*AEA Papers and Proceedings 2022, 112: 229–233*
*https://doi.org/10.1257/pandp.20221105*

# On the Impact of Federal Housing Policies on Racial Inequality[†]

*By* Omer Ali[*]

The US housing market over the twentieth century is replete with examples of racially discriminatory practices (Woods 2018). A number of recent studies seek to understand the federal government's role in this history.[1] Accounts implicating federal programs usually mention *redlining*. While this term is generally understood to refer to the exclusion of African Americans from access to mortgage finance, the precise mechanism through which this occurred remains an active area of research.[2]

The two government agencies most closely identified with redlining are the Home Owners' Loan Corporation (HOLC) and the Federal Housing Administration (FHA). The former was founded in 1933 and was tasked with emergency refinancing of existing mortgages to mitigate defaults in the aftermath of the Great Depression. The latter was founded in 1934 and was responsible for issuing mortgage and home improvement loan insurance that guaranteed against a borrower's default. This encouraged lenders to continue making new loans during a time of widespread economic dislocation. The HOLC composed a set of mortgage security maps in which neighborhoods in 239 urban areas were graded by their credit risk. Their availability has allowed researchers to study the effect of a neighborhood's grade on home values, home ownership, and socioeconomic mobility among other outcomes (Krimmel 2020; Aaronson, Hartley, and Mazumder 2020; Aaronson et al. 2021).

Notwithstanding the close association between redlining and the HOLC's maps, however, recent findings suggest that the HOLC did, in fact, serve Black homeowners. This is despite routinely grading Black neighborhoods as having the worst credit rating (Michney and Winling 2019; Fishback et al. 2020). The FHA, on the other hand, was much less likely to insure mortgages issued to Black homeowners (Fishback et al. 2021).

This paper investigates the role played by the FHA in exacerbating racial disparities in the housing market. More specifically, I study the impact of FHA mortgage insurance activity between 1935 and 1939 on racial disparities in home ownership and home values.[3] I find that the FHA had no effect on the racial gap in home ownership while expanding the racial gap in home values.

The FHA quickly became an important player in the residential mortgage market, where it insured loans for both existing homes as well as new builds. Of total nonfarm housing starts in the United States, the FHA accounted for 6 percent in 1935, 16 percent in 1936, 26.7 percent in 1938, and 33.4 percent in 1940. By 1942, the FHA served 25 percent of residential mortgages in the United States (Freund 2007, p. 134).

There is evidence that the agency engaged in underwriting practices that disfavored Black prospective home buyers. The FHA kept detailed records of where Black residents lived in urban areas.[4] Underwriting standards adopted by the FHA included explicit racial considerations that discouraged insuring in racially mixed neighborhoods: "The Valuator should investigate areas surrounding the location to determine whether

[*] Samuel DuBois Cook Center on Social Equity, Duke University (email: omer.ali@duke.edu). This material is based upon work supported by the National Science Foundation SBE Postdoctoral Research Fellowship under Grant No. 2105253. I would like to thank Michael Getaneh for excellent research assistance.

[†] Go to https://doi.org/10.1257/pandp.20221105 to visit the article page for additional materials and author disclosure statement.

[1] For a recent review, see Small and Pager (2020, pp. 55–58). At the same time, some studies emphasize the role of the private market in precipitating racial disparities (Akbar et al. 2019).

[2] See Hillier (2003, 2005); Aaronson, Hartley, and Mazumder (2020); Michney and Winling (2019); and Fishback et al. (2020, 2021).

[3] I use mortgage insurance data between 1935 and 1939 because to the best of my knowledge, these are the only available records of FHA activity by county.

[4] Figure 2 in the online Appendix provides one example of a map of Brooklyn composed by the FHA in which blocks where Black residents lived are clearly identified.

or not incompatible racial and social groups are present" (Freund 2007, p. 158, quoting from section 233 of the 1938 FHA Underwriting Manual).

Freund (2007) observes that "following the rules that guided FHA practice nationwide, the Detroit-area office focused almost exclusively on promoting the construction, purchase and repair of privately owned homes by *certain* white people. There is no evidence that blacks qualified for FHA-insured loans before World War II" (p. 134–35). Rothstein (2017) further argues that the FHA's policies were justified by a theory of how property prices were likely to be affected by the presence of African Americans in a neighborhood:

> The FHA justified its racial policies—both its appraisal standards and its restrictive covenant recommendations—by claiming that a purchase by an African American in a white neighborhood, or the presence of African Americans in or near such a neighborhood, would cause the value of white-owned properties to decline. (Rothstein 2017, p. 93)

In a study of a near-complete sample of housing deeds between 1935 and 1940 in Peoria, Illinois; Greensboro, North Carolina; and Baltimore, Maryland, Fishback et al. (2021) find that no African American homeowners in Peoria, Illinois, received an FHA-insured mortgage. In the other two cities, they find only 25 African American homeowners with FHA-insured mortgages in Baltimore and only a single one in Greensboro.

