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ABSTRACT

We present estimates of home ownership for African-American and white households from 1870 to 2007. The estimates pertain to a sample of households headed by adult men participating in the labor force but the substantive findings are unchanged if the analysis is extended to all households. Over the entire period African-American households in the sample increased their home ownership rate by 46 percentage points, whereas the rate for white households increased by 20 percentage points. Thus, in the long run, the racial gap declined by 26 percentage points. Remarkably, 25 of the 26 point long-run narrowing occurred between 1870 and 1910. Since 1910, both white and black households have increased their rates of homeownership but the long-run growth in levels has been similar for both groups, and therefore the racial gap measured in percentage points was approximately constant over the past century.

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We present estimates of home ownership for African-American and white households from 1870 to 2007. These estimates, which pertain to a core sample of households headed by adult men, update and extend an earlier paper's analysis (William J. Collins and Robert A. Margo 2001) with figures for the pre-1900 and post-1990 periods, and for 1950. Long-run patterns of racial differences and trends in home ownership provide a window on wealth accumulation and standards of living; the nature and implications of discrimination; and the influence of long-term economic trends, specific economic events, and government policy on housing market outcomes. Our goal is to measure and succinctly explain salient long-term changes in home ownership.

Over the entire period African-American households in the core sample increased their home ownership rate by 46 percentage points, whereas the rate for white households increased by 20 percentage points. Thus, in the long run, the racial gap declined by 26 percentage points. Remarkably, 25 of the 26 point long-run narrowing occurred between 1870 and 1910, a novel finding that emerges from our new estimates for the pre-1900 period. Since 1910, both white and black households have increased their rates of homeownership, but the long-run growth in levels has been similar for both groups, and therefore the racial gap measured in percentage points was, to a first approximation, constant over the twentieth century. We discuss several factors that tended to narrow or widen the ownership gap at various historical junctures.

I. Data and Long-Run Trends

The federal census provides the necessary basis to construct long-run time series of owner-occupancy rates for private households. We use data from the Integrated Public Use Micro-data Series (IPUMS) and published census volumes to estimate rates of ownership for census years from 1870 to 2000 (Steven Ruggles et al. 2008). For 2007, we rely on the American Community Survey (ACS). See the Appendix for further details.

Our estimates of ownership begin in 1870, the first census year after the Civil War in which African-Americans were enumerated as free persons, and end in 2007, just before the onset of the recent housing and financial market crises. The 1890 census was the first in American history to inquire specifically about home ownership status. The census asked questions about real estate ownership in 1850, 1860, and 1870, and we believe it is possible to adjust these data to construct plausible estimates of owner-occupancy for the pre-1890 period.

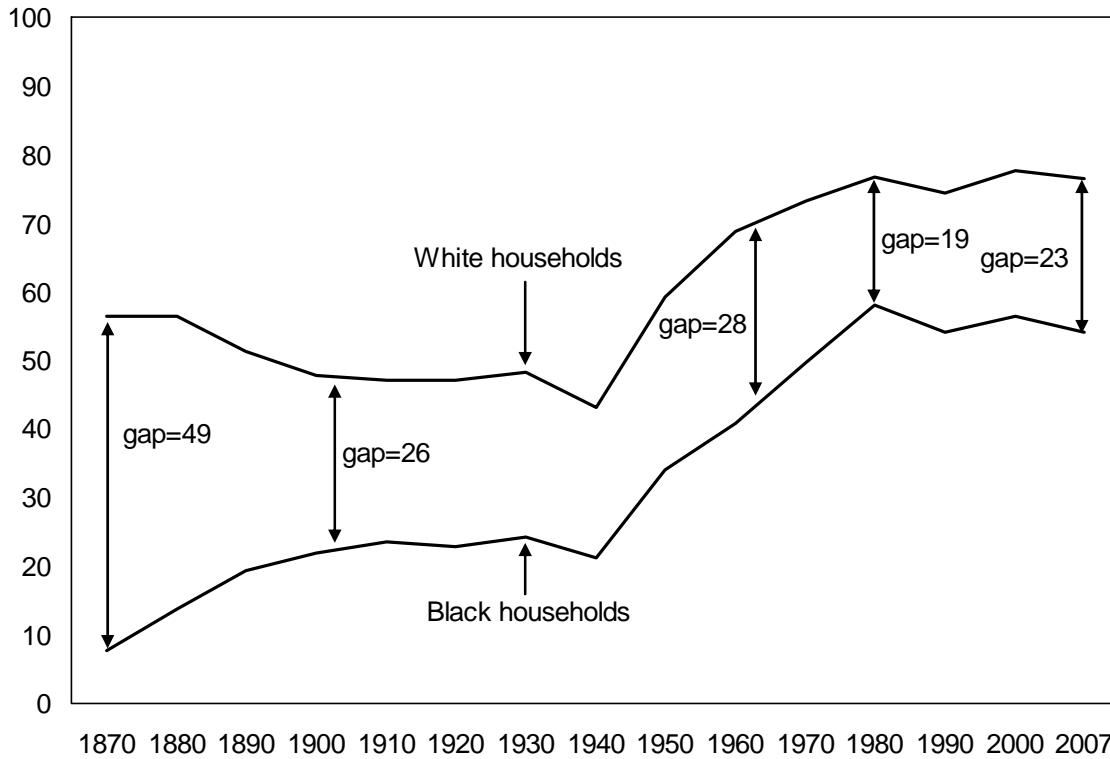
To be included in the core sample used in this paper, the household head must be male, in the labor force, not currently enrolled in school, and between the ages of 25 and 64. We focus on this particular slice of the population because it has been intensively studied by scholars interested in the long-run evolution of racial differences in income and educational attainment. Although there are some differences in magnitudes, the fundamental time-series patterns revealed by the core sample are not changed appreciably by broadening the sample to include all household heads (Appendix Tables 1 and 2).

