle variation in owner-occupancy (age, household status, income). Useful as a benchmark.

Commentary (1)

- Comment #1: Indeterminacy can also be resolved if owner-occupancy has utility value or positive (consumption) externalities. May vary with household structure or permanent income. Sometimes assumed in DGE literature. Speculative (to say the least!).

- Comment #2: owner-occupancy may incur (net) transactions costs. If sunk, highly mobile (i.e young) households will prefer to rent.

- Comment #3: owner-occupancy may not be economically feasible. Asset value of home generally will be a multiple of current income, implying that household may need to borrow if available assets limited (mortgage). But household may be credit constrained. Well-known racial biases in mortgage markets.

- Historical corollary (to #3). For certain types of self-employment, home is part of the capital stock of the business OR is geographically proximate. Market for commercial credit evolved earlier in US history than consumer debt. Implies connection between occupational choice and owner-occupancy. Most important example is agriculture.

Commentary (2): Technical Change and Housing Prices

- Technical change affects p for different types of housing and therefore, owner-occupancy.

- Example #1. Electrification + appliances lowers cost of "housekeeping" → more independent households.

- Example #2. Automobile + highways → suburbanization ↑ detached single-family so owner-occupancy ↑.

- Racial effects of #2 are complex. African-Americans face discrimination in accessing the suburbs prior to "fair housing" legislation BUT "white flight" → owner occupancy in central city via "filtering"

Commentary(3): What About Taxes?

- Popular (and some scholarly) treatments of own v. rent emphasize tax "benefits" to owner-occupancy. If household itemizes, can deduct mortgage interest + property taxes. Imputed rent is not taxed. NOTE: there are tax benefits for landlords. In competitive rental market, these will be reflected in rental price.

- We think this is a small part of the racial story. Why?

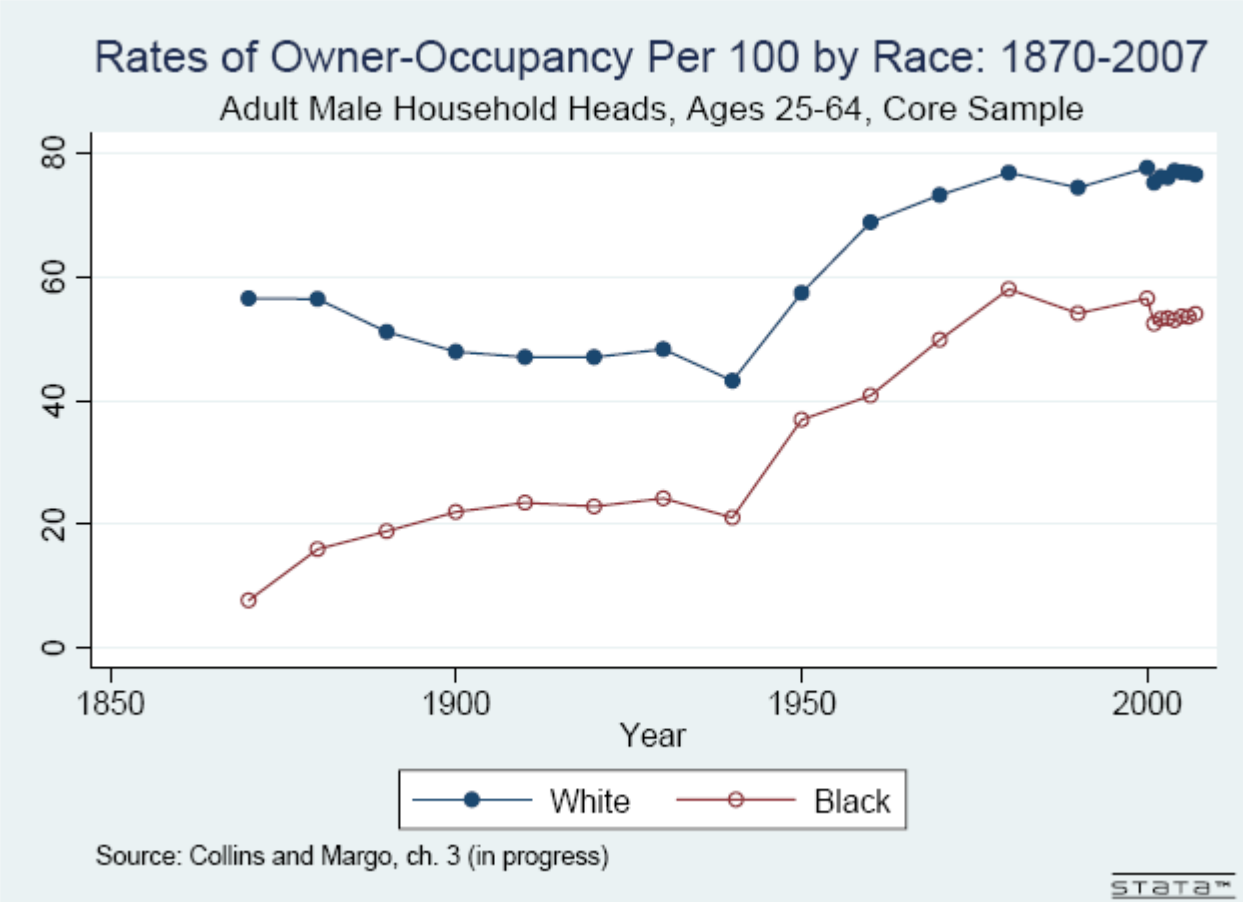
  - Cannot be important prior to WW2 because fraction of households paying income taxes is very small and very high income (and very high income would have owned anyway).
  - Little or no correlation between marginal tax rates and home ownership in post-1960 aggregate time series (Glaeser and Shapiro)
  - Matters quantitatively ONLY if itemize. Itemization rates increase in 1950s because value of standard deduction does not keep pace with inflation. Sample calculation using 1960 form 1040 suggests that median white household had positive (but small) net benefits from owner-occupancy.

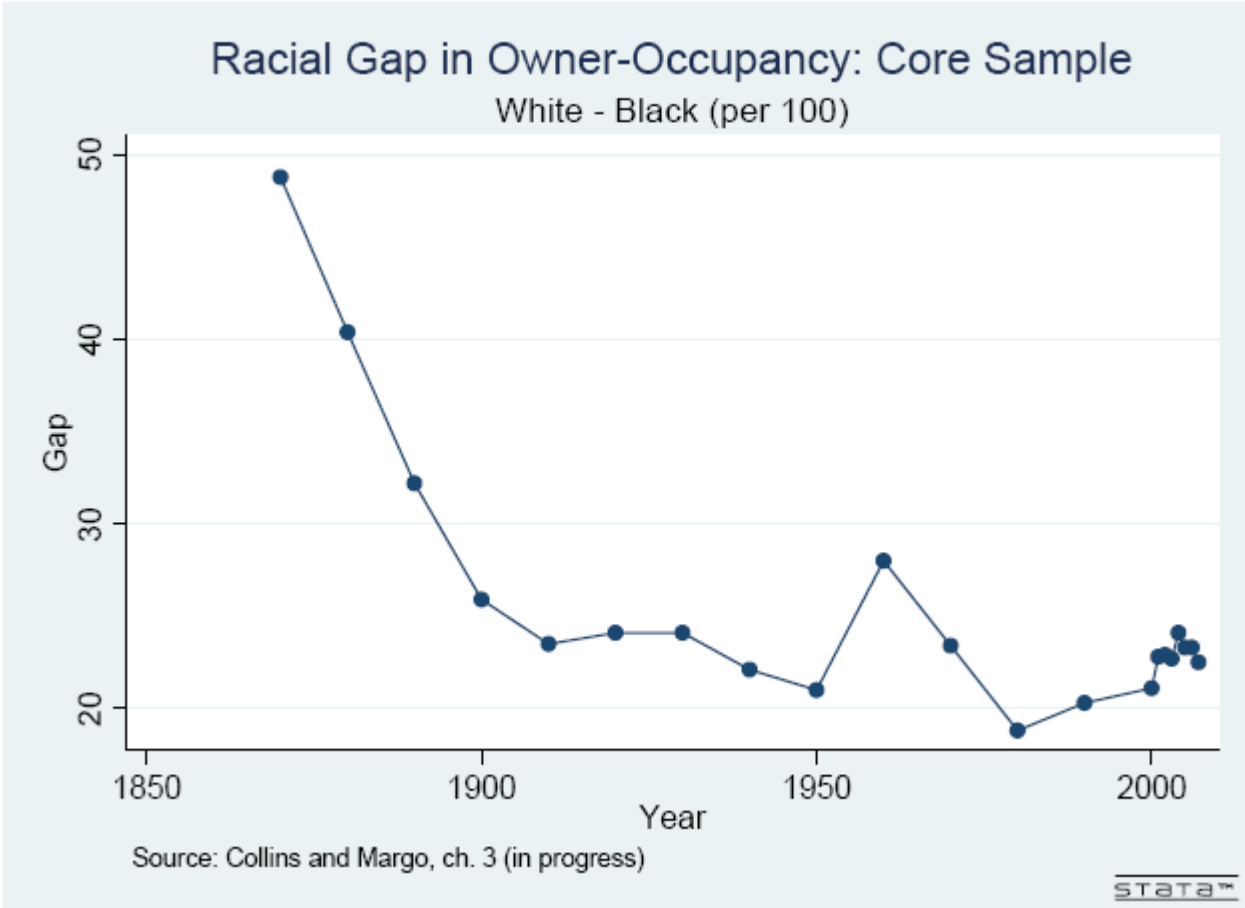
Race and Home Ownership in the Long Run (1)

