RACE AND THE VALUE OF
OWNER-OCCUPIED HOUSING, 1940-1990

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ABSTRACT

The racial gap in the value of owner occupied housing has narrowed substantially since 1940, but this narrowing has not been even over time or across space. The 1970s stand out as an unusual decade in which the value gap did not narrow despite continued convergence in the observed characteristics of housing. A decline in the relative value of black-owned homes in central cities appears to have offset gains elsewhere during the 1970s, and this central city decline continued into the 1980s. In further exploration of the 1970s, we find evidence of a rising propensity for higher-income blacks to live in the suburbs. We also find a positive correlation between riots in the 1960s and widening of the value gap during the 1970s in a panel of cities.

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I. Introduction

Since the first waves of the Great Migration spilled into America's cities during World War I, economists have studied the pace and process of African-American economic advance (U.S. Dept. of Labor 1917; Lewis 1931; Myrdal 1944; Smith and Welch 1989; Margo 1990; Donohue and Heckman 1991; Collins, forthcoming). Although the labor literature has examined long-run changes in racial gaps in income and employment, and the urban literature has devoted considerable attention to understanding the role of race and discrimination in housing markets, as far as we know, no previous studies have attempted to explain systematically the long-run evolution of the racial gap in home values.[1] This paper does so by examining micro-level data from the IPUMS (Integrated Public Use Microdata Series, Ruggles and Sobek 1997) which reports house and property value data as early as 1940.

House and neighborhood quality are important determinants of household well-being, and to the extent that such quality is embedded in house and property values, a racial gap in these values reflects a gap in well-being across racial groups. Moreover, because owner-occupied housing has historically been the single largest component of non-pension household wealth, the property value data provide some insight into the racial gap in wealth, a gap which has always been much larger than the gap in income (Oliver and Shapiro 1995). By exploiting variation in house and household characteristics, we can examine which factors have tended to close the gap in property values (and the associated gap in well-being) and which factors have tended to widen it over a long period of time.

The paper is organized as follows. In Section 2 we provide an overview of the housing

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[1] See Bentson (1979), Lang and Nakamura (1993), Long and Caudill (1992), Lungberg and Startz (1983), and Yinger (1995) for studies of race and discrimination in housing markets.

value data from the IPUMS, and we present some aggregate figures to characterize the racial gap in housing values. In Section 3 we pursue an econometric exploration of changes in the value gap over time. In particular, we undertake decomposition analyses of the changes in the gaps across each decade from 1960 to 1990. In Section 4 we discuss some hypotheses regarding the behavior of the value gap in the 1970s, including the notion that better-educated and higher-income blacks moved out of the central cities during the 1970s and the hypothesis that riots in the late 1960s had lingering adverse effects on the racial gap in property values through the 1970s. Section 5 concludes and suggests a number of avenues for future research.

We find a substantial increase in the value of black owned housing relative to white owned housing between 1940 and 1990, but this increase has been neither continuous nor evenly spread geographically. Rapid advance occurred between 1940 and 1960, but there was virtually no increase during the 1970s, when the relative value of black owned housing in central cites fell substantially. The decomposition analysis indicates that the pace of advance stagnated in the 1970s despite relative improvements in the observed characteristics of black-owned housing (rooms, bathrooms, and so on), implying a relative decline in unobserved quality. In the 1980s, the nation-wide gap narrowed substantially, but the central city gap continued to widen. Interestingly, we find that there has been a substantial increase in the propensity of higher-income blacks to live in suburbs rather than central cities since 1940 (relative to the change in the white propensity). We also find that cities which experienced riots during the late 1960s experienced larger than average declines in the relative value of black owned housing between 1970 and 1980, even after accounting for changes in observed housing characteristics and in the market prices of those characteristics.

II. An Overview from the IPUMS Data

Each microdata sample of the census since 1900 has reported information on home

ownership (except 1950). Dwellings were classified as owner-occupied if the owner happened to

live there, though the census did not explicitly identify who within the household actually owned

the home. Following convention, we assume that if the home was owned, then the household

head was the owner. Starting in 1940, the IPUMS reports house and property values for owner-

occupied homes, and starting in 1960 a number of house characteristics (bedrooms, bathrooms,

and so on) are also observed.[2] Some care must be taken in interpreting these data because the

universe of coverage and method of value estimation changed somewhat over time.[3] To the

extent that it is possible, we have attempted to standardize our samples and to check that results

are not driven by changes in sample composition.[4] In each year the sample consists of all black

and white male household heads between 20 and 64 years of age who were not in school. By

limiting the sample to men, we set aside consideration of the relationship between family

structure (for example, female household headship) and home values for future research.

Table 1 reports the average value of black-owned homes relative to white-owned homes

for each region and for the entire U.S. in 1940, 1960, 1970, 1980, and 1990. Within each region,

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[2]Data on housing characteristics were collected in 1940 but not as part of the Population census and therefore are not included in the 1940 IPUMS.

[3] In 1940 the property value was estimated by home owners in consultation with the census enumerator, but from 1960 onwards, the value was estimated by home owners alone. The treatment of farm property, condominiums, and homes with medical or dental offices varies from year to year. Furthermore, because of confidentiality conditions, it is sometimes impossible to identify a household's metropolitan status, especially for particular states in 1960 and 1970. For details of coverage see Ruggles and Sobek (1997).

