

THE CONSEQUENCES OF RISING SUBURBAN POVERTY ON THE HOUSING CHOICE VOUCHER PROGRAM: A STUDY OF ATLANTA, GEORGIA

SHIVA KOORAGAYALA, EMORY UNIVERSITY (2013)

ABSTRACT

This study investigates the consequences of suburban poverty on meeting two primary goals of the HUD-administered housing choice voucher (HCV) program: to de-concentrate inner-city poverty and to extend greater access to opportunities that enable socioeconomic mobility. Recent studies have shown that housing choice vouchers have been spreading away from central cities into the suburbs. While promising, the quality of many of these suburban neighborhoods no longer aligns with the idealistic notions of suburban opportunity. This paper measures the quality of the neighborhoods in which voucher-occupied households are located. It then compares the quality of suburban and urban neighborhoods by using composite neighborhood quality and opportunity structure indices. The data confirm a decentralization of vouchers but highlight re-clustering in low-quality and opportunity-poor suburbs. Secondly, although suburban neighborhoods collectively are of higher quality, their opportunity structures are relatively weak. Furthermore, there is an inverse relationship between neighborhood quality and the proportion of voucher-occupied households regardless of racial makeup and metropolitan location. Atlanta's public housing authorities need to engage in more intentional strategies to help families move to opportunity-rich neighborhoods and to work past existing barriers to geographic mobility. Future policy objectives need to encourage inter-municipality collaboration and to target federal and state aid for neighborhood development.

The story of American cities is not one of ubiquitous opportunity or of unrestrained liberty. Rather, metropolitan areas across the nation remain characterized by stark inequity and pervasive segregation. Take the case of Atlanta, Georgia. This Olympic City has seen decades of constant growth and expansion and has become a regional hub for business, education, transportation, and politics. Juxtaposed against its promising trajectory, estimates by the American Community Survey indicate that 13.5 percent of people living in the Atlanta-Sandy Springs-Marietta metropolitan statistical area (MSA) are currently living below the federal poverty line.¹ Moreover, 84.1 percent of Atlanta's poorest residents live in neighborhoods of extreme poverty. From the middle of the twentieth century onwards, Atlanta's share of urban poor grew and geographically concentrated into neighborhoods within the "inner-city." Additionally, as emphasized in Sjoquist's "The Atlanta Paradox," poverty and segregation in Atlanta cannot be mentioned without their racial implications. Ex-

tensive redlining, the development of public housing, white flight, and racially-charged zoning and land-use policies were among the historical forces that isolated black residents into poor inner-city regions and continue to perpetuate high levels of residential segregation.²

Urban scholars are in agreement that such concentrated poverty, which traditionally refers to census tracts with at least 40 percent of residents living under the poverty line, exacerbates the challenges of living in poverty itself.³ The quality of schools and public services, infrastructure, exposure to and perception of crime, access to jobs, and bridging social networks are among the neighborhood characteristics that are influenced by concentrated poverty. Thus, neighborhood quality has been theorized as being amongst the strongest indicators of socioeconomic mobility.⁴

Since the 1980s, policy responses from the Department of Housing and Urban Development (HUD) signal recognition of these consequences. One of its largest assisted housing programs, the Housing Choice

Voucher Program (HCV), has been used to decentralize and de-concentrate urban poverty. The HCV program was designed to reduce racial and economic residential segregation in American metropolitan areas. In alignment with this overarching goal, participants in the housing voucher program are given the freedom to live wherever they choose, ideally outside of segregated and highly poor inner-city locations. The HCV program intends to provide low-income families with greater degrees of mobility and access to opportunities that can improve socioeconomic well-being. The quality of the destination neighborhoods to which HCV families move within the metropolitan areas is thereby essential to measuring the success of the program. In ideal conditions, participants in the voucher program would move to opportunity-rich neighborhoods; however, empirical studies question the program's success and achievements. Most recently, a Brookings Institution study found a "suburbanization" of these vouchers.⁶ While such geographic decentralization may seem desirable in terms of the goal of poverty deconcentration, a recent rise in suburban poverty has altered the nature of metropolitan opportunity altogether.