Figure 1 displays estimates of owner-occupancy by race. In 1870, the rate of owner occupancy for African-Americans in the sample was a scant 8 percent. In 2007, the most recent year in the series, the rate was 54 percent. Thus, over the approximately 140 years covered by our series, African-American households represented in the core sample increased their rate of owner-occupancy by 46 percentage points. Broadly speaking, the data reveal two periods of rising owner-occupancy for black households. During the first period, 1870 to 1910, the ownership rate increased by 16 percentage points, from 8 to 24. During the second period, 1940 to 1980, the black ownership rate increased by 37 percentage points, and then declined slightly.

While the long-run dynamic for blacks was generally upward, ownership for whites followed a U-shaped pattern. In 1940, the white rate of owner occupancy stood at 43 percent, 13 percentage points below the rate in 1870. The white owner-occupancy rate rose by about 34

percentage points between 1940 and 1980, with the gains concentrated before 1960 (26 percentage points). After 1980, the white rate remained steady at around 77 percent.

Figure 1: Rates of Owner-Occupancy, 1870-2007:
Households Headed by Males, Ages 25-64, in Labor Force, Not in School (“Core Sample”)



The racial gap in percentage points is also labeled in Figure 1. From 1870 to 2007, the racial gap fell from 49 to 23 percentage points. The pace of racial convergence was much more rapid between 1870 and 1910 (about 25 percentage points) than after 1910. Approximately two-thirds of the narrowing of the racial gap before 1910 can be attributed to the increase in the black ownership rate with the remainder due to the fall in the white rate.

II. Structural Change, Segregation, and Racial Convergence in Ownership up to 1940

According to the conventional economics of home ownership, households choose housing characteristics and housing tenure to maximize life-cycle utility, subject to the

household's inter-temporal budget constraint. The decision to owner-occupy versus rent will vary with the type of housing demanded, among other factors. Broadly speaking, single-family detached housing units will be owner-occupied more frequently than units in multi-family housing. The demand for single-family detached housing is positively related to the household's permanent income and influenced by tax policy and institutional features of mortgage markets.

This simple framework suggests that narrowing racial gaps in household income and educational attainment—observable characteristics that are strongly correlated with permanent income—should be correlated with racial convergence in owner-occupancy. At first glance, however, the framework does not seem very satisfactory for interpreting the historical data. While there is evidence that racial differences in incomes and education narrowed between 1870 and 1910 (Margo 1984, Collins and Margo 2006), the extent of convergence in owner-occupancy over this period is far out of proportion. Moreover, both racial groups increased their incomes over this period, which does not square with the apparent decline in white owner-occupancy. Finally, there has been substantial racial convergence in incomes and schooling from the early twentieth century to the present, but our data show, at best, limited racial convergence in owner-occupancy. In particular, the black-white income ratio increased significantly between 1940 and 1960, and yet the racial ownership gap widened.

The conventional economics of home ownership was developed with post-war, non-farm housing markets in mind. This framework is inadequate to fully understand the dynamics of long-term racial change for two reasons. First, it neglects the role played by the long-term shift of households out of agriculture which was racially distinct in its implications for home ownership. Second, institutional changes in housing markets dramatically increased the racial ownership gap at younger ages between 1940 and 1960. Home ownership, however, is part of a life-cycle process, and when we focus on racial differences in owner-occupancy at older ages,

there is stronger evidence of persistent racial convergence in the long run, as well as clear links to convergence in income and schooling.

There was an enormous farm-nonfarm gap in owner-occupancy among white households in the late nineteenth century. Approximately 72 percent of white household heads residing in farm homes were owner-occupants. Relatively small, family farms were the norm, and for such households, owner-operator status was central to life-cycle wealth accumulation. For whites, owner-operator status could be achieved through inheritance (or *inter-vivos* transfer) or by moving up the so-called “agricultural ladder,” possibly through the use of credit. Over the course of the nineteenth century, a well-functioning market for agricultural credit emerged, including farm mortgages, which facilitated high rates of farm ownership.

The magnitude of the farm-nonfarm ownership gap among whites was so large in the late nineteenth century that the shift of whites out of agriculture resulted in a quantitatively significant decline in the aggregate home ownership rate. Taking the sector-specific (farm and nonfarm) ownership rate in 1870 and weighting by the shares of farm and nonfarm households in 1910 yields a predicted aggregate ownership rate of 49, compared to the actual 1870 rate of 56.

Some portion of the farm-nonfarm gap in white owner-occupancy reflects the economics of urban areas at the time. Urban jobs, particularly in manufacturing, were concentrated in central business districts (CBD). Urban commuting costs were high, and workers preferred to live close to their place of employment. In dense urban neighborhoods, multi-family housing economized on scarce land, and in such housing the majority of occupants were renters. Eventually, improvements in transportation led to a flattening of urban density gradients and to the concomitant development of neighborhoods on the periphery of the CBD made up primarily of owner-occupied, single-family dwellings.

However, it is unlikely that all of farm-nonfarm ownership gap can be explained by

commuting costs. Although the farm credit market was institutionally well-developed by the late nineteenth century, the same cannot be said for the non-farm home mortgage market. Lenders required significant down-payments, as much as 50 percent of the sale price. Term lengths were relatively short, and the loans required refinancing at the end of the loan unless the borrower had accumulated sufficient capital in the interim to purchase the property outright. Beginning in the late nineteenth century, a variety of institutional developments led to a gradual “thickening” of the home mortgage market, which left its imprint in the form of a secular narrowing of the farm-nonfarm gap (Kenneth Snowden 1997).