- Census data on home ownership begin in 1890 (published volumes), IPUMS in 1900. BUT there is enough information to extend (reliably, we think!) series back to 1870 (or earlier for White households).
- "Core" sample: households headed by adult males who are not in school, in the labor force, ages 25-64. (Broader samples: all households or all individuals)
- In core sample:
  - AA: 8 percent in 1870; 54 percent in 2007.
  - White: 57 percent in 1870; 77 percent in 2007
  - So, in very long run, racial gap fell by 26 percentage points
- "All households" samples follow same general pattern, but extent of long-run convergence is muted. Ditto, "all individuals". Key reason: growth of female-headed households.
- Sensitivity analysis (a) borders and servants (b) group quarters. Adjusting for (a) + (b) will reduce extent of twentieth century convergence.

Race and Home Ownership in the Long-Run (2)

- Key result: 90 percent (or more) of long-run convergence took place before WWI. [Same result if logistic is used.]
- Some important decade-to-decade changes:
  - 1950s (gap widens)
  - 1960-80 (gap narrows)
- Two important follow-up questions:
  - (1) Why did racial gap narrow so much before 1910?
  - (2) What happened after WW2? (Why didn't gap narrow further?)


Rates of Owner-Occupancy Per 100 by Race: 1870-2007
Adult Male Household Heads, Ages 25-64, Core Sample
0
20
40
60
80
1850
1900
1950
2000
Year
White
Black
Source: Collins and Margo, ch. 3 (in progress)
stata™


Racial Gap in Owner-Occupancy: Core Sample
White - Black (per 100)
Gap
50
40
30
20
1850
1900
1950
2000
Year
Source: Collins and Margo, ch. 3 (in progress)
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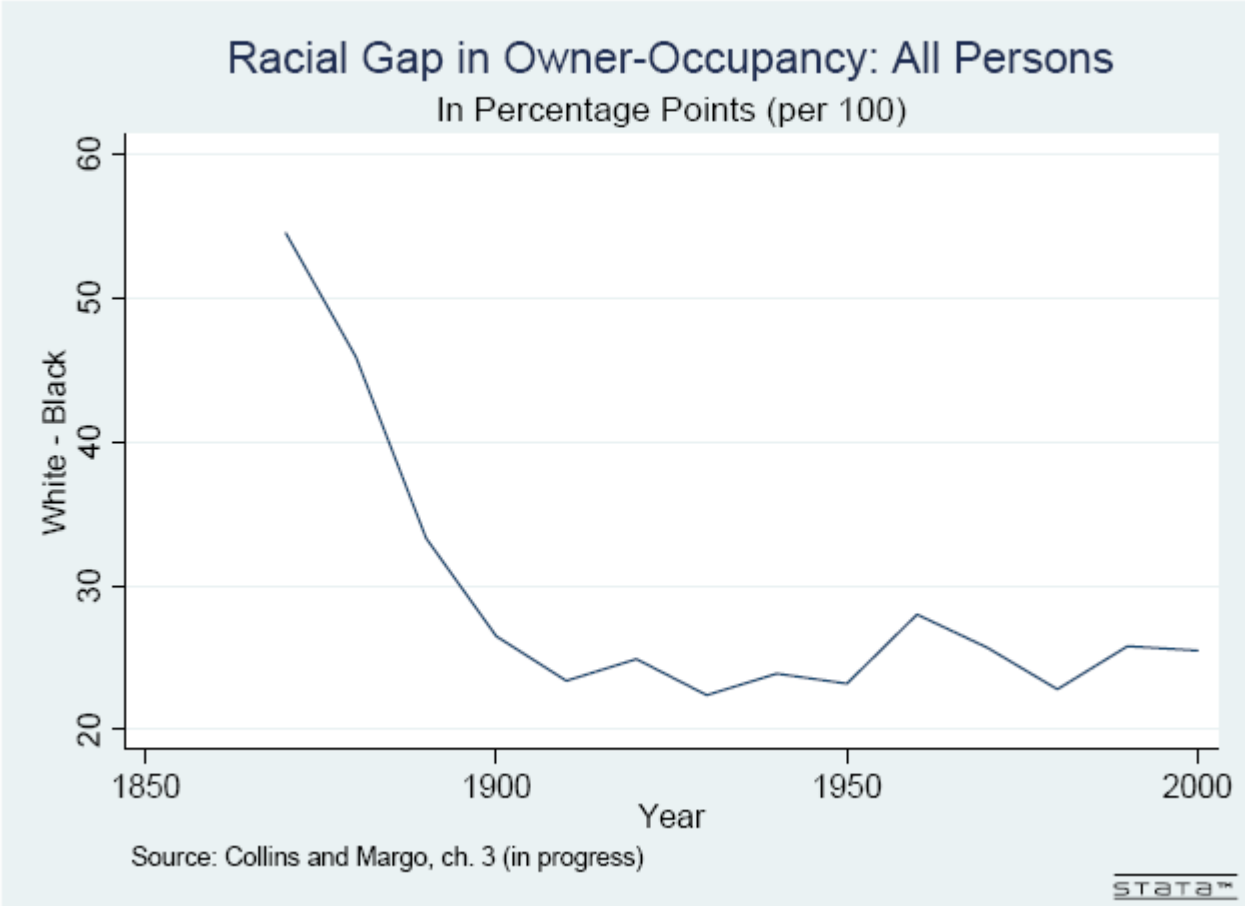

Racial Gap in Owner-Occupancy: All Persons
In Percentage Points (per 100)
White - Black
20
30
40
50
60
1850
1900
1950
2000
Year
Source: Collins and Margo, ch. 3 (in progress)
STATA

Door #1: Why Did the Racial Ownership Gap Narrow Before 1910? (1)

- Proximate cause: AA rate increases (2/3rd), W rate decreases (1/3rd)
- AA rate increases:
  - (1) Initial condition (wealth/income ratio low, incentive to accumulate wealth)
  - (2) Acquisition of human capital (labor market skills + literacy).
  - Note: Might also be a small effect of (isolated) Civil War-era land transfers (Miller 2007), need to investigate further
  - Evidence:
    - (1) Correlation: Among AA, ownership in 1900 (or 1910) IPUMS is a positive function of occupational status, literacy
    - (2) Causality: IV regression using "emancipation" dummy variable to instrument for literacy suggests strong positive effect on ownership
      - Details: AA born in South JUST AFTER Civil War experience discontinuous jump in literacy. Emancipate = 1 if AA x born in South x after 1865. First stage very strong,. 2SLS coefficient of literacy is positive and statistically significant ($\beta = 0.440$, s.e. = 0.198) explains 15 of 28 point ownership gap (46 percent) in regression sample (1900 IPUMS, adult male HH, ages 31-40, born in US).