[4] See the notes to the tables for the restrictions we have imposed to generate comparable samples.

the table also reports ratios for the full sample, a sample consisting of those residing within

metropolitan areas, and a sample for those residing within central cities (a subset of those in

metro areas). For the full sample of the entire country, there has been a strong upward movement

in the black/white ratio over time. Over the fifty years covered by the table, the ratio rose

impressively, from about 0.37 to about 0.65. However, this convergence was neither continuous

over time nor even across geographic locations. For example, the leap in the ratio between 1940

and 1960 was very large in comparison with subsequent increases, and it occurred despite the

prevalence of overt racial biases in mortgage and housing markets through the 1960s (Massey

and Denton 1993; Collins and Margo 2000a). Then, despite the adoption of policies intended to

discourage discrimination in housing markets, the convergence of home values stopped during

the 1970s before resuming an upward trend during the 1980s. The stagnation during the 1970s

appears to have been associated with a substantial decline in the relative value of black-owned

housing in central cities, especially in the Midwest, but evident in all regions.[5] We will return to

the unusual experience of the 1970s in the next section where we undertake a decomposition

analysis of the decade to decade changes in the racial housing value gap.

At the regional level in Table 1, the most important center of change has been, perhaps

not surprisingly, the South. The South had the lowest black/white housing value ratios by far in

1940. Moreover, average southern property values (for blacks and whites) were substantially

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[5] In the 1960 and 1970 IPUMS samples, several states do not have metropolitan status information, but in 1980 all states do, implying that the geographic composition of the "metro area" and "central city" samples changes between 1970 and 1980. To ensure that those sample composition changes did not drive the changes in the value ratios, we experimented with the continued exclusion of those states from the relevant 1980 samples. The results were basically unaffected, so we left the 1980 samples intact. The biggest effects were found for the central city samples where the ratio for the Northeast was lowered from 0.69 to 0.66, and for the West from 0.69 to 0.64.

lower than property values in the rest of the country. Thus, the high concentration of blacks in the South in 1940 ensured that the national black/white value ratio would be very low. Over time, the convergence of southern property values on those in the rest of the country, increases in the black/white ratio within the South itself, and the geographic redistribution of the black population have all served to drive the national black/white ratio upwards. Because the South is now much more similar to the rest of the country, however, it is unlikely that such regional convergence will continue to propel increases in the ratio of black/white property values.

Although Table 1 provides some insight into when and where changes in the racial housing value gap occurred, as well as a sense of the gap's magnitude, it does not provide much insight into how or why the gap changed. We take some steps in this direction in the next section where we use the housing characteristics reported in the IPUMS to perform decomposition analyses of the changes in the racial housing value gap.

III. Decomposition Analysis

Our analysis of the sources of change in the racial gap in the value of owner-occupied housing begins with a conventional hedonic model of housing prices (Rosen 1974):

(1) $$\ln V = X\beta + e$$

where V is the value of housing, X is a vector of housing characteristics, β is a vector of race-specific regression coefficients reflecting how the market values particular housing characteristics, and e is a random error term. The point of the decomposition procedure is simply to break the overall change in the gap into several components: one that accounts for changes in

the characteristics of housing owned by whites relative to blacks (changes in X); one that

accounts for changes in how those housing characteristics are valued by the market (change in

β); and another that accounts for changes in the residual gap (e).

More precisely, let G be the gap in housing values at time t. Then:

(2) $$G_t = \ln V_{wt} - \ln V_{bt} = (X_{wt} - X_{bt})\, \beta_t + e_{wt} - e_{bt}.$$

After adding and subtracting $(X_{wt+1} - X_{bt+1})\beta_t$ and rearranging terms, the change in the gap from

one census (t) to another (t+1) can be expressed as

(3)
$$G_{t+1} - G_t = [(X_{wt+1} - X_{bt+1}) - (X_{wt} - X_{bt})]\beta_t +$$
$$(X_{wt+1} - X_{bt+1})(\beta_{t+1} - \beta_t) +$$
$$[(e_{wt+1} - e_{bt+1}) - (e_{wt} - e_{bt})].$$

The first component represents the effect of changes in housing characteristics on the gap; the

second component represents the effect of changes in the β coefficients on the gap; and the third

component is the change in the residual gap. If the β coefficients for the white population are

used (following convention), then the mean error term for whites will be zero, and the third

component amounts to the change in the size of the black residual when black housing

characteristics are valued using the white β terms.[6] Finally, the change in the gap can be

rewritten as

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[6] For the sake of comparison, we have also performed the decompositions using the coefficients from regression on black household heads. When instructive, we will refer to these results.

$$(4) \qquad G_{t+1} - G_t = [(X_{wt+1} - X_{bt+1}) - (X_{wt} - X_{bt})]\beta_t +$$

$$(X_{wt+1} - X_{bt+1})(\beta_{t+1} - \beta_t) +$$

$$[(\delta_{wt+1} - \delta_{bt+1}) - (\delta_{wt} - \delta_{bt})]\sigma_{wt} + (\delta_{wt+1} - \delta_{bt+1})(\sigma_{wt+1} - \sigma_{wt}),$$

where σ_t is the standard deviation of the white residuals in year t and δ_{it} is the "standardized

residual" (e_{it}/σ_t) with mean zero and variance one for whites. If there had been no change in the

standard deviation of the white residuals between the censuses, then the fourth term would be

zero and the third term would be identical to the last term of equation 3. This last step in the

decomposition allows us to distinguish between changes in the residual gap driven by changes in

the residuals' variance (fourth term) and those driven by changes in the relative position of

blacks within the residual distribution (third term).