For African-American households the post-bellum story is different in crucial ways. The vast majority of blacks in the post-bellum south could never count on inheriting land because either they or their fathers had been slaves. By necessity, the only way to become a farm owner was moving up the agricultural ladder, and most blacks started on the lowest rung as wage workers or in some type of tenancy contract with a white landlord. The climb to owner-operator status at the top of the ladder was long and arduous. From impoverished beginnings, it was exceedingly difficult to accumulate savings, and credit was generally scarce in the post-bellum south. The racial climate was hostile, and black farm owners were a particularly visible target for the Klan and others bent on enforcing the racial status quo. Despite the impediments, the census data reveal that many black farmers did manage to become owner-operators and thus home owners. By 1910, about 10 percent of the black sample consisted of men who owned and occupied farm homes, slow but significant progress.

The census micro-data offer some clues regarding the causal determinants of black home ownership rates in the late nineteenth century. A linear probability regression of owner-occupancy in 1900 reveals significant positive effects of literacy and occupational status, even with controls for county fixed effects, household structure, family size, and other observable

characteristics. The literacy connection is important because after the Civil War black children were far more likely to receive some schooling and thus become literate than those who came of age just before the conflict.¹ It is likely that this accumulation of human capital contributed to the accumulation of real property and higher rates of home ownership.

After four decades of increase, black owner-occupancy stagnated after 1910. It was about this time that the “Great Migration” of African-Americans to urban areas began in earnest. Black migrants usually settled in neighborhoods that were in close proximity to central business districts. Urban jobs, particularly in the North, paid far better than agricultural employment in the South, but the gains in income did not translate immediately into higher rates of black home ownership. This was partly for the reasons already described for urban whites, but also because neighborhoods where higher-income black households attempted to settle became contested terrain as whites resisted the black influx. The end result was especially high density in black neighborhoods and an increase in residential segregation (David M. Cutler, Edward L. Glaeser, and Jacob L. Vigdor 1999).

To see whether residential segregation impeded black home ownership in the early twentieth century, we estimated ownership regressions using pooled samples of black and white household heads from the IPUMS. The key independent variable is a standard measure of residential segregation, the dissimilarity index, interacted with a race dummy (Black = 1). The regressions include metropolitan area fixed effects. For 1920 and 1930, the coefficient of the interaction effect is negative and significant, indicating that increasing segregation was associated with a widening racial ownership gap (see the Appendix).

¹ Using the core sample in 1900 and restricting the sample to individuals who were 31 to 40 years old, we estimated an IV regression of ownership on literacy in which literacy is instrumented with a dummy variable for Southern birth after 1865 (the regression also includes controls for age, race, and state of birth). The coefficient suggests that the change in literacy between 1870 and 1900 accounts for a large share of the gains in black ownership in this period.

III. White Flight, Permanent Income, and Post-1940 Trends in Ownership

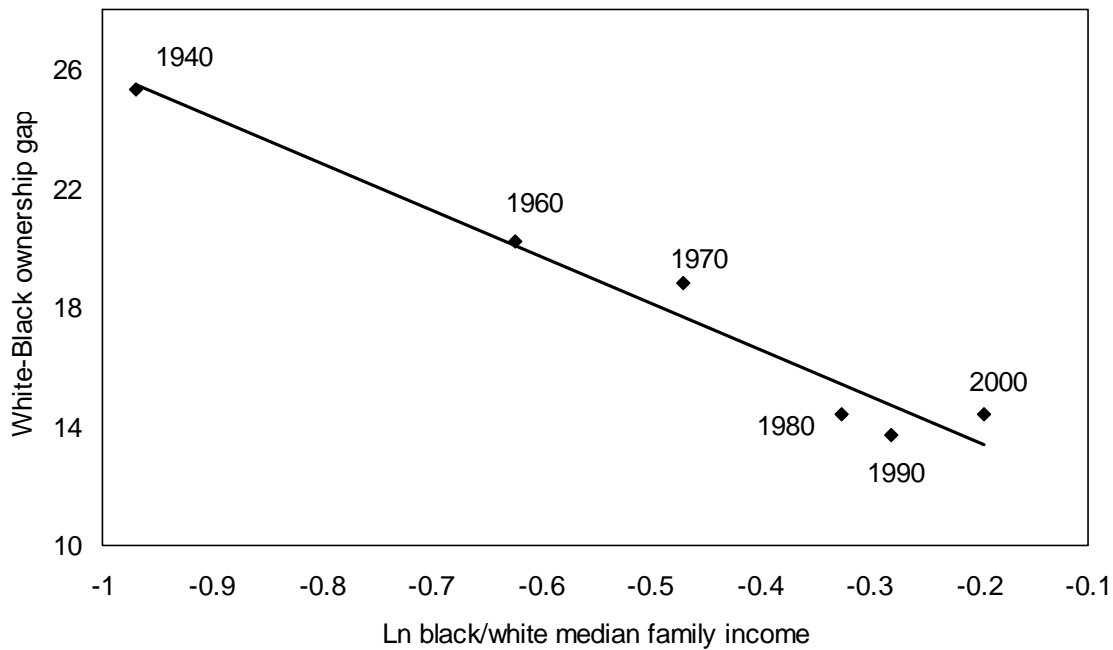
The Great Depression was disastrous for home ownership, but in the two decades after 1940 the “American Dream” took on its modern form and ownership rates jumped. Some of the gains in ownership after 1940 can be attributed to reforms in the mortgage market in the 1930s and 1940s. These included the establishment of the Federal Housing Administration (FHA) and associated changes in lending norms that led to lower down payments, self-amortizing loans, and longer term lengths. Work by Daniel K. Fetter (2010) demonstrates that subsidies to veterans also played a role in the ownership run-up among whites. The relaxing of credit constraints, along with veterans’ subsidies, would likely have their largest impact at younger ages, which is consistent with a pronounced widening of the racial gap between the ages of 25 and 34. It is also part of the conventional wisdom that the reforms of the 1930s solidified the practice of “red-lining” black neighborhoods, making it more difficult for black families to obtain mortgages.