Door #1: Why Did the Racial Ownership Gap Narrow Before 1910? (2)

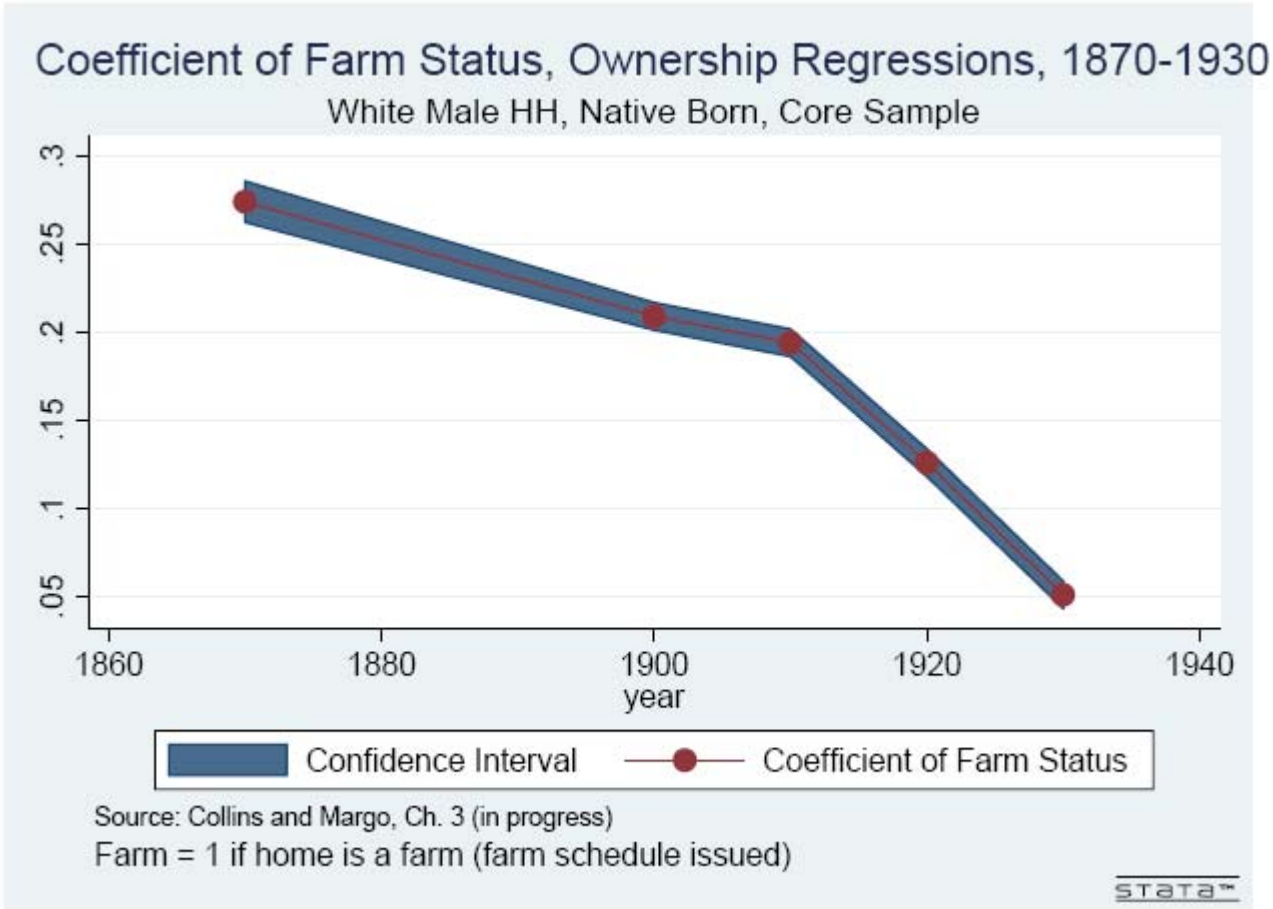
- Among whites, circa 1900, large farm-nonfarm ownership gap
  - 34 percentage points in core sample
  - 22 percentage points even in a regression with many control variables
- Federal government subsidized settlement and land ownership in nineteenth century
  - Public land sales, Homestead Act
  - Optimal ownership structure is (mostly) the "family farm"
  - Landownership = owner occupancy because farmers don't commute (yet)
- Highly developed farm credit market by post-bellum
  - Part of broader pattern in US history: commercial credit develops before consumer credit
  - Farm mortgage originating in Midwest in 1870s could be sold to a European investor
  - Nonfarm mortgage market significantly less evolved
  - Basic non-farm institution is "Building and Loan Association". Market is local. Significant down-payment constraint (50 percent).
- Implications for aggregate rate of owner-occupancy because of long-run shift of labor out of agriculture. Likely "treatment" effect larger for whites (next slide, please).

Door #1: Why Did the Racial Ownership Gap Narrow Before 1910? (3)

- Farm-nonfarm gap was positive but MUCH smaller for African-Americans
  - Arguably reflects persistent effect of initial condition; AA very unlikely to inherit land (or any other form of wealth). Still, AA farm ownership rises after 1870 faster than non-farm so small gap by 1900.
  - Southern farm credit market not as "thick" as non-South; qualitative evidence that AA faced discrimination (BUT conditional on ownership, racial gap in farm mortgages is small in 1900)
  - Most AA farmers were tenants (e.g., sharecroppers) and tenancy contracts (typically) included housing. Various explanations for race-tenancy association.
- Conventional wisdom: Pre-1890 building and loans expand but interrupted by economic downturn in 1890s. Many failures, so "credit crunch". Building and loans recover sometime after turn of century, interrupted by WWI. Rapid expansion in 1920s, along with other forms of consumer credit (Snowden, Olney).
- Bigger point: 20th century evolution of mortgage markets facilitated **nonfarm** owner-occupancy and, more generally, owner-occupancy when home was distinct from location of (self-employed) business activity.

Door #1: Why did the Racial Ownership Gap Narrow Before 1910? (4)

- Measuring change in the farm-nonfarm gap: Ownership Regressions, 1870-1930
  - Using IPUMS, Farm = 1 if farm schedule = 1.
  - Core sample, but white native born. Dummies for single years of age, literacy, urban status, state of birth, county fixed effects.
  - Works (sort of):
    - Coefficient on Farm=1 declines from 1870-1900, 1920-30, stable in 1900, post-1910 linear decline. See graph.
    - Similar if marital status dummies included. Also similar if control for occupational status.


Coefficient of Farm Status, Ownership Regressions, 1870-1930
White Male HH, Native Born, Core Sample
.05
.1
.15
.2
.25
.3
1860
1880
1900
1920
1940
year
Confidence Interval
Coefficient of Farm Status
Source: Collins and Margo, Ch. 3 (in progress)
Farm = 1 if home is a farm (farm schedule issued)
stata

Door #2: After WW2 (1)

- Home ownership rates plummet in 1930s
- Federal government gets into the act, known racial biases
  - Widening racial gap from 1940-60, concentrated in 1950s
  - 1950s: falling inter-urban commuting costs, baby boom → increased demand for single-family homes. Not much racial income convergence in 1950s, hostility to black suburbanization, so effect is larger for whites.
  - 1960-1980: (a) whites flee central cities, houses stay put, some purchased by AA; (b) 1963-75, substantial racial income convergence; (c) "fair housing" and anti-discrimination legislation

- 1980 ownership regression (IPUMS) using quarter of birth as IV for years of schooling.
  - Sample: adult male HH, ages 30-39, born in US, positive earnings in census year, born in 4th quarter OR 1st quarter. Dummy variables for age, race, state of birth.
  - 2SLS $\beta = 0.117$ (s.e. = 0.074), cuts racial gap from 22 to 11 points.