Suburban neighborhoods generally have fewer social service actors and non-profits,⁷ limited accessibility to public transportation, and increasingly segregated schools.⁸ Thus, rising suburban poverty may lead to a new range of challenges for suburban social service providers and policy-makers. Although extensive research has been completed on measuring the efficacy of the HCV program, little attention has been given to the impact of rising suburban poverty in relation to the goal of deconcentrating poverty.

In this thesis, I address this gap in knowledge by posing several questions: What types of suburban neighborhoods are voucher recipients moving to? How robust are the opportunity structures in these suburban neighborhoods? And how do these neighborhoods compare to their urban counterparts? Moreover, do the conditions in these destination neighborhoods align with the goals of the HCV program? I answer these questions by examining data from 2000 to 2009 in Atlanta, Georgia. The paper is comprised of two broad sections: a review of literature and an empirical analysis of destination voucher neighborhoods.

LITERATURE REVIEW

How is rising suburban poverty influencing HUD's goal of deconcentrating urban poverty via the Housing Choice Voucher Program? This review addresses this primary question by outlining the following topics: the historical formation of concentrated poverty in inner-cities, federal housing programs intended at deconcentrating this poverty, and concerns emerging from rising suburban poverty over the past decade.

Concentrated Inner-City Poverty

William Julius Wilson and Xavier de Souza Briggs are among the many urban scholars who argue that neighborhoods are instrumental in shaping one's life opportunities. A combination of individual and policy-driven forces has resulted in extreme variations in neighborhood quality within singular metropolitan statistical areas (MSA). A recent review of the literature illustrates that characteristics such as access to jobs, exposure to and perception of crime, the quality of public and social services and schools, poverty, and connections to positive social networks are determined at least partially by residential location.⁹

A mixture of historical, social, economic, and political forces throughout the twentieth century have resulted in a concentration of low-income and minority residents in America's central cities.¹⁰ Drawing upon Jargowsky's definition,¹ concentrated poverty refers to census tracts in which at least 40 percent of the population lives below the federal poverty line.¹² Neighborhoods with concentrated poverty tend to have high crime rates, few social service providers, high rates of obesity, few options for healthy lifestyles, and segregated and struggling schools. Additionally, these neighborhoods tend to lack "bridging" social capital and therefore contribute to social isolation.¹³ As indicated by these and other empirical studies, the geographic concentration of poverty exacerbates the hardships faced by those living in poverty. In cities like Atlanta, racial segregation transcends mere economic segregation. Wilson urges policy-makers to "consider how explicit racial structural forces directly contribute to inequality and concentrated poverty."¹⁴ While the creation of poor and black urban cores is complex and multifaceted, primary structural forces include redlining, white flight, suburban resistance to black populations, and public housing.

Redlining as a practice refers to racially charged mortgage-lending policies in which the Federal Housing Administration (FHA) excluded black neighborhoods entirely, regardless of financial standing, from receiving federal mortgage capital intended to encourage suburban homeownership. Policy makers, politicians, and real estate agencies rationalized this practice on the basis that investments in black neighborhoods would lead to inevitable economic losses.¹⁵ The Housing Act of 1968 outlawed these discriminatory selling practices, but later studies and journalistic endeavors such as the Atlanta Journal-Constitution's "The Color of Money" exposed continued implicit forms of the practice. Coupled with these practices were the parallel forces of white flight and suburban separatism. The former refers to the exodus of white populations from inner-cities to suburban communities that were characterized by having good schools, low crime, and being the epitomes of the "American Dream." Much of this migration was racially motivated. Lassiter argues that middle-class whites employed a color-blind racial ideology that considered the segregation and white homogeneity of suburbia as a product of individual meritocracy, not of structural racism.¹⁶ The Federal Interstate Act further rationalized suburbia, because highways seamlessly connected white suburbs to central business districts. Wealthy white suburbanites in Atlanta's Cobb and Gwinnett Counties vehemently opposed the extension of the Metropolitan Atlanta Rapid Authority Transit Administration (MARTA) rail lines into the suburbs for fears of attracting urban problems. As low-income and black residents grew more isolated in central cities, loci of employment started to shift to the suburbs.