It is well-known that home owners are not a random sample of the population; they differ

systematically from renters on the basis of economic, demographic, and geographic

characteristics (Collins and Margo 2000a). It is plausible, therefore, that home owners differ

along unobserved dimensions, and that these unobservables are correlated with observed housing

characteristics, implying selectivity bias in estimates of β by ordinary least squares regressions.

To deal with this potential bias we employ a "Heckit" two-step correction in our estimates of β.

In the first step of the procedure we estimate a probit of home ownership status on a quartic in

age, a quadratic in educational attainment, occupational status, family size, marital status,

migrant status (categories: native born and residing in same region as birth, native born and

residing in different region from birth, and foreign born), region of residence, and metropolitan

status. On the basis of each individual's characteristics and the model's first-stage estimates of

how those characteristics affect the likelihood of home ownership, each individual's inverse

Mills ratio is estimated and entered as a regressor in the second stage regression to correct for the

selectivity problem (Heckman 1979).[7]

In the second stage, for 1960, 1970, and 1980, we observe the following characteristics of

each home: the number of rooms, the number of bathrooms, the age of the building, whether the

building is detached or attached, the region and metropolitan status of the residence, and the type

of heating system used. A number of exclusions are made for the sake of temporal

comparability, such as: condominiums and owner-occupied units in multi-family buildings,

farms, trailers, properties with more than 10 acres, properties used for commercial purposes, and

those with indeterminate metropolitan status.[8] In 1990, we cannot observe the number of

bathrooms or the heating system, and so only a much reduced specification may be estimated in

order to decompose changes the value gap from 1980 to 1990.[9]

The results of the decomposition are reported in Table 2 where the columns "first term,"

"second term," and so on refer to the components on the right hand side of equation 4. For the

sake of exposition, we have grouped rooms, bathrooms, building age, heating system, and

attachment status under "building characteristics" (see Table 2). For more detailed information

on the underlying regressions and sample characteristics, see the appendix. Negative values in

Table 2 imply that changes in a particular component over the decade tended to narrow the racial

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[7] Ultimately, although this added regressor itself has an economically small impact on the value gap, its inclusion does affect the estimated coefficients on the other variables (modestly) and thereby influences the entire decomposition exercise.

[8] Because the first stage of the Heckman procedure requires information on the household head, observations with missing values for those characteristics are also excluded from the samples used for the decompositions. In particular, those without a reported occupation or with non-positive income are left out.

[9]Again we note that no data on housing characteristics are available in the 1940 IPUMS so we cannot use the method described in the text to decompose changes in the black-white value gap between 1940 and 1960.

gap; positive values imply a widening of the gap. Because the samples employed in the decomposition differ slightly from those in Table 1 (e.g., places of unknown metro status can be included in the overall U.S. figures of Table 1 but cannot be included in the decompositions), the overall log changes in the value gap also differ, particularly for the 1980 to 1990 change (a large number of homes have indeterminate metropolitan status in 1990).[10]

The sizable narrowing of the value gap between 1960 and 1970 appears to have been driven primarily by a substantial narrowing of the gap in observed housing characteristics; nearly 12 points of the 15 percentage point narrowing can be accounted for by relative changes in house characteristics. The next most important component in the 1960s is associated with changes in the relative value of different locations which tended to widen the racial value gap: on average the South lost ground relative to other regions; and central cities lost ground relative to suburbs and non-metro areas. Since blacks were relatively concentrated in the South and in central cities, these relative price shifts tended to make them relatively worse off, *ceteris paribus*.

Remarkably, in the 1970s the change in relative housing characteristics suggests that there should have been a substantial narrowing in the value gap, as in the previous decade, but a large increase in the residual component completely offsets any tendency toward narrowing. In particular, there is a large decline in the position of the average black household within the standardized residual distribution (the "third term") implying a substantial relative decline in unobserved housing quality. When we use coefficients from regressions on black households

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[10] The samples for the decomposition have the following exclusions: farms, trailers, condominiums, homes with indeterminate metro or regional status, homes used for commercial purposes, homes on more than 10 acres, homes with missing values for house characteristics, homes in multi-family buildings; household heads with no income, no reported occupation, or indeterminate migrant status. All of these exclusions are made to keep the samples as uniform as possible in the face of changing census coverage.

(rather than whites) as the hedonic "prices" in the decomposition, the importance of the residual term declines somewhat whereas the importance of the location component increases.[11] More specifically, although improvement in the relative value of the homes of southern blacks tended to narrow the value gap in the 1970s, the relative rise in the value of homes in the West tended to widen the gap; moreover, unlike the white "prices," the black "prices" indicate a decline in the relative value of central city housing which tended to widen the overall value gap. We will investigate this phenomenon further in the next section of the paper.