- **PREDICTION: US would have seen MORE racial convergence in owner-occupancy after 1980 IF there had been more racial convergence in economic resources (proxy is educational attainment).**

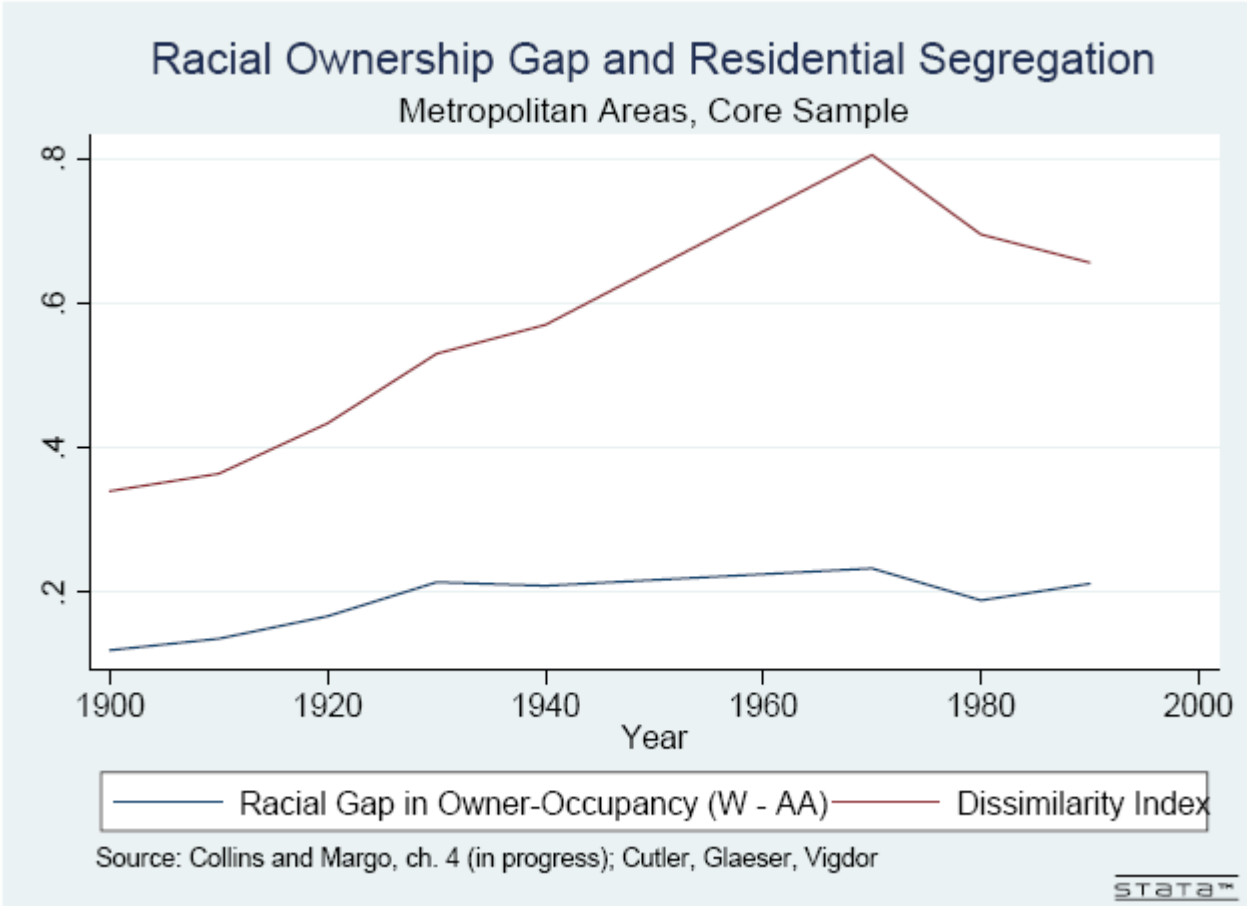
Door #2: After WW2 (2)

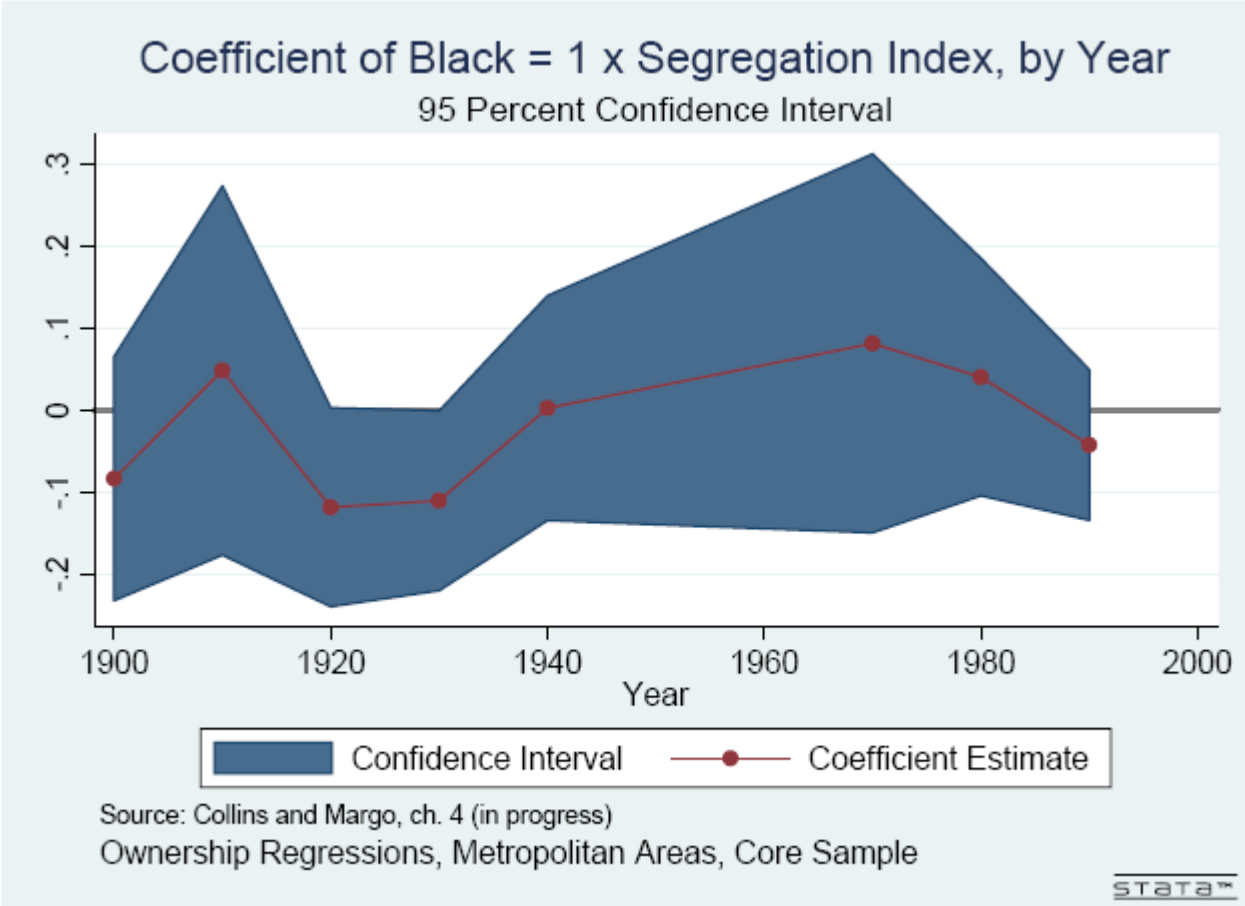
- What about fair housing laws, etc?
  - Some effects may be visible in the data (black suburbanization increases after 1970)
  - But, relative to long run, arguably small overall given stability of homeownership rates by race since 1980.

- What about tax subsidies?
  - May explain some of the widening of the racial gap in the 1950s (but probably small).
  - For AA, value of homes relative to incomes (1960 IPUMS) makes itemization almost always unprofitable. For whites, some (small) benefit to itemization at median and above (but ownership already pretty common above the median prior to WW2). Itemization rates rise in 1950s.
  - HOWEVER, for the most part post-1950 changes in marginal tax rates and ownership are (close to) uncorrelated in aggregate time series. More work needed.

