

HAS NORTH CAROLINA'S COMMUNITY ADVANTAGE PROGRAM CAUSED AN INCREASE IN BLACK HOMEOWNERSHIP?

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“The unequal distribution of wealth and opportunity is a constant concern for economists. Often tools for combating this inequity are theoretical and the empirical evidence is thin. Thomas Fleming breaks this trend by looking at the efficacy of a program encouraging black home ownership in North Carolina using a powerful econometric model called Difference in Differences. Fleming compares the home ownership rates of North Carolina to Georgia during the implementation of the Community Advantage Program to show that the program has significantly increased black home ownership in North Carolina.”

Introduction

Racial inequality in the United States has been a persistent crisis throughout the country's existence. As a result of historically unequal access to housing, justice, healthcare, education, and employment; today's black youth face significantly poorer life opportunities than their white counterparts. The racial wealth gap is the disparity in median household wealth between black and white households (Amadeo, 2021). It marks “the greatest degree of racial inequality” - with Black families owning about one eighth the assets of White families (Conley, 2000). Since “less wealth translates into fewer opportunities for upward mobility” (Hanks et al, 2018) it is clear that the cycle of inequality, originating from the wealth gap, is self-perpetuating.

To make any significant progress in closing the racial wealth gap, intentional policy interventions are required (ibid). Proposals for such intervention are plentiful and range from baby bonds (bonds for black children valuing between \$500 and \$50,000 available to the individual at the age of 18) to a universal basic income and even federal job guarantees (ibid). These proposals all have unique virtues and pitfalls. The United States could well benefit from wider trials in which they are applied regionally. In the meantime, these

proposals remain simply ideas yet to be truly tested.

One proposal that is testable has been offered by Catherine Ruetschlin, senior policy analyst at Demos. Ruetschlin acknowledges that home equity is a large percentage of most families' wealth. As a result, increasing minority homeownership is seen as critical to closing the wealth gap (Amadeo, 2021). In an interview with *Forbes* magazine, Ruetschlin identified North Carolina's Community Advantage Program (CAP) as a good model to help reduce the part of the racial wealth gap stemming from homeownership (Shin, 2015). The Community Advantage Program was introduced in 1983 to provide "responsibly underwritten home loans and low down payments" to low and moderate-income and minority homeowners (UNC, 2021) with the intention of improving homeownership among this demographic.

This paper will test Ruetschlin's hypothesis that the program increased black homeownership in North Carolina. If this hypothesis is proved to be true- that this program did indeed increase black homeownership, the implications for nationwide policy interventions will be significant. In a time where the new Biden administration has pledged to address the racial wealth gap (Epperson & Fox, 2021), finding workable, impactful policies could bring about dramatic changes to modern America.

Literature Review

From insight into the relevant literature on the matter, there is reason to be hopeful that the CAP improves black homeownership and shrinks the racial wealth gap itself.

The Urban Institute has provided a 5 point framework to reduce the racial homeownership gap (McCargo et al, 2019). Of their recommendations, two include factors common to the CAP: to strengthen access to and capacity of homeownership CDFIs (lending to low income earners) and to increase visibility and access of down payment assistance (ibid). Given that these proposals are deemed to be desirable towards reducing the homeownership gap, this suggests Ruetschlin's hypothesis might well be true.

Baradaran (2020) prophesies that the racial wealth gap can indeed be diminished by means to improve black homeownership. The author identifies a positive feedback loop that sees increased home ownership leading to an increase in wealth. Increased home ownership in a community leads to an increase in home values in the area. This increase in value increases wealth over time. Which in turn generates a growing tax base. Finally, this results in better schools which lead to higher incomes in the future. If what Baradaran identifies is true, the value of seeking policies to increase black homeownership is evident.

Empirical Approach

$$Y_i = \beta_0 + \beta_1 NC_i + \beta_2 1990_i + \beta_3 (NC_i * 1990_i) + u_i \quad (1)$$

A DiD model will be used to test whether the CAP caused an increase in black homeownership. DiD models test whether there was a significant change in a treatment group across time periods, with respect to a control group.

The level of black homeownership in two different states in 1980 and 1990 as CAP began in 1983. These states will be North Carolina, where the program was introduced and Georgia (where there was no such program), the control. Georgia was selected as an appropriate control group as a result of its similar sized black population (< 12% difference), median house price (< 3% difference) and median income (<4% difference) to North Carolina in 1980 (Census Bureau, 1993).