The first generation of federally funded affordable housing also contributed to and exacerbated urban decay.¹⁷ Soon after their introduction into inner-city neighborhoods, traditional high-rise public housing developments quickly became symbols of extreme poverty. These developments were and remain located mostly in densely populated urban ghettos. They continue to isolate many low-income and black populations from the economic growth and opportunities budding in the metropolitan periphery. As this brief review shows, urban decay was and continues to be a product of many intertwined factors.

In the 1960s, the Department of Housing and Urban Development's (HUD) policy objectives be-

gan to reflect the crucial link between place and opportunity.¹⁸ In 1993, President Clinton's Secretary of HUD, Henry Cisneros, claimed that "highly concentrated minority poverty [is] urban America's toughest challenge."¹⁹ Poverty de-concentration has since become a primary goal of the HUD and has led to the creation of one of its largest housing programs today, the Housing Choice Voucher Program. Tenant-based programs, such as the HCV program, rely far less on increasing the physical supply of affordable housing through traditional public housing. HUD now invests more in the HCV program and the Low Income Housing Tax Credit program than in traditional public housing.²⁰ This program provides low-income families the option of moving away from segregated and poor inner-city communities.

HCVs were first introduced to HUD's policy toolbox in 1981 as a modified version of Section 8 housing. The Reagan administration pushed for the HCV program because the administration's prevailing sentiment was that the cost of existing assisted housing programs, not their poor conditions, was the primary problem for poor residents.²¹ The administration's primary goals were to both cut the costs of assisted housing and decrease government involvement in the execution of assisted housing interventions. Vouchers appeared to fit both of these requirements since they enable low-income residents to rent private market homes.²² Voucher-recipients are responsible for paying 30 percent of the fair market rent, and a local public housing authority covers the remainder. Section 8 was formally merged and eventually replaced by the housing voucher program in 1998.²³ Unlike their predecessor, housing vouchers are not geographically restricted to a PHA's jurisdiction and can actually be used anywhere in the nation. A study by Hartung and Henig (1997) found that between the 1970s and 1990, the "ratio of tenant-based to project-based subsidies increased from 0.6 vouchers to 4.75 vouchers per every unit of project-based housing."²⁴ The HCV program was initially greeted with angst by Democrats and driven by the conservative bloc.

With President George H.W. Bush's administration came a more positive atmosphere and bipartisan consensus. The Housing Act of 1990 signaled a paradigm shift for assisted housing policy; Hays identifies its four key elements to be: a "reliance on tenant-based assistance programs, an increased reliance on CDCs, an emphasis on increased low-income home-owner-

ship, and the integration of other social features.”²⁵ This last element is perhaps of most importance to this study. The 1990 Act recognizes that place-based policies cannot operate successfully in a vacuum and must be conducted in concert with other social service initiatives. Hays argues that those on the right favored this latter element because they saw an integrated approach to social services as the path to self-sufficiency. While Democrats agreed about these long-term goals, they argued that this outlook was far too individualistic and minimized the structural barriers to socioeconomic mobility. Nevertheless, this dual emphasis on people and place-based intervention has become the prevailing ideology in affordable housing policy.

In its official documentation, HUD explicitly states a primary policy objective of the HCV program: “Providing opportunities for very low-income families to obtain rental housing outside areas of poverty or minority concentration is an important goal of the housing choice voucher program.”²⁶ Additionally, HUD states that it seeks to identify low-poverty neighborhoods, recruit landlords in these neighborhoods, encourage families to move away from high-poverty and segregated neighborhoods, and connect families to agencies that provide relocation counseling.²⁷ At a more local level, the Atlanta Housing Authority identifies poverty levels, crime, and access to jobs, transportation, and good schools as priorities in its provision of vouchers.