Segregation and Ownership

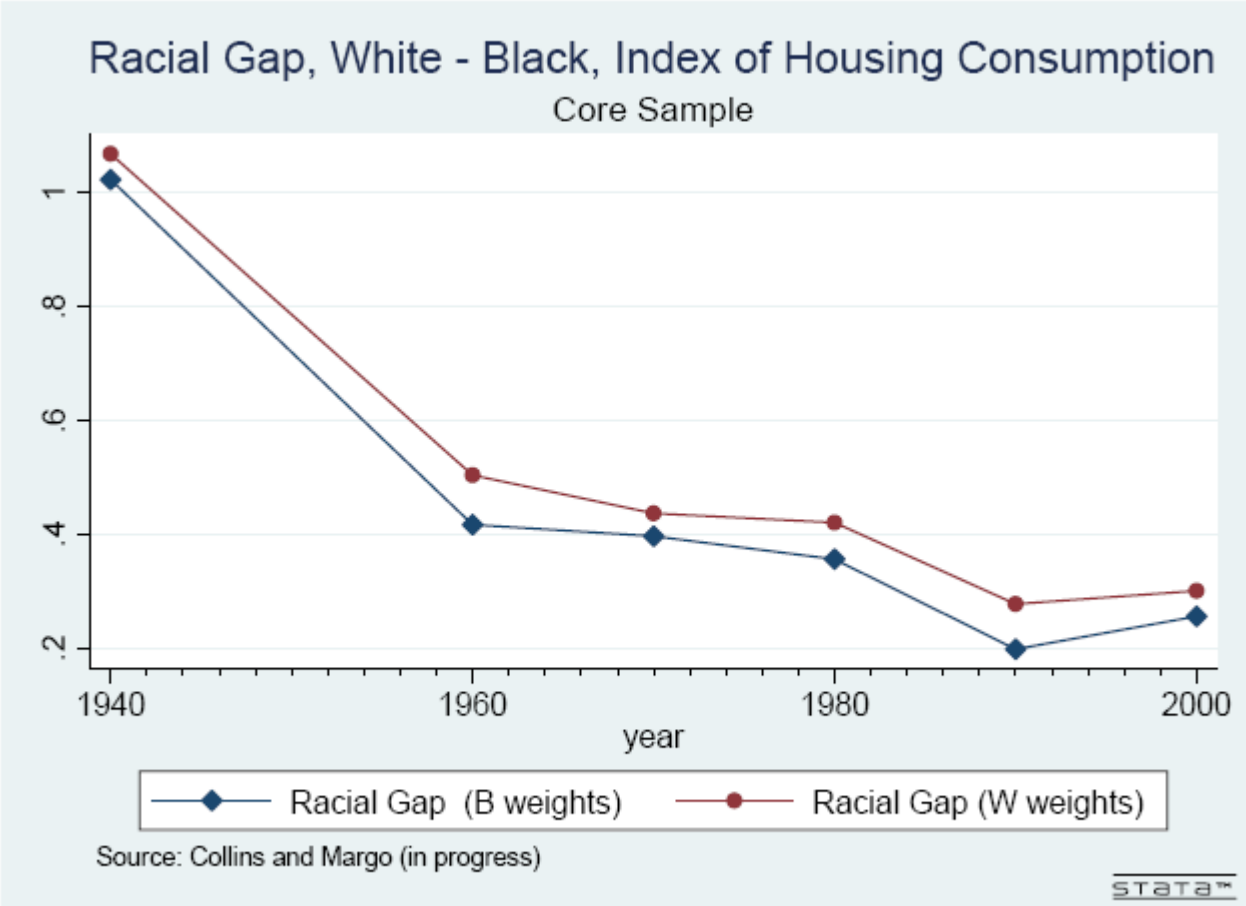
- Over course of past century, AA move from rural South to urban areas. Initial rates of AA owner-occupancy very low. Not surprising (locate near CBD, high rates of mobility, among many other factors).
- Residential segregation rises, peaking in 1970, then falls from 1970-present.
  - Anecdotal evidence that segregation limited AA access to housing, particularly "middle class" residential areas. Early twentieth century segregation ordinances, restrictive covenants, violence and intimidation. In metro areas, ownership gap widens from 1900-1930.
- For metropolitan sample (IPUMS), we estimate ownership regressions with SMSA dummies, individual characteristics, and black x dissimilarity index. This is a difference-in-difference specification (AA – W, more vs. less segregation).
  - Dissimilarity indices from Cutler, Glaeser, and Vigdor.
- Some evidence of negative effect on ownership before WW2, but post-WW2 coefficients are small and statistically insignificant.
  - Using 1920 coefficient, can explain about 23 percent of widening ownership gap in metro areas from 1900-1930.
  - However, post WW2, black-white ownership gap is roughly the same, no matter what the level of segregation.
  - Caveat: segregation may be endogenous (BUT there is a simpler explanation – "filtering" – for post WW2).


Racial Ownership Gap and Residential Segregation
Metropolitan Areas, Core Sample
.2
.4
.6
.8
1900
1920
1940
1960
1980
2000
Year
Racial Gap in Owner-Occupancy (W - AA)
Dissimilarity Index
Source: Collins and Margo, ch. 4 (in progress); Cutler, Glaeser, Vigdor
stata


Coefficient of Black = 1 x Segregation Index, by Year
95 Percent Confidence Interval
.3
.2
.1
0
-.1
-.2
1900
1920
1940
1960
1980
2000
Year
Confidence Interval
Coefficient Estimate
Source: Collins and Margo, ch. 4 (in progress)
Ownership Regressions, Metropolitan Areas, Core Sample

Detour: Housing Consumption

- Owner occupancy is a "0-1" variable. Measures tenure status, **NOT** housing "consumption". (Very) possible for racial gap in housing consumption to narrow while racial gap in owner-occupancy is unchanged.
- (Very) provisional. Assume that Ln rental price (imputed or actual) = linear index of housing services (standard hedonic model).
- Racial gap in housing consumption ≈ p_w x ln (V_w/V_{AA}) + (1- p_w) x ln (r_w/r_{AA}).
  - This is (just) geometric mean of (W/AA) ratio of (average) owner-occupied housing values and rent using W weights. P = owner-occupancy rate. Can also be computed using AA weights.
  - "≈" because **VERY** strong assumptions for "=" to be true
- National index can be computed for 1940-2000 (except 1950) from IPUMS. See next graph.
  - Substantial racial convergence in housing consumption index from 1940-2000, direct evidence of convergence in housing characteristics (eg. indoor plumbing, # of rooms).
  - Most of the convergence in the index occurred from 1940-60. Happens within region (South) and across region. 1940-60 convergence may be overstated (post-WW2 integration of South into national economy may have raised Southern housing prices, effect is larger for AA in aggregate).
  - In urban areas, AA/W housing values take a detour after 1970. Why?


Racial Gap, White - Black, Index of Housing Consumption
Core Sample
.2
.4
.6
.8
1
1940
1960
1980
2000
year
Racial Gap (B weights)
Racial Gap (W weights)
Source: Collins and Margo (in progress)
stata™

AA/W Value of Owner-Occupied Housing: Central Cities

- In central cities value ratio rises from 0.51 in 1940 to 0.69 in 1970, but then DECREASES to 0.58 in 1980 and to 0.53 in 1990.
- Although segregation appears unrelated to *ownership* gap after WW2, there is an association with AA/W *value gap* in 1980: racial value gap widens as metro-area segregation INCREASES. NOT true in 1970 (or earlier).
- Post-1970 negative correlation between value ratio and segregation emerges more strongly in cities that had a riot in the 1960s. Is this causal?
- IMPORTANT: MANY other relevant shocks, BUT we have an "identification strategy" for riots.

Riots and Property Values

- Moderate-to-severe riots “caused” decreases in urban owner-occupied housing values, 1960-70 and 1960-80
- Effects are larger for African-American owned homes because riot activity was geographically proximate to African-American neighborhoods and effects decayed with distance from epicenter.