Suburbanization *per se* played an important role in this context. Although suburbanization was underway before the 1940s, post-war improvements in transportation facilitated the decentralization of jobs and people. Because land was cheaper on the urban periphery, among other reasons, suburban housing consisted disproportionately of single-family, owner-occupied homes. Blacks faced considerable difficulties in moving to the suburbs, and residential segregation continued to increase, peaking around 1970. However, whereas our regressions for 1920 and 1930 suggest that segregation was an impediment to black home ownership, an analogous regression for 1970 finds no such pattern. After 1940, white movement to the suburbs increased metropolitan segregation, but white suburbanization also meant that blacks gained access to owner-occupied housing in urban neighborhoods where whites had previously lived (Leah P. Boustan and Robert A. Margo 2010).

African Americans, particularly those with relatively high incomes and education levels,

increasingly achieved home ownership after 1940, albeit later in the life-cycle than similar whites. This interpretation is consistent with evidence of more continuous racial convergence in owner-occupancy when observed at older ages, as well as strong correlations between ownership in later life and income and schooling, as shown in Figure 2.

Figure 2: Ownership Gap and Income Gap, 1940-2000, Ages 55-64 from Core Sample



The passage of the Fair Housing Act of 1968 ushered in a new era of federal regulation aimed at mitigating the effects of racial discrimination in housing. In light of the scope of the effort, it is astonishing how little evidence there is of treatment effects. For example, if the Fair Housing Act of 1968 had its intended effects, we might expect to see a jump in the fraction of black households residing in suburbs, since it was there that blacks' access to housing had been most restricted. However, analysis of CPS micro-data reveals no evidence of a structural break around 1968 in blacks' likelihood of suburban residence (Collins and Margo, in progress).

The upshot is that during the period of greatest regulatory effort at enhancing black

access to housing finance and suburban properties, the racial gap in home ownership has resisted further narrowing. It has been well-established that racial convergence in income and education largely stopped after 1980, and it is highly likely that the lack of progress in labor market outcomes is an important factor behind the cessation of convergence in home ownership rates.

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Appendix

This appendix provides additional detail regarding our estimates and analysis of racial differences in home ownership rates since the Civil War (William J. Collins and Robert A. Margo 2011). Most of the figures in our article are based on the home ownership information available in the IPUMS census samples (Steven Ruggles et al. 2010). For some census years, however, consistent information on home ownership is not available, and so we have adjusted the existing data for comparability. The first part of the appendix discusses these adjustments. The second part of the appendix reports information that is referenced in the article's text but omitted for considerations of space.

I. Adjustments to Census Data

For data points in 1870, 1880, 1890, and 1950, we have adjusted data from the IPUMS (Ruggles et al. 2010) or published census volumes for the sake of consistency with our estimates based on the IPUMS homeownership question in other years. This section of the appendix describes these adjustments in detail.

1870: The 1870 census collected information on the value of real property owned by each individual. Using the 1870 IPUMS sample, we create a dummy variable indicating whether or not the head of the household owned real property. This dummy variable will capture any household head who was an owner-occupant (assuming the census question was answered properly) because, by definition, this person would have owned real estate. However, with this approach, some individuals who rented their primary residence but owned real estate elsewhere

will be counted as owner-occupying when in fact they were not. The likelihood of overstatement, we believe, is negligible except possibly for household heads living in multi-family dwellings. Therefore, for household heads who lived in multi-family housing, we assume that anyone who claimed to own real estate but who resided in a dwelling with five or more housing units was not, in fact, an owner-occupant. For this adjustment, we use the IPUMS variable NUMHH, which records the number of households in the dwelling unit (the IPUMS considers this variable to be approximately equivalent to the variable UNITSSTR, which is available beginning in 1960 and which records the number of housing units in the building structure). In 1870 the probability of owning real estate was a steep negative function of multi-family status. Among whites in the core sample the rate of ownership for heads living in single family dwellings (NUMHH = 1) was 61.8 percent, whereas for heads living in dwellings with five or more units (NUMHH \geq 5) the real estate ownership rate was 7.4 percent. In Web Appendix Table 1, figures reported in square brackets assume that heads living in all multi-family dwellings (NUMHH > 1) with positive real estate holdings were renters.

1880: Roger L. Ransom and Richard Sutch (1977, Table 5.1, p. 84) report that 19.6 percent of farms operated by African-Americans were owner-occupied. The estimate is derived from their sample of manuscript records from the 1880 census of agriculture. The sample pertains to the “Cotton South” which, because it crosses state boundaries, is not readily mapped into state totals. We assume that this figure pertains to the entire South. This may be incorrect; however, we believe that any bias imparted to the final estimate is small.² For non-farm homes we estimate

² Based on the 1870 IPUMS sample we estimate that 13.5 percent of farm homes occupied by black households were owner-occupied. If we average this figure with the published ownership rate from the 1890 census for black farm homes (0.220) we get 0.178, which is slightly lower (12 percent) than Ransom and Sutch’s figure.

the fraction owner-occupied to be 0.108 for blacks. This figure is the average of an estimate for 1870 using the IPUMS (all black household heads, 0.049) and the published figure for 1890 (0.167) from U.S. Department of Commerce, Bureau of the Census (1918, p. 459). Using the IPUMS, we estimate that 31.3 percent of black household heads lived in farm homes in 1880. Therefore, the estimated black owner-occupancy rate in 1880 (all household heads) is 0.135 ($=0.108 \times 0.687 + 0.196 \times 0.313$) or 13.5 percent. To adjust this for comparability with the core sample figures, we multiply it by an estimate of the ratio of the core sample occupancy rate to the all household heads rate; this estimate (1.015) is linearly interpolated from its value in 1870 (1.0) and 1900 ($1.048 = 22.0/21.0$), computed from Appendix Tables 1 and 2.