Geography of Housing Choice Vouchers

Because a key imperative of the HCV program is to improve neighborhood conditions for low-income residents, the location of vouchers is vital to assessing the program’s effectiveness. In theory, PHAs encourage voucher recipients to move to higher income neighborhoods, but voucher recipients face serious barriers in reaching this ideal end.²⁸ Several qualitative studies have been completed to document the motivations, preferences, barriers, and processes that drive where voucher participants tend to relocate. Rent and size criteria set forth by local public housing agencies drive the search strategies for choosing homes, and suburban discrimination, social isolation, and excessive utility and transportation costs are among the most cited concerns for HCV participants.²⁹

Beyond the mere location of vouchers lies the question of the quality of neighborhoods in which voucher-holding families are living. Studies by Goetz,

Kingsley et al., and Devine et al. each indicate that a significant proportion of voucher recipients, both traditional and those relocating from public housing under HOPE VI, are moving to neighborhoods with above-average poverty rates. Devine et al. find that 22 percent of voucher recipients lived in census tracts in which at least 30 percent of residents live under the poverty line in 2000, and 10 percent of the voucher recipients live in census tracts with 40 or more percent poverty.³⁰ Galvez finds a small decrease in the share of voucher recipients living in high poverty neighborhoods; however, she notes that the typical voucher recipient lives in a neighborhood with above 20 percent poverty.³¹ In their study, Kingsley et al focus on vouchers given to residents moving from public housing.³² They find that this group of voucher recipients moves to neighborhoods poorer than the national average. Goetz reports that this group of participants moved to neighborhoods that have increasing poverty rates, and those who relocate multiple times tend to move to neighborhoods with even greater poverty after subsequent moves.³³ Thus, my review uncovers modest improvements in poverty rates in destination neighborhoods and finds that voucher recipients are moving to neighborhoods that have rising poverty rates. These empirical observations are troubling as they may indicate a deviation from HUD’s goal to increase socioeconomic mobility.

Of special relevance to this study, recent HUD data show that a significant percentage of vouchers are being used in the suburbs, indicating at least some success at deconcentrating the poverty found in public housing developments. Covington, Freeman, and Stoll use HUD’s “Picture of Subsidized Households” (PSH) dataset to measure the percentage of voucher recipients who live in urban versus suburban census tracts; their national study is longitudinal and find that 50 percent of vouchers are being used in suburban neighborhoods in 2008.³⁴

Suburbia Redefined

Merely the issue of suburban relocation of HCVs is not a troublesome phenomenon in itself. Recent data challenge the utopic veneration of American suburbia. An article by Garr and Kneebone, entitled “The Suburbanization of Poverty,”³⁵ uses data from the 2000 and 2008 American Community Survey and finds that American suburbs collectively had a higher share of the nation’s poor relative to central cities by

2008. Additionally, the study argues that suburbs are home to the fastest growing poverty rates, finding a 25 percent growth in suburban poverty nationwide. Atlanta in fact has the highest share of its metropolitan low-income residents living in the suburbs at 84.5 percent.³⁶

This rise in absolute and relative suburban poverty within the metropolitan context has prompted scholars to uncover a wide range of new and uniquely suburban challenges. Press, Murphy, and Allard and Roth write about a general dearth of social service providers in suburban municipalities.³⁷ Troublingly, Garr finds that by 2010, the number of unemployed in the nation's suburbs grew by 3.1 million people, which inevitably increased the demand for many of these services. Murphy and Hanlon warn against treating all suburbs as one and the same. While some inner-ring suburbs are similar to urban neighborhoods, others have pockets of deep poverty that go unnoticed by funders. These suburbs especially lack the necessary social and political infrastructure for handling rising poverty. Murphy refers to these suburbs as existing in "policy blind spots."³⁸

The Concern

The suburbanization of HCVs unravels the notion of suburban prosperity. Although studies indicate that the HCV program in general has made strides in decentralizing poverty, it is unclear whether voucher participants are indeed moving to higher quality and opportunity-rich neighborhoods. Pendall and Devine et al. find that voucher recipients in the HCV program tend to live in distressed neighborhoods.³⁹ Popkin et al. say that PHAs need to be wary of the clustering of voucher recipients in poor neighborhoods.⁴⁰

The existing literature does not directly study the influence of suburban poverty on the experiences of HCV families. Additionally, scholars often only consider the consequences of poverty levels that lie above the 40 percent threshold. However, it may be important to document the effects of lower poverty rates given the challenges that some suburban neighborhoods may face. Depending on the findings, this project may reveal key vulnerabilities in the implementation of this program, thereby deviating from a primary goal of the HCV program to provide low-income families with opportunities to leave segregated and poor neighborhoods and access more opportunities for socioeconomic mobility. The dual forces of rising sub-

urban poverty and the suburban decentralization of housing vouchers are quite possibly creating a new range of challenges for public housing authorities and related actors in Atlanta.