## I. Data and Methodology

### A. *Data*

Individual-level census data between 1920 and 1970 are obtained from the Integrated Public Use Microdata Series (Ruggles et al. 2021). Data for 1970 are from the Form 1 Metro and Form 2 Metro samples. Data for 1960 are from the 1 percent and 5 percent samples. Data for 1950, 1940, 1930, and 1920 are from the respective 1 percent samples for those years. The sample is restricted to heads of households for all the analysis that follows. This yields 2,880,871 observations with complete data for the main variables of interest. Home values are unavailable for 1920 and 1950, while home ownership is unavailable for 1950. County demographic census data for 1940 are obtained through Social Explorer (US Census Bureau 1940).

County-level data on the cumulative value of FHA mortgage insurance and total New Deal program loans are collected from records of the Office of Government Reports.[5] Summary tables for county and individual variables are in online Appendix Tables 1–4.

### B. *Estimation*

The main estimation equation is a triple difference-in-differences specification with continuous treatment. This specification measures the difference between the marginal effect of FHA insurance on the outcomes of White respondents and its effect on Black respondents.

$$\begin{aligned} Y_{icst} = \alpha + \bar{\beta}\left[\log\left(FHA_c\right) \times \overline{Year}_t \times Black_{icst}\right] \\ + \gamma_1 \log\left(FHA_c\right) + \bar{\gamma}_2 \overline{Year}_t + \gamma_3 Black_{icst} \\ + \bar{\gamma}_4\left[\log\left(FHA_c\right) \times \overline{Year}_t\right] \\ + \gamma_5\left[\log\left(FHA_c\right) \times Black_{icst}\right] \\ + \bar{\gamma}_6\left[\overline{Year}_t \times Black_{icst}\right] + \bar{\theta}\,\bar{X}_{icst} \\ + \bar{F}_s + \epsilon_{icst}. \end{aligned}$$

Observations are indexed by individual $(i)$, county $(c)$, state $(s)$, and year $(t)$. $\overline{Year}$ is a sequence of year fixed effects for decennial censuses between 1940 and 1970. The omitted category includes the years 1920 and 1930, since those data were collected before the 1935–1939 treatment period. *FHA* measures the cumulative value of mortgage insurance between 1935 and 1939 in each county. *Black* is a binary variable indicating whether a respondent's race was reported as Black or Negro. Individual and county control variables are grouped in the vector $\bar{X}$, and $\bar{F}$ is a sequence of state fixed effects.[6]

[5] These data were generously shared by Price Fishback and previously described in Fishback, Kantor, and Wallis (2003).

[6] Individual controls include gender, age, occupational score, employment, and school enrollment status. County controls include a number of demographic characteristics in 1940: population (total, density, Black, and White), total

The coefficients of interest are grouped in the vector $\overline{\beta}$. A negative estimate is evidence that FHA mortgage insurance expands the racial gap in $Y$ in the corresponding census year, relative to the period before treatment. Intuitively, if the variable *FHA* were binary, $\beta$ would measure the difference between the difference-in-differences estimate of treatment in the White subsample and the difference-in-differences estimate of treatment in the Black subsample. Since *FHA* is a continuous variable, $\beta$ measures the difference in the marginal effect of treatment between the two groups of respondents. When $Y$ is a binary indicator of home ownership, $\beta$ is the percentage point change in the racial gap in home ownership in response to a 1 percent change in the value of mortgages insured by the FHA. On the other hand, when $Y$ is the log of home values, $\beta$ is the percent change in the racial gap in home values in response to a 1 percent change in the value of FHA mortgage insurance.

There may be omitted variables that correlate with both outcome variables as well as the amount of FHA mortgage insurance. Hence, I employ an instrumental variables strategy that uses the distance between each county and the FHA field office with jurisdiction over the county's mortgage insurance applications. The jurisdiction of field offices usually spanned an entire state, but for some large states, there were multiple offices with jurisdictions that bisected its area (see online Appendix Figure 1).[7]

This identification strategy rests on two assumptions. The first is that distance to FHA office is a meaningful predictor of the value of FHA mortgage insurance. This is confirmed in the first-stage regression reported in Table 1. The second assumption is that distance to FHA office is uncorrelated with factors that affect the change in racial disparities. This may not hold, for example, if offices tended to locate in urban centers, say, where racial disparities in housing would have increased for reasons unrelated to FHA mortgage insurance. One possible way to investigate this would be to see whether trends in the outcome variables in the period prior to the beginning of the FHA program are related to the instrument. Unfortunately, we only have a measure of change for home ownership, since data on home values are not available before 1930. Taking the available data, we can construct a measure of change in the racial gap in home ownership in each county between 1920 and 1930. Positive values indicate an increase in the racial gap. This measure has a correlation coefficient of $-0.0198$ with distance from FHA office and a $p$-value of 0.2751, suggesting that trends in the racial gap are uncorrelated with the instrument.