During the 1980s, the overall widening of the residual distribution tended to widen the racial housing value gap (the "fourth term"), but blacks improved their position considerably within the standardized residual distribution. It is important to note here, however, that we observe fewer house characteristics for the 1980-1990 decomposition than we observe for the other two decades, and so more information necessarily spills into the residuals in the 1980s.

IV. The Racial Value Gap in the 1970s: Further Explorations

Despite racial convergence in housing characteristics, the value of black owned housing did not converge on the value of white owned housing in the 1970s. The results of the previous section indicate that this relative decline may be related to events occurring in central cities, in particular, because of a deterioration in the relative (black/white) unobserved quality of housing, such as neighborhood quality. In fact, the 1970s witnessed the emergence of a strong negative correlation between racial segregation in housing and adverse socioeconomic outcomes for young blacks, a finding which is suggestive of just such a decline in neighborhood quality (Cutler

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[11] The "third term" in the decomposition for 1970-1980 using the black coefficients is 0.0585 (compared to 0.1310 when white coefficients are used); and the location component of the "second term" is 0.0409 (compared to 0.0130).

and Glaeser 1997, and Vigdor 1999, Collins and Margo 2000b).

The IPUMS samples are not rich enough in information to identify a "smoking gun" behind the relative deterioration of black housing values in the 1970s. However, the data do allow us to explore two hypotheses with potential explanatory power. The first is related to William Julius Wilson's (1987) well-known argument that middle class blacks began to leave central cities in the 1970s, and that consequently, the value of housing declined in predominantly black areas of central cities.

Second, we explore whether an association exists between urban civil unrest – riots – during the second half of the 1960s and subsequent changes in the relative value of black owned housing in the 1970s. Unfortunately, because the 1960 IPUMS sample does not identify metropolitan areas, we cannot evaluate the effect of civil unrest on property values in the 1960s. It is possible, nonetheless, that riots in the late 1960s either set a process of deterioration in motion or were themselves a product of such a process that continued into the 1970s. We combine data from congressional hearings on riots with the IPUMS housing value data in 1970 and 1980 to assess the connection.

Wilson Hypothesis

Rising economic status among blacks, declining discrimination among whites, and new anti-discrimination measures adopted by the government contributed to a shift of middle-class blacks out of the central cities in the 1970s (Wilson 1987). Wilson argues that this movement had detrimental effects on neighborhood quality in black areas of central cities because it removed positive role models from these neighborhoods. For our purposes, the important point of the Wilson hypothesis is that, because of the deterioration in relative neighborhood quality –

an unobserved (to us) housing characteristic – black owned housing declined in value relative to white housing, particularly in central cities in the 1970s and 1980s.

The role of rising income in promoting suburbanization began long before 1970 (Margo 1991, 1992). For the Wilson hypothesis to help explain the deterioration of relative (black/white) housing values after 1970, however, there must have been a structural break evident between 1970 and 1980 in the relative likelihood that higher income blacks would live outside central cities.

Table 3 reports the results of race-specific probit regressions for central city residence, conditional on being a resident of an SMSA, from 1940 to 1990. For ease of exposition, only the income coefficients are reported in Table 3, but all the regressions also control for a quartic in age, marital status, family size, region, and migrant status. A positive coefficient implies that higher income raises the probability of central city residence, and the reverse, for a negative coefficient.

In 1940, income and suburban residence were uncorrelated among whites but, as Wilson (1987) points out, higher income blacks were more likely to live in central cities, conditional on residing in an SMSA. For whites, a positive association between income and suburbanization was apparent in the 1960 data but, remarkably, the size of the coefficient essentially remained constant for the next thirty years. For blacks, the time series pattern is quite different. As the Wilson hypothesis predicts, the correlation between income and a central city residence is positive until 1970, and then turns negative in 1980. Furthermore, the black coefficient becomes increasingly negative, relative to the white coefficient, in the 1980s.

However, caution should be exercised before ascribing too much explanatory power to the Wilson hypothesis, because the time series pattern of the income coefficients shows that

relative likelihood that high income blacks would move out of central cities pre-dates the 1970s,

yet the stagnation in black property values only begins in 1970.[12] Thus, while the Wilson

hypothesis appears to have merit and to be worthy of further study, it is unclear that it is the full

story.

Riots

Riots could cause a deterioration in the relative value of black-owned housing in central

cities both directly (through property damage) and indirectly (for example, by encouraging flight

from the central cities). Moreover, the occurrence of a riot might be a manifestation of

community grievances which are themselves a response to a process of central city deterioration

already well underway.[13] Thus, we will not argue that the following regressions can identify a

true causal effect, but the association of riots and changes in the value gap might still be

informative.