Research Questions

My primary research question is as follows: is the suburban spread of Housing Choice Vouchers to low-income suburban neighborhoods aligning with HUD's primary policy goal of helping families move into neighborhoods that provide better opportunities for socioeconomic mobility in the case of Atlanta, Georgia? Supporting questions include:

- Over the past decade, how has the urban-suburban distribution of Housing Choice Vouchers changed in the Atlanta metropolitan area?
- Has there been a deconcentration of vouchers in the Atlanta metropolitan area?
- What types of neighborhoods are voucher recipients mostly relocating to?
- Has the quality of destination voucher neighborhoods changed between 2000 and 2009?
- Does the quality of destination neighborhoods vary by location (i.e. suburban or urban location), and if so, has this pattern changed between 2000 and 2009?

Hypotheses

Based on existing literature and recent demographic and geographic trends, two concerns emerge: (1) the intra-metropolitan locations of HCVs and (2) the quality of destination neighborhoods. In attempts to answer the primary research concern and supporting question, I build upon existing literature to posit the following hypotheses. Each of these hypotheses requires a distinct methodological approach that is described in the subsequent section.

Ho (1): Suburban HCV neighborhoods are not of higher quality than urban HCV neighborhoods regardless of the number and percentage of voucher-occupied households.

Ha (1): Suburban HCV neighborhoods are of higher quality than urban neighborhoods regardless of the number and percentage of voucher-occupied households.

Ho (2): As the quality of a neighborhood increases, the proportion of HCV-occupied households increases.

Ha (2): As the quality of a neighborhood increases, the proportion of HCV-occupied households decreases.

Ho (3): Urban neighborhoods provide weaker opportunity structures than suburban neighborhoods within the Atlanta metropolitan area.

Ha (3): Urban neighborhoods provide stronger opportunity structures than suburban neighborhoods within the Atlanta metropolitan area.

THE DATA

Independent Variable

The independent variable in this study is the number or proportion of housing choice vouchers in a census tract. To collect this data, I use HUDs “Picture of Subsidized Households”⁴¹ (PSH) dataset, which contains national data on all of HUD’s subsidized housing programs. The PSH dataset is available from 1996-2009 and contains data at various geographic scales ranging, from the census tract to the national level. This study follows common practice and uses data from the census tract level to best capture intra-metropolitan variation.⁴² From the PSH dataset, I use the “number of vouchers reported” variable as the count variable for number of vouchers in each census tract. This data may underrepresent the true number of vouchers due to underreporting or misreporting by local PHAs. Particularly, I chose four years of data for analysis: 2000, 2004, 2007 and 2009. These years adequately reflect the change in metropolitan poverty over the past decade and fit the data limitations of the PSH datasets.⁴³

I will rely on Atlanta Regional Commission’s ten-county definition for describing the Atlanta Metropolitan Area. I specifically address Cherokee, Clayton, Cobb, DeKalb, Douglass, Fayette, Fulton, Gwinnett, Henry, and Rockdale Counties. Following OMB standards, neighborhoods located within the “City of Atlanta” will be considered urban and the remaining will be considered suburban. As stated previously, this rather crude distinction between urban and suburban neighborhoods does not intend to overlook or simplify the great diversity that that lies within the broad concept of suburbia. Rather, this simplification merely aids in carrying out this empirical analysis.

Table 1 describes the data extracted from the PSH dataset in the 10-county ARC area over the four time points. In 2000, 16,236 vouchers were spread throughout the 565 census tracts in the metropolitan area. This number rises to 28,250 by 2009. The growth in the population of residents in the HCV program

reflects this rise in actual vouchers reported. 97-98 percent of families fall into the “very low-income” economic bracket in each year. Additionally, approximately 80 percent of the participating families are considered to earn extremely low incomes. The majority of the participants are of minority racial groups, primarily African-American. However, the percentage of black families receiving housing vouchers drops from 92.3 percent black in 2004 to 79 percent black in 2007. This change is most likely due to underreporting of data on the part of Atlanta-based housing authorities. As a participant in the Moving to Work Demonstration, the Atlanta Housing Authority was not required to report data to HUD in 2007.