Table 1—Summary of First-Stage IV Regression Results

| | *Dependent variable:* | |
|---|---|---|
| | log(FHA) | log(FHA per capita) |
| log(Distance from FHA office) | −0.339 | −0.104 |
| | (0.071) | (0.017) |
| County controls | Yes | Yes |
| State fixed effects | Yes | Yes |
| Observations | 2,969 | 2,969 |
| Adjusted $R^2$ | 0.441 | 0.467 |
| $F$-test on log(Distance from FHA office) | 23.61 (df = 2,911, 1; $p = 0.00$) | 37.76 (df = 2,911, 1; $p = 0.00$) |

## II. Results

Table 1 shows that distance is negatively correlated with the absolute and per capita value of FHA-insured mortgages. The bottom panel reports the results of a test of the strength of the distance measure as an instrument. The null hypothesis is rejected in both models, with the size of the $F$-statistic above the threshold required to rule out a weak instrument. Online Appendix Table 5 reports the complete output.

Table 2 displays the coefficients in the vector $\overline{\beta}$ on the triple interaction term $log\left(FHA\right) \times Black \times \overline{Year}$. A negative estimate implies that the FHA program expanded the racial gap in a posttreatment census year relative to the period 1920–1930 (recall that the treatment period is 1935–1939). Overall, the FHA

foreign born, housing units, public emergency workers, and those employed and seeking work. These variables are standardized to make their coefficient estimates comparable in size. Finally, I include total loans from all New Deal programs.

[7] A similar strategy using distance from a local HOLC office is used to study the effect of HOLC lending on housing outcomes in Courtemanche and Snowden (2011) and Fishback et al. (2011).

Table 2—Summary Results of OLS and IV Models for Home Ownership and Home Values

| | *Dependent variable:* | | | |
|---|---|---|---|---|
| | Household head is owner | | log(home value) | |
| | *OLS* | *IV* | *OLS* | *IV* |
| $log(FHA) \times Black \times 1940$ | 0.0001 | −0.0004 | −0.044 | −0.036 |
| | (0.001) | (0.002) | (0.004) | (0.008) |
| $log(FHA) \times Black \times 1960$ | 0.008 | −0.002 | −0.023 | −0.056 |
| | (0.001) | (0.002) | (0.004) | (0.007) |
| $log(FHA) \times Black \times 1970$ | 0.017 | −0.001 | −0.041 | −0.133 |
| | (0.002) | (0.009) | (0.006) | (0.020) |
| Individual controls | Yes | Yes | Yes | Yes |
| County controls | Yes | Yes | Yes | Yes |
| State fixed effects | Yes | Yes | Yes | Yes |
| Observations | 2,328,404 | 2,303,678 | 1,210,841 | 1,197,890 |
| Adjusted $R^2$ | 0.148 | 0.147 | 0.619 | 0.601 |

*Note: FHA*, *Black*, year fixed effects, and pairwise interaction terms between these variables are omitted.

program appears to have had a limited effect on the racial disparity in home ownership: the OLS coefficients are positive, but the IV coefficients are negative and insignificant. The racial gap in home values, on the other hand, expanded in counties with relatively higher FHA insurance activity. These results suggest that while African American buyers continued to acquire properties, they may have chosen homes with lower purchase prices, as they lacked access to credit relative to White buyers.

To put the coefficient estimates in context, we may ask how the racial gap in home values would change if we move from the twenty-fifth percentile to the seventy-fifth in the distribution of counties by FHA activity. Taking the OLS and IV estimates as the bounds, this would result in an expansion of the racial disparity by 9.93–12.1 percent in 1940, 6.34–15.4 percent in 1960, and 11.3–36.7 percent in 1970. Online Appendix Table 6 reports the complete output for all models.

## III. Discussion

Treatment intensity is measured by the amount of FHA-insured loans between 1935 and 1939. The FHA continued to insure loans well beyond 1940 (in fact, the agency is active to this day). It is arguable that appraisal was racially biased at least until the passage of the Fair Housing Act in 1968. In addition, following the Servicemen's Readjustment Act of 1944 (GI Bill), returning veterans became eligible for home loan benefits through the Veterans' Administration (VA). As such, while estimates of the treatment effect in 1940 are likely to be valid, neglecting the additional activity of the FHA and VA beyond this date renders estimates of the long-term effects of the FHA's mortgage insurance program less reliable.