For whites, we back out an estimate of the white ownership rate of farm homes (0.807) using the overall rate of farm ownership reported in the census (0.744, computed from series Da532 and Da530, Susan B. Carter et al. 2006, Volume 4, p. 4-71), our estimate rate of farm ownership for blacks (see above) and the proportion of farm homes occupied by black households (0.103, computed from the 1880 IPUMS). The 1880 non-farm ownership rate for whites (0.379) is the average of our estimate for 1870 (0.395) from the IPUMS and 1890 (0.363) from George K. Holmes and John S. Lord (1896, p. 175). According to the 1880 IPUMS, 40.5 percent of white households resided in farm homes. The overall rate for whites is 0.553 ($=0.405 \times 0.807 + 0.595 \times 0.379$) or 55.3 percent. This figure pertains to all household heads. To make it comparable to our core sample figures, we multiply it by an estimate of the ratio of occupancy rates for our core sample to all household heads; this estimate (1.018) is linearly interpolated from its value in 1870 (1.042) and 1900 (0.969), computed from Appendix Tables 1 and 2.

1890: In 1890 the census attempted to determine the tenure status of every family. If the home occupied by the family was owned by someone in the family, the family was owner-occupying;

if not, the family was renting. If the family was owner-occupying the identity of the owner was so indicated on the census form. In 1896 the Census published a report (Holmes and Lord 1896) in which individuals who were owners (as designated on the 1890 census form) or heads of households (if the family was renting) were classified on the basis of various personal characteristics, including race. Some three decades later the Department of Commerce published *Negro Population of the United States, 1790-1915* (U.S. Department of Commerce, Bureau of the Census 1918), which included a chapter on “Home Ownership and Size of Families.” The chapter contains a table classifying black families by their tenure status in 1890, 1900 and 1910 (p. 459). The 1900 counts by tenure status in the 1918 report are virtually identical to those reported in the 1900 published census, but the 1890 counts in the 1918 report are uniformly higher than those given in the 1896 report, more so for owners than renters. As a result, the 1918 counts imply a slightly higher owner-occupancy rate in 1890 (18.7 percent) than do the counts in the 1896 report (17.5 percent). Unfortunately, the text of the 1918 report is silent as to why the census evidently made upward adjustments to its original 1890 figures. On the belief that the census statisticians of the era had good reasons to make the upward adjustments, we have elected to rely on the 1918 counts when constructing our African-American time series. The census made no subsequent adjustments to its original counts for whites; hence for whites we use the 1896 report.

As just noted, the 1918 report gives the percent of black families who were owner-occupying in 1890 (18.7 percent). We adjust this figure to make it comparable to our other figures by multiplying it by an estimate of the ratio of owner-occupancy for households in our core sample to the owner-occupancy rate for black families; this estimate (1.03) is linearly interpolated from its value in 1870 (1.0) and 1900 1.045 (from Appendix Tables 1 and 2). The adjusted figure for 1890 is shown in Appendix Table 1. For whites we follow a similar

procedure, except that our 1890 occupancy rate for all white households (51.5) derives from Holmes and Lord (1896, p. 167). The adjustment ratio for whites (linearly interpolated between 1870 and 1900) is 0.994.

1950: The 1950 IPUMS sample does not report housing tenure status. For non-farm homes, tenure status by race is reported in U.S. Department of Commerce, Bureau of the Census (1953a, Table 2). For farm homes, tenure status is reported in U.S. Department of Commerce, Bureau of the Census (1953b, p. xxiv). For non-farm homes, the Bureau reported statistics separately for black households. For farm homes, the data are given for non-whites. We make no adjustment for this as the fraction of non-black households among non-white farm households was arguably very small in 1950. For each race we add the total number of owned homes from both sources and divide by total homes to get the figures shown in Appendix Table 2. We adjust the all household rates by an estimate of the ratio of occupancy in the core sample to all households; the estimated ratio is an average of the ratios for 1940 and 1960 (computed from Appendix Tables 1 and 2). The white adjustment ratio is 1.008; the black adjustment ratio is 0.994.

Appendix Table 1: Estimated Rates of Owner-Occupancy per 100 Households,
Core Sample (Male Household Heads, Ages 25-64, In Labor Force, Not in School)

Year	White	Black	Racial Gap (White – Black)
1870	56.5 [53.6]	7.7 [7.2]	48.8 [46.4]
1880	56.3	13.7	42.6
1890	51.2	19.3	31.9
1900	47.9	22.0	25.9
1910	47.0	23.5	23.5
1920	47.0	22.9	24.1
1930	48.3	24.2	24.1
1940	43.2	21.1	22.1
1950	59.2	34.1	25.1

1960	68.8	40.8	28.0
1970	73.1	49.7	23.4
1980	76.8	58.0	18.8
1990	74.4	54.1	20.3
2000	77.6	56.5	21.1
2007	76.5	54.0	22.5
2007 – 1870	20.0	46.3	-26.3
1910 – 1870	- 9.5	15.8	-25.3
1980 – 1910	29.8	34.5	- 4.7
2007 – 1980	-0.3	-4.0	3.7

Notes: Figures give the rate of owner occupancy per 100 households in our core sample. To be included in the core sample households (years which use the IPUMS or American Community Survey) had to be headed by males between the ages of 25 and 64, in the labor force, not enrolled in school. Observations with unreported tenure status are excluded if possible. Figures in square brackets assume all individuals in 1870 living in multi-family dwellings with positive values of real property were renting as opposed to owner-occupancy. For years which the IPUMS (or ACS) is used households are weighted by the IPUMS (or ACS) household weight variable prior to computing sample statistics.