Our data on riots come from the hearings before the Senate's Permanent Subcommittee

on Investigations (headed by John L. McClellan) regarding "Riots, Civil and Criminal

Disorders." The data cover 1965 through 1967, and so, unfortunately, riots occurring later (for

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[12]Another possible explanation of the stagnation of black-white property values in the 1970s involves changing selectivity bias. The signs of the coefficients of the Mills ratio terms in the value regressions are negative for both races, implying that individuals who, on the basis of their personal characteristics, were unlikely to own homes but, in fact, did own homes, tended to own houses that were less valuable than predicted by observed housing characteristics. If these "selection bias" coefficients in 1980 were more negative for blacks (relative to whites) than in 1970s (perhaps because of deteriorating neighborhood quality), the implication would be that blacks who were homeowners in 1980 had distinctly lower relative willingness to pay for unobserved (to us) housing characteristics, such as neighborhood quality, and hence lower relative property values. However, we found no evidence of such a structural break in the Mills ratio coefficients.

[13] See Tullock (1971), Kuran (1989), Grossman (1991), or DiPasquale and Glaeser (1998) for models of riots.

example, in the summer of 1968 after the assassination of Martin Luther King) are not counted. The Subcommittee's staff identified cities that had experienced riots and then surveyed the mayors of those cities seeking information about the proximate causes and severity of the event.[14]

To test the hypothesis that civil unrest in the late 1960s led to a widening of the racial housing value gap in cities, we matched 114 cities from the 1970 and 1980 IPUMS samples and measured their racial gap in housing values over time. In the first column of Table 4 we regress the change in the log white - log black housing value gap between 1970 and 1980 on a dummy variable for the occurrence of a riot in the late 1960s. Each city's observation is weighted by its 1970 population, and the coefficient identifies whether or not cities with riots experienced a widening value gap compared to cities without riots. There is evidently a strong positive correlation between riots and the overall change in the housing value gap in these cities, but there is no effort in the first column to control for changes in housing characteristics and in the market prices of those characteristics over the decade.

The decomposition analysis presented in the paper's previous section implied that there was a large widening of the residual value gap in the 1970s which completely offset the relative improvements in observable housing quality in determining the overall change in the racial value gap. Given the constraints on the 1970 IPUMS, it is impossible to extract the residuals from Table 2's decomposition on a city-by-city basis.[15] Instead, we had to form a similar 1970 sample

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[14] It is not clear from the testimony of Robert Emmet Dunne and Crichton Jones, who collected and organized the Subcommittee's statistics, exactly how the cities were identified or what criteria were used to determine whether the disturbance was "major" and therefore worthy of inclusion in the study. See Part 1 of the hearings records for the testimony, the data, and the survey sent to the mayors.

[15] Unfortunately, the 1970 microdata samples do not simultaneously offer central city status and metropolitan area identification; that is, one must choose one variable (metro status) or the other (metro area). For the sake of the decomposition analysis we exploited a sample which distinguishes among central city residents, suburban residents of metropolitan areas, and those

which allows city-specific identification; we re-ran regressions just like those underlying Table 2 except for the absence of central city and suburban dummies; and then we extracted the residuals on a city-by-city basis. In columns 2 and 3 of Table 4, we replace the overall change in the value gap with the change in the residual gap, first using residuals based on a decomposition performed using the white coefficients (column 2) and then using residuals based on a decomposition performed using the black coefficients (column 3). Again, there is a positive connection between the occurrence of riots and the change in the racial gap, this time after adjustment for observable housing characteristics and prices. Cities where riots occurred in the late 1960s experienced larger than average deteriorations in the unobserved quality of housing of blacks relative to whites during the 1970s, but the coefficient estimates are smaller in magnitude and their statistical significance is substantially weaker than in the first column; moreover, it is clear from the constant terms that riots cannot be the full story.[16] Thus, though these results are suggestive, whether the association between riots and housing values is causal or incidental awaits further exploration.

V. Conclusion

Over the course of the twentieth century the racial gap in home ownership among male household heads declined from 24.3 percentage points at the turn of the century to 19.5

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outside metropolitan areas using the metro status variable. To make a connection between events in particular places and changes in the valuation of housing in those places, however, we must rely on samples that identify specific metropolitan areas (say, Pittsburgh versus Philadelphia) and relinquish information on central city status.

[16]On the other hand, because our riot variable does not include post-1967 riots which, in fact, occurred, the riot dummy is measured with error, and its coefficient is biased towards zero. Thus, an argument can be made that we are measuring a lower bound to the true correlation between riots and the subsequent deterioration in the relative value of black-owned housing.

percentage points in 1990 (Collins and Margo 2000a, Table 1). This paper demonstrates that similar convergence occurred in the relative value of housing, beginning at least as early as 1940, the first year that the federal census collected data on home values. Much of the convergence in home values prior to the 1960s occurred as blacks moved out of the rural South, where housing values for both races were very low, and became home owners elsewhere in the country.[17] Evidence from the 1960-1990 IPUMS demonstrates that the value of black homes rose relative to white homes because the characteristics of those homes – their size, plumbing and heating facilities, and so on – improved relative to whites. The racial convergence in housing characteristics over this period mimics, and is arguably related to, convergence in other aspects of economic status, in particular, incomes and education (Smith and Welch 1989; Donohue and Heckman 1991).