History

- U.S. has long, terrible history of race-related “civil disturbances”. Pre-1960s is mostly white on black violence.
- How were the 1960s different? Hundreds of riots within a few years, peak in 1968 (King assassination)
- Definition of a riot (Spilerman): spontaneous outburst” of violence or property damage involving at least 30 participants (some African-American), outside a school setting and in cities with at least 25K residents
- Data on riots from Gregg Carter: counts of deaths, injuries, arsons, arrests, days of rioting, by event
- Sources: Congressional reports, NY Times, Lemberg Center for the Study of Violence

Empirical Strategy

- Use variation in riot "severity" to gauge impact on economic outcome. Riot severity depends on arrests, deaths, acts of arson, injuries.
- Unit of observation is a city. Economic outcome: median value of owner-occupied housing (African American or overall).
- Index: continuous measure of riot severity. Summed over all riots, index = 5. Index is cumulative over the 1960s.
- Severity Group Index (0, 1 = moderate, 2 = severe, about 90th percentile)
- Assumptions are that effects are concentrated where riots occurred and are an increasing function of severity
- Use difference-in-difference to compare change between 1960 to 1970, or 1960 to 1980 in riot-afflicted metro areas versus no-riot.

A Second Approach: Instrumental Variables

- Our “before-after” strategy “works” if riots were as good as “randomly assigned”
- (Huge) sociology literature is consistent with random assignment IF we also control for the absolute size of African-American population and region (Spilerman)
- Problem: difficult to convince a true skeptic (eg. economists) that riots were exogenous

Instrumental Variable Approach

- IV #1: rainfall in April 1968 (negatively related)
  - Martin Luther King is assassinated on April 4, 1968
  - King assassination is a nationwide “spark”
  - Rainfall in 1968 is a significant (negative) predictor of cumulative severity
  - Related evidence: “the riot that didn’t happen” in Detroit 1966, Benton Harbor 2003
  - Important to use April 1968 rainfall: NOT true for rainfall in general or April 1967 rainfall

- IV #2: city manager dummy (negatively related)
  - cities with city managers more “professional” (e.g., better run police departments)

Tables 1 and 2

- Table 1: Summary statistics of riot data, 1964-71
  - Years of peak activity: 1967 and 1968 (nearly 40 percent)

- Table 2 (not shown): Summary statistics for city-level change in property values, 1960-70 and 1960-80 and 1960 city characteristics

  - Negative association between riot severity and change in log median value of African-American (and overall) home values
  - Difference between high and low severity, African-American home values, change from 1960-80 is -0.202 or -18 percent

TABLE 1
THE RIOTS OF THE 1960S, FREQUENCY AND SEVERITY

	1964	1965	1966	1967	1968	1969	1970	1971	Total
Riots	11	11	53	158	289	124	68	38	752
Days of riots	34	20	109	408	739	284	126	82	1,802
Killed	2	35	11	83	66	13	13	5	228
Injured	996	1,132	525	2,801	5,302	861	710	414	12,741
Arrested	2,917	4,219	5,107	17,011	31,680	4,730	2,027	1,408	69,099
Occurrences of arson	238	3,006	812	4,627	6,041	369	283	459	15,835
Index Value	0.163	0.504	0.275	1.349	1.956	0.374	0.230	0.149	5.000
Northeast	0.145	0.003	0.027	0.419	0.288	0.125	0.078	0.023	1.107
Midwest	0.008	0.011	0.180	0.750	0.501	0.079	0.042	0.004	1.574
South	0.010	0.001	0.019	0.107	1.055	0.115	0.104	0.121	1.532
West	0.000	0.489	0.050	0.073	0.112	0.056	0.006	0.001	0.786

Notes: See the text for the definition of a riot. Each riot (j) is assigned a value $S_j = \sum_i (X_{ij} / X_{iT})$ where X_{ij} is a component of severity (days of rioting, injuries, arrests, deaths, and arsons) and X_{iT} is the sum of X_{ij} across all riots. Summed over all riots in the dataset, there are five total index points (a reflection of the five components that enter the index).

Source: The data underlie Carter, "1960s Black Riots," and were received through personal communication.

Regression Analysis

- Tables 3a, 3b (standard regression): negative effect of riots on values of African-American owned homes and on overall values.
  - Effects larger for African-American owned property than overall
  - For African-American owned homes, effects larger for 1960-80 than 1960-70; some “regression to the mean” for overall

- Instrumental variable coefficients > OLS
  - Table 5: First Stage (predicting riot severity)
  - Table 6: 2SLS estimates
  - How important were the riots? A VERY conservative estimate is that they lowered African-American housing values by 10 percent in 1970
  - Offsetting effect: small positive effect on home ownership

TABLE 3A
RIOTS AND PROPERTY VALUES, CITY-LEVEL DATA, 1960–1970

	Black-Owned Properties (1)	Black-Owned Properties (2)	All Properties (3)	All Properties (4)
High Riot Severity	–0.148	–0.111	–0.0978	–0.0961
	(0.0400)	(0.0365)	(0.0352)	(0.0410)
Medium Riot Severity	–0.0669	–0.0621	–0.0405	–0.0424
	(0.0259)	(0.0229)	(0.0226)	(0.0222)

TABLE 3B
RIOTS AND PROPERTY VALUES, CITY-LEVEL DATA, 1960–1980

	Black-Owned Properties (1)	Black-Owned Properties (2)	All Properties (3)	All Properties (4)
High Riot Severity	–0.202	–0.139	–0.0804	–0.0630
	(0.0629)	(0.0593)	(0.0653)	(0.0652)
Medium Riot Severity	–0.100	–0.0844	–0.0771	–0.0748
	(0.0412)	(0.0391)	(0.0371)	(0.0383)

TABLE 5
RIOT SEVERITY AND INSTRUMENTAL VARIABLES

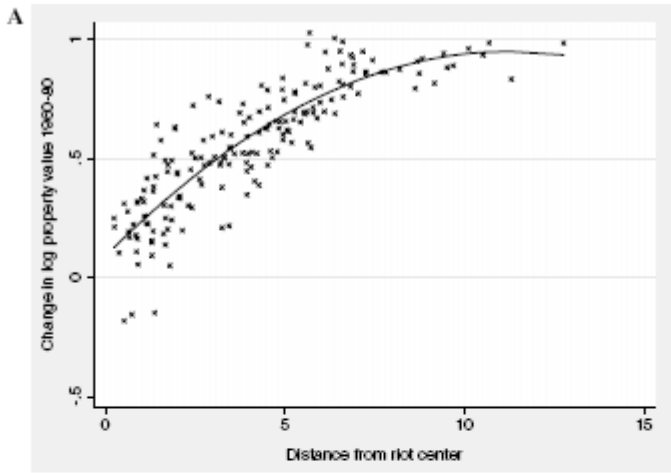
Dependent Variable	Severity Group (1)	Severity Group (2)	Severity Group (3)	Severity Group (4)	Severity Index (5)
Rainfall, April 1968	–0.109	–0.126	–0.106	–0.0934	–0.0140
	(0.0335)	(0.0404)	(0.0354)	(0.0327)	(0.00539)
Rainfall, annual avg.	—	–0.00588	—	—	—
		(0.00834)			
Rainfall, April avg.	—	0.145	—	—	—
		(0.0938)			
Rainfall, April 1967	—	–0.0375	—	—	—
		(0.0323)			
City manager	–0.229	–0.193	–0.229	—	–0.0250
	(0.140)	(0.146)	(0.141)		(0.0143)