Sources: 1900-1940, 1960-2000: IPUMS 1/100 samples; see Ruggles et al. (2010). For 1970 we use the F2 Metro sample (this sample reports school attendance); in 1990 and 2000 we use the “un-weighted” or “flat” samples (see Ruggles et al. 2010). For other years, see the description in the Web Appendix (above).

Appendix Table 2: Rates of Owner-Occupancy per 100 Households, All Household Types

Year	White	Black	Racial Gap (White – Black)	White, Core Sample Fraction	Black, Core Sample Fraction
1870	54.2 [53.6]	7.7 [7.2]	46.5 [46.4]	0.762	0.657
1880	54.9	13.5	41.4	NA	NA
1890	51.1	18.7	32.4	NA	NA
1900	49.4	21.0	28.4	0.743	0.642
1910	48.5	22.9	25.6	0.745	0.665
1920	48.3	22.5	25.8	0.746	0.676
1930	49.9	24.5	25.4	0.725	0.659
1940	45.6	23.0	22.6	0.690	0.613
1950	58.7	34.3	24.4	NA	NA
1960	64.3	38.1	26.2	0.637	0.540
1970	65.4	41.6	23.8	0.567	0.449
1980	67.7	45.2	22.5	0.499	0.358
1990	68.2	43.3	24.9	0.462	0.303
2000	71.3	46.3	25.0	0.433	0.266
2007	72.2	46.5	25.7	0.358	0.251

Notes and sources: See Web Appendix Table 1.

II. Additional Data and Results

The text of Collins and Margo (2011) refers to several results that were omitted to save space. More detailed information is reported here. First, we noted that there was a large difference in home ownership for white farm households relative to white non-farm households in the late nineteenth and early twentieth century. Appendix Table 3 reports the relevant gaps for 1870, 1890, and 1910. Given this gap, the transition of whites out of the farm sector put downward pressure on the overall white ownership rate in the late nineteenth and early twentieth centuries. The ownership gap for black households between the farm and nonfarm sector is comparatively small, and the ownership rate is low in both cases.

Appendix Table 3: Race and Owner-Occupancy by Farm Home Status, 1870-1910

	1870	1890	1910
Panel A: White, All Households			
Proportion Farm Home	0.41 {0.45}	0.38	0.29
Owner-Occupancy Rate, Farm Home	75.6 [73.7]	71.7	69.2
Owner-Occupancy Rate, Non-Farm Home	39.5 [35.7]	39.4	40.0
Gap (Farm – Nonfarm)	36.1 [38.0]	32.3	29.2
Panel B: Black, All Households			
Proportion Farm Home	0.19 {0.63}	0.39	0.40
Owner-Occupancy Rate, Farm Home	13.5 [13.0]	22.0	25.5
Owner-Occupancy Rate, Non-Farm Home	4.9 [4.6]	16.7	21.2
Gap (Farm – Nonfarm)	8.6 [8.4]	5.3	4.3

Notes: Figures pertain to all household heads. Farm = 1 if the census considered the home to be a farm. Figures in square brackets assume that all households living in multifamily housing (as indicated by the IPUMS variable NUMHH > 1) were renters. Figures in curved brackets are the proportion of household heads reporting agriculture as industry of employment.

Sources: For 1870 and 1910, figures are computed from IPUMS samples. See Web Appendix discussion (above) for definition of ownership in 1870. In 1890, the African-American rate is computed from United States Department of Commerce, Bureau of the Census (1918, p. 459); the white rate is computed from Holmes and Lord (1896, Table 61, p. 175).

Second, the article’s text refers to ownership regressions using the core sample pertaining to metropolitan areas in which a dummy variable for race (Black = 1) is interacted with measure of residential segregation, the dissimilarity index. These regressions include metropolitan area fixed effects, so that while the level effect of segregation (the dissimilarity index) is not identified, the race interaction effect is identified. In essence, these are difference-in-differences regression asking whether the black-white ownership gap is larger in metro areas that are more segregated residentially. We report results for a base specification which include no individual covariates (other than the race dummy and the interaction term) are included as well as a specification that adds additional covariates. As reported in the text, we find a negative

correlation between segregation and blacks' relative ownership rate (i.e., as segregation increases, black ownership falls relative to white ownership) in 1920 and 1930 that coincides with the timing of the onset of the Great Migration, but by 1970 the correlation is positive although not statistically significant.