The regression equation is indicated by Equation 1. Y_i represents the dependent variable, black homeownership. It is black homeownership that we are looking to measure for given years and states. β_0 represents the intercept of the regression line. This shows what the level of black homeownership would be if the dummy variables NC_i and 1990_i both = 0, i.e. the level of black homeownership for Georgia in 1980. The independent variables are NC_i and 1990_i . NC_i is a dummy variable that = 1 for observations recorded from North Carolina, the treatment group and 0 for observations from Georgia. β_1 captures the difference in black homeownership levels for observations recorded in North Carolina relative to those recorded in Georgia. 1990_i is a dummy variable that = 1 when the observation is taken from 1990 (after the treatment) and 0 in the pre-treatment period. β_2 captures the difference in black homeownership levels for both states in 1990 relative to 1980 levels. Finally the equation includes an interaction term, $NC_i * 1990_i$. This takes the value of 1 when both $NC_i = 1$ and $1990_i = 1$, else 0. The coefficient of this term, β_3 captures the effect of the treatment in changing black homeownership levels by measuring the difference in average outcome in the treatment group before and after treatment minus the difference in average outcome in the control group before and after treatment (Albouy, 2004). This is therefore the coefficient of interest in this study.

Following analysis of this model I will add in more regressors in order to examine whether the treatment effect is consistent as the variation in black homeownership is better explained. These additional regressors are household rent and household income.

It is Ruetsclin's belief that the CAP caused an increase in black homeownership. I will therefore be testing her hypothesis in this paper:

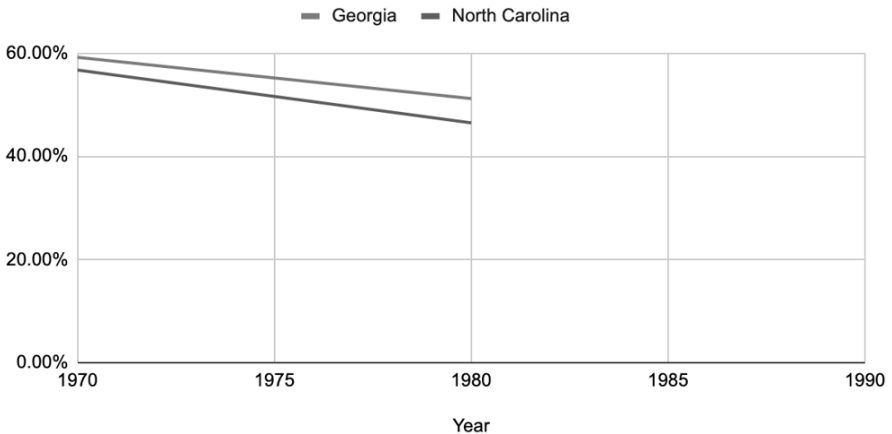
$H_0 : \beta_3 = 0 \rightarrow$ the treatment did not have a positive effect on black homeownership

$H_1 : \beta_3 \neq 0 \rightarrow$ the treatment caused a positive impact on black homeownership

The critical assumption of modelling using a DiD model is in the absence of treatment, the treatment group would have developed in the same way as the control group over time. In order to examine this, I regarded the changes in black homeownership in Georgia and North Carolina between 1970 and 1980, before the treatment program was introduced. The results are exhibited in Graph 1:

Graph 1

**Georgia and North Carolina Black Homeownership %
1970-1980**



Data Source: IPUMS (2020)

Between 1970 and 1980, the proportion of black homeownership in North Carolina decreased with an almost parallel trend with Georgia. We can therefore assume that in the absence of treatment, the developments to black homeownership proportions would continue to be parallel in 1990. This assumption will be tested later for a greater degree of certainty.