However, the story is not entirely a happy one. Despite racial convergence in observed housing characteristics, the value of black-owned homes did not converge on the value of white-owned homes in the 1970s, and the relative value of black-owned property in central cities fell in the both the 1970s and the 1980s. We present evidence that the post-1970 experience may be related to the changing socioeconomic characteristics of the black central city populations. We also present evidence that riots in the late 1960s were associated with declining relative black property values in the 1970s. But neither piece of evidence provides a fully satisfactory explanation of what happened to the racial gap in property values in 1970s.

The analysis in this paper might be extended in at least three directions. First, it would be useful to attempt a direct assessment of the effects of federal housing policy on the relative value

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[17]As Collins and Margo (2000a) point out, however, the migration of blacks from the rural South to central cities after 1940 tended to widen the racial gap in home ownership, because residents of central cities were less likely to be home owners than rural or suburban residents.

of black-owned homes. The Fair Housing Act of 1968, and various successive pieces of legislation, were aimed at reducing racial discrimination in housing markets and promoting black access to owner-occupied housing. Although some evidence suggests that the legislation was at least partly successful in achieving these goals (see Collins and Margo 2000a), its role in affecting black-white differences in housing value and wealth is less clear. Second, further exploration of the stagnation of relative black housing values in the 1970s, particularly establishing a causal link for riots, is warranted on the basis of our preliminary findings. Incorporating some analysis of crime rates might provide some additional insight, but crime is likely to be endogenous to the process of deterioration. Lastly, our focus in this paper has been on homes owned by male heads of households. Other studies have shown, however, that female household heads are less likely to be home owners, and it is plausible family structure is also associated with differences in housing values. Thus, a full assessment of long-run trends in the racial gap in housing values will require an examination of the evolution of racial differences in household structure.

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Table 1: Black/White Value of Owner-Occupied Housing, by Region

	1940	1960	1970	1980	1990
Northeast					
Full Sample	0.6410	0.6238	0.6571	0.6492	0.7184
Metro Areas	0.6348	0.5884	0.6163	0.6205	0.6772
Central Cities	0.6687	0.6568	0.7076	0.6924	0.6334
Midwest					
Full Sample	0.5508	0.6889	0.7116	0.6239	0.6777
Metro Areas	0.5127	0.6292	0.6562	0.5752	0.5931
Central Cities	0.5920	0.7246	0.7659	0.6501	0.6024
South					
Full Sample	0.3433	0.5184	0.6023	0.6339	0.6594
Metro Areas	0.3912	0.5679	0.6203	0.6282	0.6518
Central Cities	0.4556	0.6191	0.6686	0.5968	0.6093
West					
Full Sample	0.5973	0.7460	0.7798	0.7791	0.9145
Metro Areas	0.5758	0.7105	0.7430	0.7373	0.8426
Central Cities	0.5598	0.7255	0.7417	0.6894	0.6828
All U.S.					
Full Sample	0.3677	0.5482	0.6181	0.6195	0.6476
Metro Areas	0.4449	0.5803	0.6235	0.6056	0.6207
Central Cities	0.5065	0.6530	0.6920	0.5756	0.5263

Notes: Samples consist of black and white male household heads between 20 and 64 years of age who are not in school. Since 1960, house and property values have been top-coded. Approximately, the top three percent of households in 1960 (above $35,000), 1970 (above $50,000), and 1990 (above $400,000) are topcoded. The top one percent in 1980 (above $200,000) are top-coded, but values are not top-coded in 1940. The average value of the top-coded category in 1960 is estimated by multiplying the top-code by the ratio of the average value of homes in the top three percent in 1940 to the value of homes at the 97th percentile (a factor of 1.436716). Similar multiples are formed for 1970, 1980, and 1990 on the basis 1940's data. All farms, condominiums, trailers, properties used for commercial purposes, properties with 10 acres or more, and owner-occupied units in multifamily buildings are excluded. Observations are weighted using household weights from the IPUMS.
Source: IPUMS (Ruggles and Sobek 1997).

Table 2: Decomposition Analysis, 1960-1990

	First Term	Second Term	Third Term	Fourth Term	Sum
Panel A: 1960-1970					
House Characteristics	-0.1173	-0.0194			
Location	-0.0204	0.0510			
Selection	-0.0131	-0.0195			
Sum	-0.1508	0.0121	-0.0123	0.0016	-0.1494
Panel B: 1970-1980					
House Characteristics	-0.1180	-0.0293			
Location	-0.0114	0.0130			
Selection	-0.0034	-0.0013			
Sum	-0.1330	-0.0177	0.1310	0.0203	0.0006
Panel C: 1980-1990					
House Characteristics	0.0060	-0.0160			
Location	-0.0055	-0.0162			
Selection	-0.0040	0.0105			
Sum	-0.0035	-0.0217	-0.1074	0.0432	-0.0894