Appendix Table 4: Effect of Residential Segregation on Black-White Ownership Gap

Year	Number of Metro Areas	Coefficient of (Black = 1) x Dissimilarity Index, No Additional Covariates	Coefficient of (Black = 1) x Dissimilarity Index, Full Set of Covariates
1900	44	-0.037 (0.090)	-0.084 (0.076)
1910	57	0.020 (0.125)	0.048 (0.115)
1920	71	-0.124** (0.065)	-0.119** (0.062)
1930	86	-0.142* (0.055)	-0.111** (0.056)
1940	79	0.017 (0.073)	0.002 (0.070)
1970	111	0.061 (0.196)	0.081 (0.118)
1980	239	0.062 (0.083)	0.040 (0.074)
1990	230	-0.059 (0.057)	-0.043 (0.047)

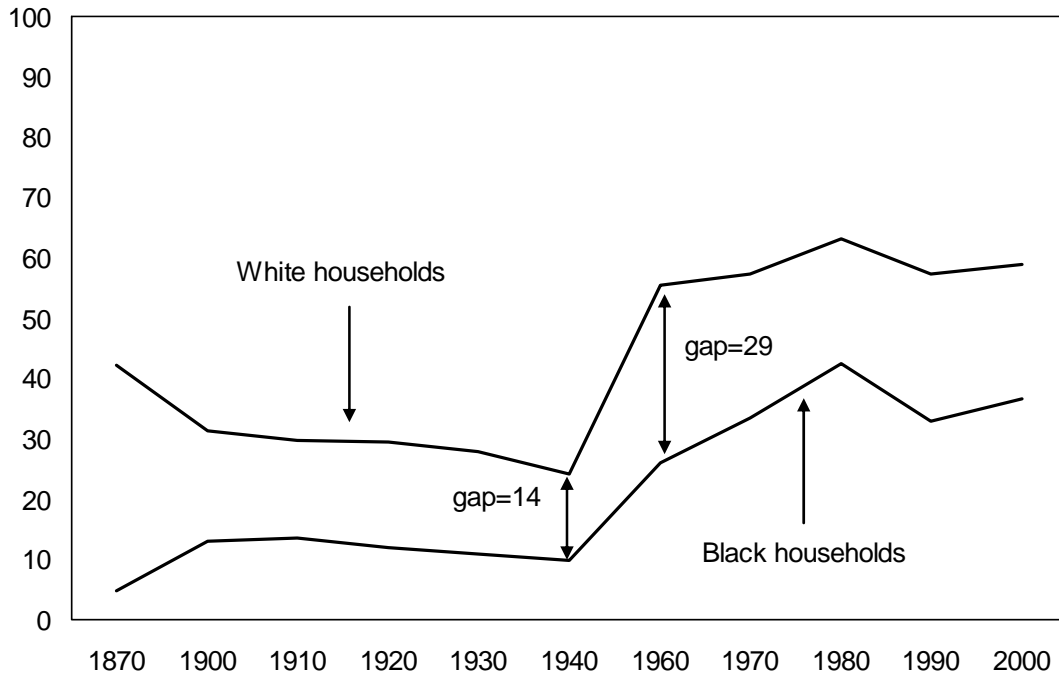
Notes: Core sample households living in a metropolitan area for which Cutler-Glaeser-Vigdor dissimilarity index has been computed. All regressions include a metropolitan area fixed effect, a race dummy (=1 if black), and the race dummy interacted with the dissimilarity index. Full set of covariates: adds fourth degree polynomial in age, dummy variables for literacy of the household head (1900-1930) or single years of schooling (1940-1990), marital status, citizenship status, occupational status (using 1950 occupational weights as coded by the IPUMS), and a linear term in family size. Standard errors are shown in parentheses (* = significant at 5 percent level, ** = significant at 10 percent level). No results are shown for 1950 or 1960 because usable IPUMS data are not available.

Third, the article's text cites information regarding the size of the racial ownership gap at relatively young ages and at relatively old ages. Between 1940 and 1960, the racial gap surged

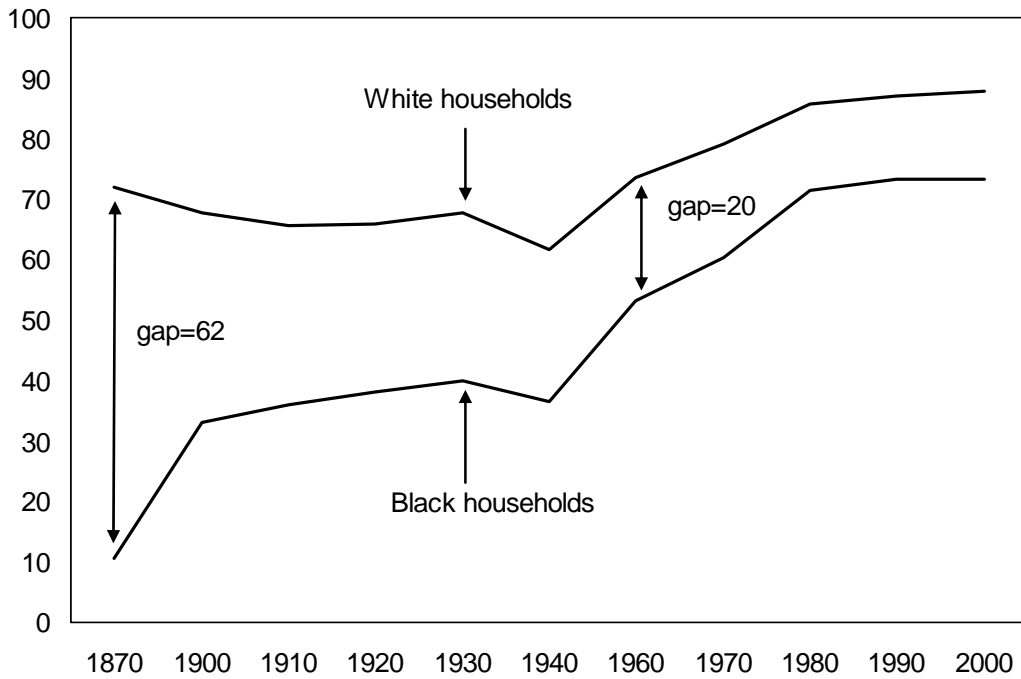
among relatively young households. This is evident in Appendix Figure 1. The underlying data are reported in Appendix Table 5. Mortgage market reforms, World War II veterans' benefits, and suburbanization had differential effects across race and age groups, with young white families experiencing a relatively large surge in ownership.