Data Sources

The dependent variables are two indices that measure neighborhood quality and access to opportunities that promote socioeconomic mobility. This study builds upon existing methodologies to construct measures of neighborhood quality that align with HUDs goals for the HCV program. Table 2 provides the names, geographies, and availabilities of the constituent indicators found in the first index, which this study will refer to as the “Composite Neighborhood Quality Index” (CNQI) from here onwards. Table 3 provides a complete list of the indicators included in the second index, which this study will refer to as the “Opportunity Index” from here onwards. This second index essentially is a subset of the first index. The methodology for the construction of these indices is adapted from work by Dr. Michael Rich and Dr. Moshe Haspel at Emory University.⁴⁴

This section provides greater detail regarding the data sources, coding, and rationales for including each of these above-listed indicators.

Poverty Rate. In 2012, the federal poverty threshold was \$23,283 for a family of four with two children, and varies on an annual basis.⁴⁵

Educational Quality. I operationalize educational quality through the percentage of students meeting standards on the Fourth Grade CRCT, the Georgia state exam, at the school level.

Healthcare Access. I measure healthcare access via two proxy measures: (1) designation as a medically underserved community (MUA) and (2) proximity to a Health Resources and Services Administration (HRSA) supported “Health Center.” The HRSA designates areas that have “too

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	All Vouchers			
	2000	2004	2007	2009
Number of Vouchers	16,236	19,168	16,630	28,250
Population	48,000	58,109	48,326	77,113
Average Household Income	11,441.63	11,761.41	13,259.3	12,090.00
% Very Low Income	98.57	98.60129	97.65	97.05
% Extremely Low Income	80.65	83.95177	80.09	80.89
Majority Income Welfare	8.4	9.765273	5.76	6.20
% Minority	92.07	93.78778	81.169	94.09
% Black	90.48	92.35	79.049	91.93
% Native American/ Pac. Islander	.081	0.086	0.10	0.14
% Hispanic	3.38	3.9	4.36	4.28
% Surrounding Neighborhood in Poverty	18.30	12.62	12.32	15.24
% Surrounding Neighborhood Minority	74.85	52.05	52.71	64.08

Source: Picture of Subsidized Housing, HUD

Table 2: Indicators in the Composite Quality Index

Indicator	Geography	2000	2004	2007	2009	Source
Poverty Rate	Census Tract	Yes	Yes	Yes	Yes	2010 Census, 2005-2009 ACS
Educational Quality	Location	Yes	Yes	Yes	No	National Longitudinal School-Level State Assessment Database; Dept. of Education
Foreclosure Filings	Census Tract	No	No	Yes	Yes	Equity Depot
Access to Transportation	Location	Yes	Yes	Yes	Yes	ARC GIS Basefiles; MARTA
Number of Non-profits	Zip Code	Yes	Yes	Yes	Yes	County Business Patterns
Healthcare Access	Location	Yes	Yes	Yes	Yes	Health Resources and Services Administration (HRSA)
Medically Underserved Areas	Census Tract	Yes	Yes	Yes	Yes	Health Resources and Services Administration (HRSA)
% Of Households on Public Assistance	Census Tract	Yes	Yes	Yes	Yes	2005-2009 ACS; 2010 Census
Vacancy Rate	Census Tract	Yes	Yes	Yes	Yes	2005-2009 ACS; 2010 Census
% Of Renter Occupied Households	Census Tract	Yes	Yes	Yes	Yes	2005-2009 ACS; 2010 Census

Table 3: Indicators in the Opportunity Index

Indicator	Geography	2000	2004	2007	2009	Source
Educational Quality	Location	Yes	Yes	Yes	No	National Longitudinal School-Level State Assessment Database; Dept. of Education
Access to Transportation	Location	Yes	Yes	Yes	Yes	ARC GIS Basefiles
Number of Non-profits	Zip Code	Yes	Yes	Yes	Yes	County Business Patterns
Healthcare Access	Location	Yes	Yes	Yes	Yes	Health Resources and Services Administration (HRSA)
Medically Underserved Areas	Census Tract	Yes	Yes	Yes	Yes	Health Resources and Services Administration (HRSA)
Number of Jobs	Zip Code	Yes	Yes	Yes	Yes	2005-2009 ACS; 2010 Census