Description of the Dataset

The data used for this project was sourced from Integrated Public Use Microdata Series USA (IPUMS). IPUMS provides census and survey data for the United States. This data includes a wide range of available variables to specify. The variables selected for this paper were years (preselected as either 1970, 1980 or 1990) and states (Georgia and North Carolina only) and ownership (a dummy variable taking value 1 when the property is owned and 0 when rented). In addition, household income and rent were added in order to provide state fixed effects in subsequent regressions. Race was preselected as “Black/African American/Negro,” therefore all observations in the data set relate exclusively to ‘black’ individuals. There are 5546 observations in total. These are taken from a 1% sample of the two states’ black populations. This was chosen since a random sample does not take into account any individual specific factors in the selection process. This meant that there was no pre-existing bias from the data set. A sample of this size was selected as it was large enough to offer results that could potentially reflect a significant change in ownership.

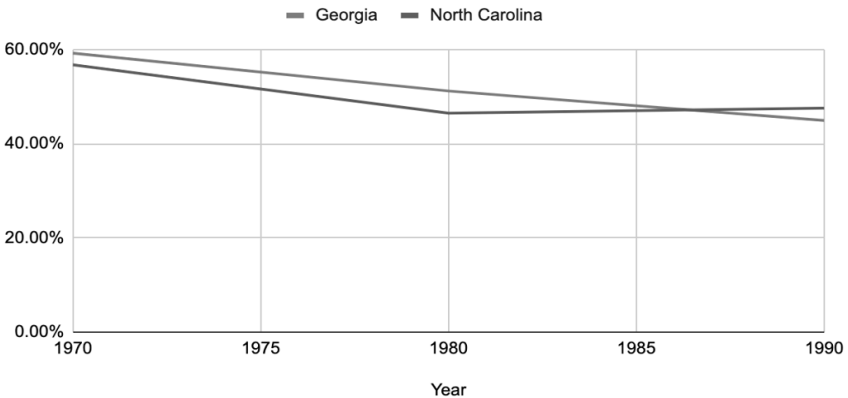
The mean homeownership across all observations (both states, both years) was 47%. The mean level of black homeownership in North Carolina (across the two periods) was 47% while for Georgia it was 47.6%.

The mean for Georgia fell from 59.19% in 1970 to 51.17% in 1980 to 44.9% in 1990. Across the same periods, the black homeownership rate in North Carolina fell from 56.72% (1970) to 46.45% (1980) before rising to 47.55% (1990).

The change in average levels of black homeownership for each state from 1970-1990 is shown in Graph 2:

Graph 2

Georgia and North Carolina Black Homeownership % 1970-1990



Empirical Results

Table 1

(All models n = 5546)	Black homeownership level (Y)		
Variable	1)	2)	3)
STATE	-0.04718 *	0.007853 .	0.0132 .
	(0.01987)	(0.01444)	(0.0135)
YEAR	-0.06261 ***	-0.1812 ***	-0.07055 ***
	(0.01846)	(0.01381)	(0.01349)
STATE x YEAR	0.07361 **	0.04634 *	0.02559 .
	(0.027)	(0.01971)	(0.01846)
RENT		0.002518 ***	0.002476 ***
		(0.00003745)	(0.00003508)
HOUSEHOLD INCOME			-0.000007882 ***
			(0.0000002752)
R ² value each model	0.001621	0.4383	0.508

(* represents significance at the 10% level, ** significance at the 5% level and *** significance at the 1% level)

Table 1 shows the coefficient estimates for the regressors in each model as well as their respective standard errors below.

The results of the DiD model (1) show that the Community Advantage Program had a positive effect on black homeownership levels. This is illustrated as the DiD coefficient, β_3 , is positive. The value of 0.07361 indicates that the treatment in North Carolina increased black homeownership levels by approximately 7.4% from 1980 to 1990 relative to Georgia over the same period.

The DiD estimator is shown to be significant at the 10% level in the first two models as the p value of the two-tail t-test < 0.10 . In this way the null hypothesis, that the treatment would not have a positive effect on black homeownership, can be rejected. Meanwhile the alternative hypothesis, that the treatment caused a positive impact on black homeownership, failed to be rejected. This aligns with the policy recommendations of McCargo et al (2019); improving access to lending and down payment assistance redu-

ces the racial homeownership gap.

However, as state fixed effects were added into the specifications (2) and (3), the size and significance of the DiD estimate diminished. This is because the variation in black homeownership levels was increasingly better explained with the addition of the regressors. This is illustrated by the fact that the adjusted R squared value for the regression increased from 0.001621 (in 1) to 0.4383 (2) to 0.508 (3). The significance of the estimator is diminished by the additional regressors in (3) to such an extent that it is no longer statistically significant at the 10% level. This indicates that perhaps as the variation in black homeownership is better addressed by the regression, the impact of the treatment is realised to be lesser.