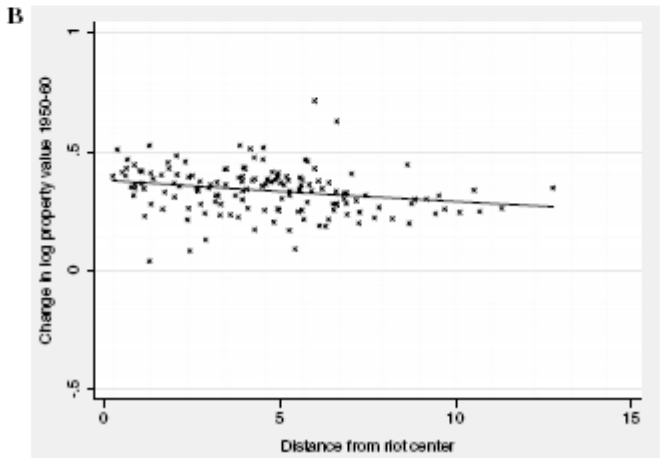
TABLE 6
RIOTS AND BLACK-OWNED PROPERTY VALUES, OLS AND 2SLS ESTIMATES

	1960–1970			1960–1980		
	OLS (1)	2SLS (2)	2SLS (3)	OLS (4)	2SLS (5)	2SLS (6)
Severity group (0–2)	–0.0716	–0.191	–0.165	–0.101	–0.237	–0.220
	(0.0185)	(0.0913)	(0.0856)	(0.0281)	(0.133)	(0.129)

Census Tract Analysis

- Why were effects larger on African-American owned homes?
  - Significant fraction of African-Americans lived in vicinity of riots AND effects declined with distance from epicenter.
- Census tract analysis for five cities
  - Cleveland, Detroit, Los Angeles, Newark, DC: population and housing values fall in riot vs. non-riot tracts. Eg. In Cleveland, housing values in riot tracts fall by 24 percent relative to non-riot tracts between 1960 and 1980).
- Detailed analysis for Cleveland (Collins and Smith, *Explorations in Economic History*, 2007)
  - Distance from ground zero is a strong positive predictor of change in property values from 1960-80 but NOT 1950-60
- Underlying economics
  - Decline in relative housing demand due to loss of amenities, increase in insurance costs, taxes (cities with riots face higher borrowing costs), etc.


A
Change in log property value 1960-90
1
.5
0
-.5
0
5
10
15
Distance from riot center


B
Change in log property value 1950-60
1
.5
0
-.5
0
5
10
15
Distance from riot center

Concluding Remarks

- History matters: long-term perspective highlights key role of “permanent income” in facilitating African-American homeownership.

- Remaining task: Finish the book (please)!

If There is Time: Related Work on Spatial Mismatch (Boustan and Margo, *Journal of Urban Economics*, forthcoming

- As previously noted, beginning in early 20th century African-Americans move from rural South to metropolitan areas. African-American neighborhoods form "downtown" in close proximity to manufacturing and similar sources of employment

- In 1950s employment in metropolitan areas begins to decentralize (move to the suburban ring). Initially African-Americans face severe difficulties (discrimination from real estate agents, banks, intimidation etc.) in "following" jobs to the suburbs. This, according to John Kain created a "spatial mismatch" between the location of African-American neighborhoods and location of jobs

- Withdraw from LF due to expense of reverse commuting or lack of information about openings. Kain, 1968; Ellwood, 1986; Raphael, 1998; Ross, 1998; Weinberg, 2000, 2004a, 2004b etc.

Two contributions of this paper

(1) Add a historical dimension

- 1940/50: Blacks, whites and jobs all located in cities
- 1960/70: Whites to suburbs; employment follows; blacks remain in cities
- 1980-onward: Blacks begin moving to suburbs too

2) Focus on job choice rather than participation

- Concern: African-Americans in segregated areas are "negatively selected". Could explain low employment rates.
- Ideal: Centralized job that is "positively selected" on ability.
- Solution: Certain jobs in postal service are highly centralized. Civil service exam for entry. Black postal workers earn above nat'l median

We show that….

(1) Black postal employment increased dramatically relative to whites from **1940 to 1970**

(2) This increase was larger in **segregated metro areas** where blacks tend to be concentrated in the central city

(3) This increase occurred primarily in centralized **sorting and processing**, not in mail carrying, which is geographically dispersed.

(4) The relationship between segregation and black postal employment, while still present today, has declined since 1970.

We conclude that spatial mismatch was an important factor in the 1950s and 1960s, but is less central today.

Postal employment fixed in central cities

- In early 20th century, inter-city mail transported by rail. Mail processing and distribution centers (PDC) near central depots

- In 1970s, USPS considers moving some facilities to suburban locations near airports and interstate exits/exchanges

- Plant closing process is highly contentious and subject to legal, regulatory, and political delays → to this day, PDCs remain mostly centralized

Location: Centralized postal employment

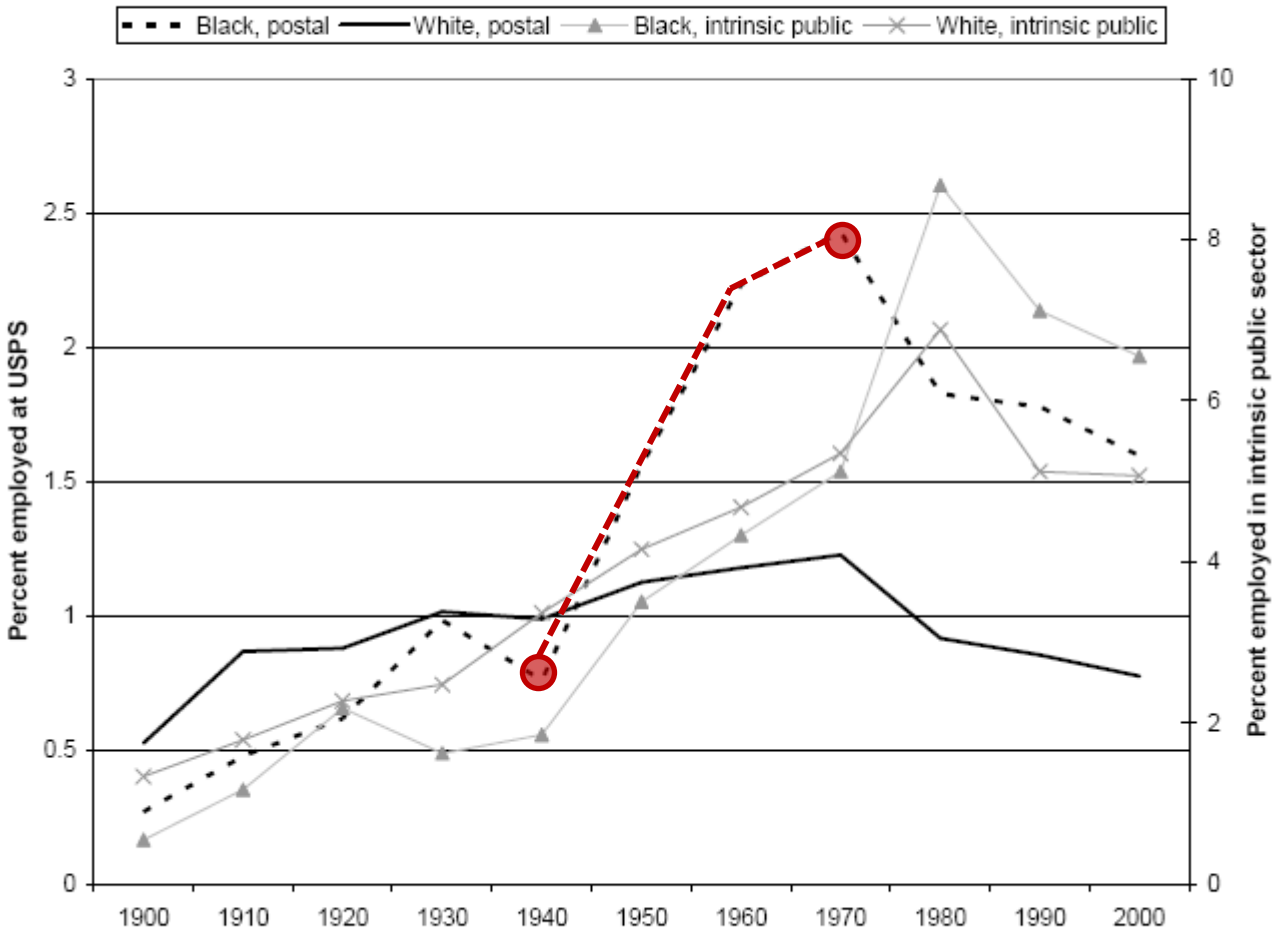
Table 2: The location of the typical postal job, 1970 and 2000

A. Place of work, 1970 Census		**B. P&DC location, 2000**	
Occupation	% in center city		
Postal work, non-carrier	70.87	Share in center city	80.00
Mail carrier	55.56	Average % black in neighborhood	37.83
		(County, % black)	(27.85)
Other, public sector	56.23		
		Highest % black in neighborhood	61.74
Private sector	53.34		

Panel A: Means are calculated for all metropolitan areas identified in the 1970 IPUMS. Mail carriers are classified using the 1950 occupation codes (=335). Public sector employees are identified using the class of worker variable. Panel B: The figures are based on 145 processing and distribution centers (P&DC) whose current addresses were located from a variety of government sources. The facility's neighborhood includes its own Census tract and all adjacent tracts. Means are weighted by the black population share in the county.