Notes: The decompositions are carried out at the sample means using coefficient estimates from regressions on samples of white home owners which include a sample selection term. The property value gap is log white value - log black value, and so positive entries in the table represent a widening of the gap whereas negative entries represent a narrowing of the gap. The sample includes male household heads, age 20-64, not in school, who live in owner-occupied housing with estimated property values available. A number of exclusions are made for the sake of temporal comparability, such as: condominiums and owner-occupied units in multi-family buildings, farms, trailers, properties with more than 10 acres, properties used for commercial purposes, and those with indeterminate metropolitan status. Because the first stage of the Heckman procedure requires information on the household head, observations with missing values for those characteristics are also excluded from the samples used for the decompositions. In particular, those without a reported occupation or with non-positive income are left out. The "first term" reflects change in relative characteristics from 1960 to 1980. The "second term" reflects change in coefficients. The "third term" reflects change in the standardized residuals. The "fourth term" reflects change in the residual variance. See the note to Table 1 for a

description of the treatment of top-codes. In Panels A and B, house characteristics include: the number of rooms, the number of bathrooms (entered as three dummies), the type of heating system (entered as four dummies), the building's age (entered as five dummies), and whether the home is attached to others (i.e., not free standing). In Panel C, we cannot observe the number of bathrooms or the type of heating system. Location characteristics include a dummy for central city residence, a dummy for suburban residence (in SMSA, not central city), and dummies for the Midwest, South, and West regions. The "selection" row reflects changes in the average inverse Mills ratio for the home owners of each racial group ("first term") and changes in the coefficient on the inverse Mills ratio ("second term"). See the text for a description of the implicit first stage of the Heckman procedure, a probit for home ownership based on individual characteristics.
<u>Source</u>: IPUMS (Ruggles and Sobek 1997).

Table 3: Probit Coefficients for Central City Residence (given metropolitan area residence)

	1940	1960	1970	1980	1990
Coefficients on Log Income					
Black	0.0439	0.0171	0.0011	-0.0398	-0.0840
	(0.0070)	(0.0043)	(0.0038)	(0.0037)	(0.0051)
White	0.0048	-0.0486	-0.0465	-0.0479	-0.0418
	(0.0022)	(0.0019)	(0.0016)	(0.0013)	(0.0014)
Coefficients on Occupational Status					
Black	0.5327	0.2521	0.1516	-0.2031	-0.3477
	(0.0853)	(0.0447)	(0.0379)	(0.0365)	(0.0455)
White	0.0838	-0.0841	-0.0925	-0.0797	-0.0474
	(0.0193)	(0.0121)	(0.0110)	(0.0097)	(0.0106)

Notes: The dependent variable is a dummy which equals one if the household head resides in the central city of a metropolitan area. Samples include both home owners and renters, and observations are weighted by household weights. Top-coded income figures are multiplied by 1.4 (before converting to log form). Occupational status is measured with the IPUMS' "occscore" variable (divided by 100) which assigns each person a value based on his three digit occupation; these values are the median income of people with that occupation in 1950. Coefficients represent dF/dx, approximately the change in the probability of central city residence for a unit change in the dependent variable. Standard errors are in parentheses. Each coefficient reported above is taken from a separate regression. These regressions also include a quartic in age, marital status, family size, region of residence, and migrant status.
Source: IPUMS (Ruggles and Sobek 1997).

Table 4: Riots and the Racial Gap in Housing Values, 1970-1980

	ΔRaw Gap	ΔResidual Gap, using White Coefficients	ΔResidual Gap, using Black Coefficients
Riot Dummy	0.1318	0.0420	0.0614
	(0.0447)	(0.0335)	(0.0313)
Constant	0.0227	0.1479	0.1020
	(0.0263)	(0.0215)	(0.0215)
Observations	114	114	114
R^2	0.11	0.02	0.04
Mean Dependent Variable	0.1005	0.1726	0.1382
(standard deviation)	(0.1975)	(0.1484)	(0.1495)
Mean Riot	0.5901	0.5901	0.5901
(standard deviation)	(0.4940)	(0.4940)	(0.4940)

Notes: The dependent variable in the first column is the change in the racial gap in housing value between 1970 and 1980 for each city. In the second and third columns, the dependent variable is the change in the residual gap in housing value, and the residuals are derived from decomposition anaylses based on either the white coefficients or the black coefficients. The observation for each city is weighted by its 1970 population. Robust standard errors are in parentheses below the regression coefficients.

Sources: "Riots, Civil and Criminal Disorders" hearings before the Permanent Subcommittee on Investigations of the Committee on Government Operations, United States Senate, 90th Congress (1967, Part 1). IPUMS (Ruggles and Sobek 1997).

Data Appendix

The underlying regressions and sample means for the decomposition exercise are reported here. The implicit first stage of the Heckit procedure is a probit for homeownership based on household head characteristics. The second stage, on which the decompositions are based, regresses estimated house and property value on the observed housing characteristics and includes the sample selection correction term (mills). The 1980-1990 decomposition is based on a reduced specification because data on bathrooms and heating systems are unavailable for 1990.