The analysis does not account for population movements across counties that may be related to the FHA program. If the populations of counties across decennial censuses are driven by the activity of the FHA, the treatment coefficient no longer estimates the impact of the program on a static population. Rather, it estimates the effect on a mobile population that is itself responsive to the program. Treating the composition of county populations as endogenous is beyond the scope of this paper but represents a fruitful avenue for future research. Notwithstanding these limitations, the results presented here are a tentative step toward understanding the impact of an important federal program on racial inequality.

## REFERENCES

**Aaronson, Daniel, Daniel Hartley, and Bhashkar Mazumder.** 2020 "The Effects of the 1930s HOLC 'Redlining' Maps." Federal Reserve Bank of Chicago Working Paper 2017-12.

**Aaronson, Daniel, Jacob Faber, Daniel Hartley, Bhashkar Mazumder, and Patrick Sharkey.** 2021. "The Long-Run Effects of the

1930s HOLC 'Redlining' Maps on Place-Based Measures of Economic Opportunity and Socioeconomic Success." *Regional Science and Urban Economics* 86: Article 103622.

**Akbar, Prottoy A., Sijie Li, Allison Shertzer, and Randall P. Walsh.** 2019. "Racial Segregation in Housing Markets and the Erosion of Black Wealth." NBER Working Paper 25805.

**Courtemanche, Charles, and Kenneth Snowden.** 2011. "Repairing a Mortgage Crisis: HOLC Lending and Its Impact on Local Housing Markets." *Journal of Economic History* 71 (2): 307–37.

**Fishback, Price V., Shawn Kantor, and John Joseph Wallis.** 2003. "Can the New Deal's Three Rs Be Rehabilitated? A Program-by-Program, County-by-County Analysis." *Explorations in Economic History* 40 (3): 278–307.

**Fishback, Price V., Jessica LaVoice, Allison Shertzer, and Randall Walsh.** 2020. "The HOLC Maps: How Race and Poverty Influenced Real Estate Professionals' Evaluation of Lending Risk in the 1930s." NBER Working Paper 28146.

**Fishback, Price V., Jonathan Rose, Kenneth A. Snowden, and Thomas Storrs.** 2021. "New Evidence on Redlining by Federal Housing Programs in the 1930s." NBER Working Paper 29244.

**Fishback, Price V., Alfonso Flores-Lagunes, William C. Horrace, Shawn Kantor, and Jaret Treber.** 2011. "The Influence of the Home Owners' Loan Corporation on Housing Markets during the 1930s." *Review of Financial Studies* 24 (6): 1782–1813.

**Freund, David M.P.** 2007. *Colored Property: State Policy and White Racial Politics in Suburban America.* Historical Studies of Urban America. Chicago: University of Chicago Press.

**Hillier, Amy E.** 2003. "Redlining and the Home Owners' Loan Corporation." *Journal of Urban History* 29 (4): 394–420.

**Hillier, Amy E.** 2005. "Residential Security Maps and Neighborhood Appraisals: The Home Owners' Loan Corporation and the Case of Philadelphia." *Social Science History* 29 (2): 207–33.

**Krimmel, Jacob.** 2020. "Persistence of Prejudice: Estimating the Long Term Effects of Redlining." Unpublished. https://osf.io/preprints/socarxiv/jdmq9/.

**Michney, Todd M., and LaDale Winling.** 2019. "New Perspectives on New Deal Housing Policy: Explicating and Mapping HOLC Loans to African Americans." *Journal of Urban History* 46 (1): 150–80.

**Rothstein, Richard.** 2017. *The Color of Law: A Forgotten History of How Our Government Segregated America.* New York: Liveright Publishing.

**Ruggles, Steven, Sarah Flood, Ronald Goeken, Jose Pacas, Matthew Sobek, Sophia Foster, and Megan Schouweiler.** 2021. "IPUMS USA: Version 11.0 [dataset]."

**Small, Mario L., and Devah Pager.** 2020. "Sociological Perspectives on Racial Discrimination." *Journal of Economic Perspectives* 34 (2): 49–67.

**US Census Bureau.** 1940. "Total Population, Population Density, Race, Unemployment Rate, Public Emergency Workers, Housing Units, Foreign Born (White Population)." Prepared by Social Explorer.

**Woods, Louis Lee, II.** 2018. "'The Inevitable Products of Racial Segregation': Multigenerational Consequences of Exclusionary Housing Policies on African Americans, 1910–1960." *American Journal of Economics and Sociology* 77 (3-4): 967–1012.