Appendix Figure 2 and Appendix Table 6 report similar information, but for older household heads (ages 55-64). From this perspective, which is closer to the end of the life-cycle, the narrowing of the ownership gap since the Civil War has been more pronounced and persistent than among young households.

Appendix Figure 1: Owner-Occupancy Rates by Race, Core Sample, Ages 25-34



Appendix Figure 2: Owner-Occupancy Rates by Race, Core Sample, Ages 55-64



Appendix Table 5: Rates of Owner-Occupancy per 100 Households: Male Household Heads, Ages 25-34, Not in School, in Labor Force (Core Sample), IPUMS Census Years

Year	White	Black	Racial Gap (White – Black)
1870	42.2 [40.0]	4.9 [4.6]	37.3 [34.4]
1900	31.2	12.9	18.3
1910	29.8	13.6	16.2
1920	29.5	12.0	17.5
1930	27.9	10.8	17.1
1940	24.2	9.8	14.4
1960	55.4	26.0	29.4
1970	57.3	33.3	24.0
1980	63.0	42.5	20.5
1990	57.4	32.9	25.7
2000	58.8	36.6	25.3
2000 - 1870	16.6	31.7	- 12.0 [- 9.1]
1910 - 1870	-12.4	8.7	- 21.1
1960 - 1940	31.2	16.2	15.0

Source: see Appendix Table 1. Figures in this table are computed the same way as in Appendix Table 1, except that household heads are between the ages of 25 and 34.

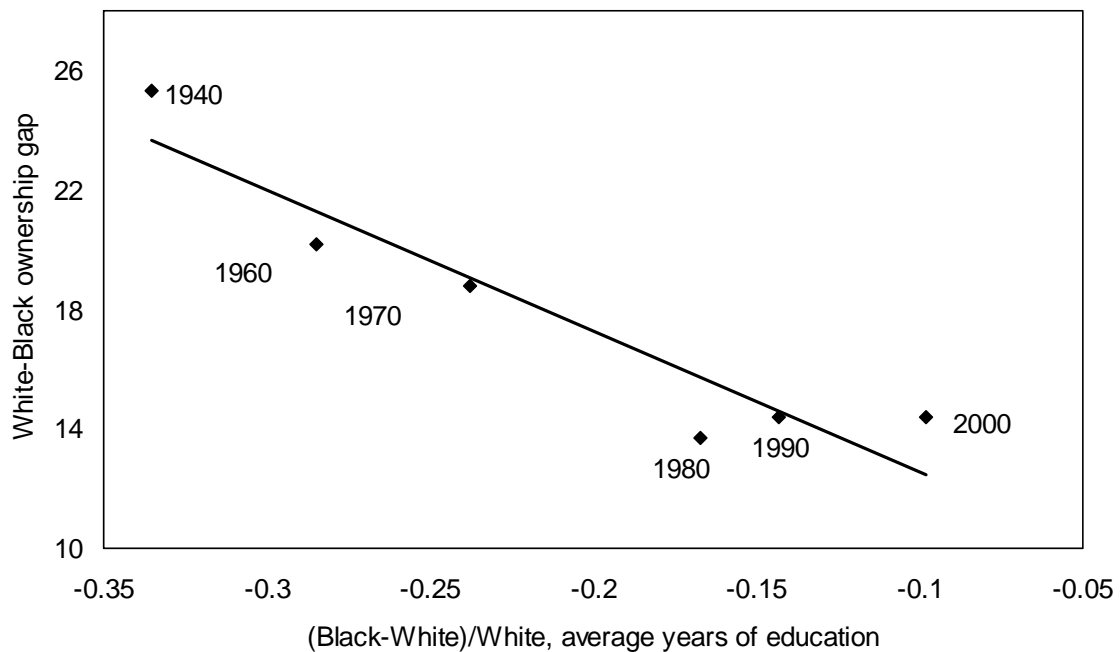
Appendix Table 6: Rates of Owner-Occupancy per 100 Households: Male Household Heads, Ages 55-64, Not in School, in Labor Force (Core Sample), IPUMS Census Years

Year	White	Black	Racial Gap (White – Black)
1870	72.0 [68.2]	10.7 [10.1]	61.7 [58.1]
1900	67.6	33.2	34.4
1910	65.7	36.1	29.6
1920	66.0	38.0	28.0
1930	67.7	40.0	27.7
1940	61.7	36.6	25.1
1960	73.5	53.2	20.3
1970	79.0	60.2	18.8
1980	85.7	71.3	14.4
1990	87.0	73.3	13.7
2000	87.8	73.4	14.4
2000 - 1870	15.8	62.7	- 46.9
1910 - 1870	-6.3	26.1	- 32.4
1960 - 1940	11.8	16.6	- 5.3

Source: see Appendix Table 1. Figures in this table are computed the same way as in Appendix Table 1, except that household heads are between the ages of 55 and 64.

The more pronounced and persistent narrowing of the ownership gap by the end of the life-cycle is consistent with an historical interpretation that emphasizes changes in blacks' permanent income and educational attainment. Figure 2 in the article showed the relationship between the ownership gap and the income gap for older households in the core sample. Below, Appendix Figure 3 shows a similar pattern that strongly links the gap in ownership to the gap in average educational attainment.

Appendix Figure 3: Ownership Gap and Educational Attainment Gap, 1940-2000, Ages 55-64 from Core Sample



APPENDIX REFERENCES

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