Table A1: Regression Coefficients and Sample Means, 1960-1980

	1960 β Coef.	1960 White X	1960 Black X	1970 β Coef.	1970 White X	1970 Black X	1980 β Coef.	1980 White X	1980 Black X
ln value	-----	9.4357	8.7939	-----	9.8311	9.3387	-----	10.8700	10.3770
rooms	0.1096	5.6959	5.4430	0.1213	6.0289	5.7115	0.1188	6.4148	6.1465
cent city	0.2565	0.2620	0.5126	0.2016	0.2410	0.5587	0.2274	0.1846	0.5053
suburb	0.1683	0.4526	0.1930	0.2116	0.4975	0.2083	0.2819	0.5380	0.3013
bath2	0.5556	0.6613	0.6584	0.4559	0.4806	0.6383	0.5176	0.3608	0.4789
bath3	0.7794	0.1369	0.0527	0.6716	0.1955	0.1555	0.7144	0.2064	0.2433
bath4	0.9506	0.1663	0.0453	0.8476	0.3072	0.1216	0.9174	0.4271	0.2579
heat2	0.5579	0.1715	0.1141	0.5073	0.1579	0.1202	0.3337	0.1313	0.1189
heat3	0.4227	0.5061	0.2532	0.3578	0.6069	0.3874	0.2404	0.6212	0.5254
heat4	0.3347	0.0181	0.0084	0.3331	0.0473	0.0339	0.2375	0.1060	0.0826
heat5	0.2512	0.1504	0.1254	0.2114	0.0857	0.1119	0.1656	0.0444	0.0677
built2	0.0005	0.1944	0.1087	-0.0702	0.1156	0.0762	-0.0624	0.1253	0.0763
built3	-0.0445	0.2132	0.1353	-0.1429	0.1642	0.1250	-0.1466	0.1256	0.1200
built4	-0.1576	0.1817	0.1981	-0.1656	0.3256	0.2502	-0.1799	0.2308	0.2240
built5	-0.2511	0.0929	0.1371	-0.2664	0.1222	0.1838	-0.2030	0.2170	0.2188
built6	-0.4792	0.2623	0.3856	-0.5125	0.2445	0.3402	-0.3706	0.2637	0.3376
midwest	0.0339	0.3238	0.2014	-0.0159	0.3198	0.2371	0.0156	0.2931	0.2246
south	-0.0712	0.2394	0.5640	-0.1780	0.2700	0.5206	-0.0829	0.2999	0.5356
west	0.1351	0.1634	0.0865	0.1088	0.1667	0.1015	0.3849	0.1986	0.1087
attached	-0.2008	0.0404	0.1176	-0.2533	0.0253	0.0834	-0.1388	0.0275	0.0862
mills	-0.2760	0.4786	0.6713	-0.1415	0.4059	0.5513	-0.1309	0.3533	0.4744
constant	7.9938	1.0000	1.0000	8.3463	1.0000	1.000	9.1660	1.0000	1.000
N	112638	112638	5734	171603	171603	10210	191420	191420	12813

Notes: The β coefficients are from a regressions on the white samples of household heads, age 20-64, not in school. See the notes to Table 2 for a description of further sample restrictions. Regressions and sample means are weighted using the household weights available in the IPUMS dataset. The suburb dummy equals one for those who reside in a metropolitan area, but not in a central city. The four bathroom categories are: less than 1 complete bathroom, 1 complete bathroom, 1 complete bathroom plus ½ bathroom(s), and 2 or more full bathrooms. The five heating categories are: not heated or heated with fireplace, portable heaters or other equipment;

steam or hot water system; central warm air furnace (excluding heat pumps); built in electric unit (including heat pumps); floor wall or pipeless furnace. The six building age categories are: 0-1 year, 2-5 years, 6-10 years, 11-20 years, 21-30 years, 31 and more years. Refer to the IPUMS documentation for more information on these variables. The Mills variable is the inverse Mills ratio $[\phi(Z\gamma)/\Phi(Z\gamma)]$ based on the household characteristics (Z) and the correlation between those characteristics and home ownership (γ) in probits on the white samples where ϕ is the normal density function, and Φ is the cumulative normal.
Source: IPUMS (Ruggles and Sobek 1997).

Table A2: Regression Coefficients and Sample Means 1980-1990

	1980 β Coef.	1980 White X	1980 Black X	1990 β Coef.	1990 White X	1990 Black X
ln value	-----	10.8700	10.3770	-----	11.4568	11.0532
rooms	0.1794	6.4148	6.1465	0.1693	6.6105	6.2968
cent city	0.3265	0.1846	0.5053	0.6298	0.1537	0.4367
suburb	0.3500	0.5380	0.3013	0.6196	0.5467	0.3613
built2	-0.0809	0.1253	0.0763	-0.0466	0.0996	0.0645
built3	-0.1962	0.1256	0.1200	-0.2042	0.0940	0.0709
built4	-0.2589	0.2308	0.2240	-0.2992	0.2265	0.1998
built5	-0.3455	0.2170	0.2188	-0.3232	0.1743	0.1932
built6	-0.5612	0.2637	0.3376	-0.4458	0.3819	0.4542
midwest	-0.0093	0.2931	0.2246	-0.4624	0.2532	0.1819
south	-0.1006	0.3000	0.5356	-0.4010	0.3149	0.5454
west	0.4018	0.1986	0.1087	0.2129	0.2086	0.1172
attached	-0.1379	0.0275	0.0862	-0.0731	0.0351	0.0970
mills	-0.2250	0.3533	0.4744	-0.3271	0.3756	0.4787
constant	9.8243	1.0000	1.0000	10.5449	1.0000	1.0000
N	191420	191420	12813	165280	165280	9698

Notes: See notes to Table A1.
Source: IPUMS (1997, Ruggles and Sobek).