Nonetheless the results of this study must not be ignored. Considering the fact that household wealth marks “the greatest degree of racial inequality” (ibid), policies shown to have a positive effect on black homeownership should be paid attention to. At a time where the US government has expressed a commitment to address the racial wealth gap, programs like this should be studied in depth. If it can be shown with greater evidence that improving access to lending and downpayment support improves black homeownership (as Ruetschlin hypothesised), programs like this should be replicated across the United States.

Checks and Tests

In order to test the assumption of parallel trends I performed what is known as a “placebo” test. For this test, I performed an additional DiD estimation using a “fake” treatment group, that is, a group that I knew was not affected by the program (Gertler et al, 2016). In this instance I chose to test whether there was a significant effect to explain the changes in black homeownership levels for the same two states between 1970 and 1980. Given that the Community Advantage Program was introduced in 1983, there was no reason to suspect that there would be a significant treatment effect. The results of the placebo test are shown in Table 2.

Table 2

<i>Variable</i>	<i>Black homeownership level (Y)</i>
<i>STATE</i>	0.01759
	(0.02364)
<i>YEAR</i>	-0.06915 ***
	(0.0226)
<i>STATE x YEAR</i>	-0.06477
	0.03082

(* represents significance at the 10% level, ** significance at the 5% level and *** significance at the 1% level)

Table 2 shows the DiD coefficient is not significant at the 10% level. Given that there was no significant induced change between the states over the two decades, this provides confidence towards the parallel trends assumption. In the decade before the treatment, there was no reason to suspect that changes in the two states' black homeownership levels were not aligned.

Heteroscedasticity occurs when the variance of the error term (conditional on regressors) in a regression is not constant. Where heteroscedasticity is present the OLS estimator can no longer be considered efficient. The Breusch-Pagan Test examines whether heteroscedasticity is present with a null hypothesis that the variance of error term conditional on regressors is constant and an alternative hypothesis that it is not. For this regression, a Breusch Pagan Test was undertaken in R providing the following results in Table 3:

Table 3

studentized Breusch-Pagan test
data: didreg
BP = 4.1971, df = 3, p-value = 0.241

Given that the p-value is not less than 0.05, we fail to reject the null hypothesis. We do not have sufficient evidence to say that heteroscedasticity is present in the regression model.

Evaluation

The results provided by the latter regressions carried out in this study indicate that the model was better explained with added regressors. This was to the extent that the treatment effect was diminished to the point of relative insignificance. In this way this model would likely be even better explained by a greater degree of complexity - for instance accounting for the forms of renting or by holding local-specific factors, such as access to credit, constant.

There are several intrinsic limitations to the DiD technique. For one, it cannot be verified with certainty that the treatment assigned to North Carolina (the CAP) was entirely exogenous to the low levels of black homeownership in the state. This is an important assumption that this paper has not verified. If the program cannot be seen as exogenous, the degree to which a clear causal relationship can be identified is limited. In addition, with such a large-scale consideration as homeownership level, it is difficult to convincingly attribute the difference between the two states' results to just one program. Finally, the proportion of the population accounted for in this study was small and there is no guarantee that the proportion of people included in the study who received support from the CAP was substantial.

Considering these limitations, extensions of this study might fare better using panel data surveys in order to better gauge the differential ease/difficulty individuals face in buying a home. This could be done in the form of a comparison of individuals: some receiving support from CAP, others not. These individuals would all have similar rents and incomes and be based in the same state (North Carolina). In following their opportunities to buy homes, a more insightful study could be drawn. This would be without the same constraints of uncertainty, scale or location specific factors.

Conclusion

This paper has explored the impact of the CAP on the levels of black homeownership. Through modelling a regression of black homeownership levels using a DiD study of North Carolina and Georgia between 1980 and 1990, this paper has found the program to have had a significant positive effect on improving black homeownership levels. Although this result was shown to be less significant as the variation in black homeownership was better explained, this is no reason to ignore the CAP. Rather, it highlights a need for further inspection into the program's utility. In a time where the racial wealth

gap appears to be growing (Schermerhorn, 2019) rather than shrinking, programs like this cannot be ignored.

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