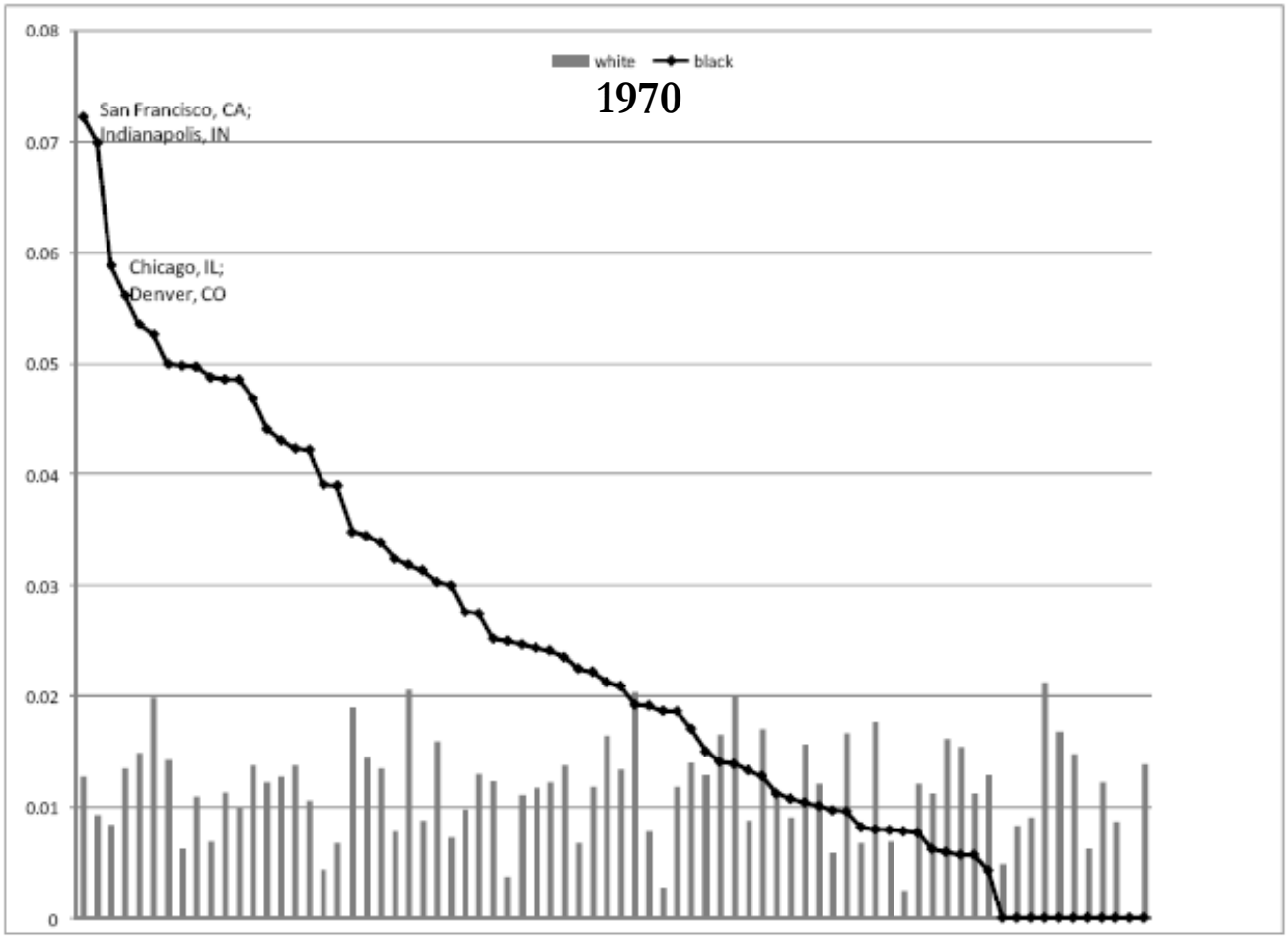
Black postal employment increased from 1940-1970 (1) relative to whites and (2) relative to other public sector

Figure 1: The growth in postal and other public employment by race, 1900-2000



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

Substantial cross-sectional variation in black postal employment (Not true for whites!)



Notes: The postal shares are calculated from the Census micro data for the sample of full-time, full-year employees. The figure contains the 76 metropolitan areas that have at least 50 black observations in the sample in 1970. Metropolitan areas are arrayed from highest black postal share to lowest.

Data and specification

$= 1$ if work at $USPS_{imt} = \alpha_m + \beta(segregation_{mt}) + \gamma(black_i \cdot seg_{mt}) + \ldots + \varepsilon_{imt}$

- IPUMS (1940-2000); USPS only civilian employer identified in Census
- Hypothesis: $\gamma > 0$ by 1960
- Segregation: Dissimilarity index. Ranges from 0 (perfect integration) to 1 (perfect segregation).

<u>Data problems</u>:

- Dissimilarity measured for city in 1940-50 BUT for SMSA, 1960-2000
- 1960 IPUMS does NOT identify SMSA. We run state-level analysis.

(2) Black employment at USPS positively related to metro segregation, especially in 1960 and 1970

Dependent variable = 1 if employed at USPS

Sample	1940	1950	1970	1980	1990	2000
A. All available areas; One area fixed effect						
Segregation	-0.001	-0.012	-0.034	-0.016	-0.013	-0.014
	(0.007)	(0.008)	(0.010)	(0.005)	(0.005)	(0.005)
Seg · black	0.012	0.025	0.118	0.056	0.049	0.041
	(0.009)	(0.018)	(0.034)	(0.025)	(0.012)	(0.010)

- Same results when add year-specific metro area fixed effects (Can only identify interaction)

- Same results when restrict to 45 metro areas available in every year

- Similar results in state-level regressions. Can add 1960. 1960 coefficient = 0.116 (0.033)

Consistent cross-section finding: Segregation matters when employment is outside city

1980	
% emp in city	0.162
	(0.090)
Seg index	0.174
	(0.065)
Seg · % emp in city	-0.223
	(0.128)

- Consider city A and city B separated by one SD diff in % emp in cc (55% to 71%)
- Moving from 0→1 on segregation index leads to:
  - 5.1 point increase in black postal employment in city A
  - 1.6 point increase in city B

(3) This pattern only holds for postal clerks, not mail carriers

Coefficients are from the interaction of black · segregation index

Dependent variables	1940	1970	1990
Center city			
Postal, non-carrier	0.019	0.101	0.050
	(0.013)	(0.010)	(0.005)
Other public, above median	---	0.100	0.079
		(0.027)	(0.015)
Suburbs			
Postal, mail carrier	-0.009	0.012	-0.001
	(0.009)	(0.007)	(0.004)
Other public, below median	---	-0.095	-0.056
		(0.025)	(0.014)

Challenges alternative explanation based on association between segregation and private sector racism. If so, we would expect comparable effects throughout post office and public sector.

Concluding Remarks #2

- We can detect evidence of spatial mismatch using a non-standard outcome measure (postal employment).
- Mismatch was particularly severe in 1960 and 1970, as employment moved out to suburbs but blacks were yet unable to follow.
- Connection to racial gap in housing values still needs to be made (in the book).