Table 4: Numbers of Vouchers in City and Suburban Census Tracts

	City		Suburbs	
	Vouchers	City	Vouchers	Suburb
2000	6769	41.69%	9467	58.31%
2004	6856	42.37%	9325	57.63%
2007	1758	10.57%	14872	89.43%
2009	10594	37.50%	17656	62.49%

Data Source: Picture of Subsidized Housing 2000, 2004, 2007, 2009; Department of Subsidized Housing

few primary care providers, high infant mortality, high poverty, and/or high elderly populations⁶ as medically underserved areas or populations.⁴⁷ HRSA health centers are responsible for providing quality primary care for traditionally underserved populations, including those who are homeless or live in public housing.

Access to Public Transportation. For these indices, access to transportation is operationalized via proximity to a bus stop. I use GIS to geocode bus routes operated by three large public transportation providers in the ten-county ARC region: the Metropolitan Atlanta Rapid Transit Authority, Cobb County Transit, and Clayton County C-Tran.

Foreclosures. To account for the number of foreclosures in each neighborhood, I use data compiled by the “Neighborhood Nexus” database.⁴⁸ The data comes from the private firm “Equity Depot” and measure the number of foreclosure filings in each neighborhood. Foreclosure filings refer to properties that are eligible for public auction, and may skew the true number of foreclosures in a neighborhood.

Access to Social Service Providers and Jobs. To account for access to social service providers, I follow Murphy’s methodology. To isolate data on social service providers, I extracted data for NAICS Industry Code 624190, which refers to “Other Individual and Family Services.” This category “comprises establishments primarily engaged in providing nonresidential individual and family social service assistance services.”⁴⁹ The dataset’s primary drawback is that it only contains organizations that pay formal payroll and leaves out single-employee institutions.

Public Assistance, Vacancy Rates, Percent of Renters, and Unemployment Rate.⁵⁰ Public assistance refers to payments that families can receive in the form of aid from the government and includes payments to families with disabled children (AFDC, ADC), temporary assistance to needy families (TANF), and emergency assistance. Vacancy rate refers to the percentage of households that are unoccupied by tenants within given geographic boundaries. The proportion of renters equals the number of renter-occupied to total occupied households in a census tract.

METHODOLOGY AND RESULTS

The empirical portion of the paper is divided into three parts: the location of housing choice voucher re-

ipients in the Atlanta metropolitan area, the quality of neighborhoods in which voucher recipients live, and the opportunity structures within each of these neighborhoods. Each section provides the methodology for hypothesis testing, when applicable, and then lists the results.

Location of Vouchers in the 10-County ARC Region Methods

For the sake of privacy, the PSH dataset does not provide geographic data for each individual voucher or family, though it still provides geographic information at the census tract level. I created maps that depict both the numbers and proportion of voucher-occupied households for each of the years. To look for clustering, I use a measure of residential evenness and calculate an index of dissimilarity for each of the years. Massey and Denton define the index:

[The index of dissimilarity] measures departure from evenness by taking the weighted mean absolute deviation of every unit’s minority proportion from the city’s minority proportion, and expressing this quantity as a proportion of its theoretical maximum.⁵¹

The equation for index of dissimilarity follows (Equation 1). This index represents the percentage of vouchers that would need to be relocated in the metropolitan area to reach an even distribution of vouchers across the entire 10-county metropolitan area.

$$D = \sum_{i=1}^n \frac{t_i |p_i - P|}{2TP(1 - P)} \quad \text{Equation 1}$$

Results: Location of Vouchers

1) Suburban versus Urban Location

Since 2000, suburban census tracts have contained more HCVs than those within the City of Atlanta, proper (Refer to Table 4). The City of Atlanta contained 6,769 voucher recipients in 2000 and 10,594 in 2009. The drastic decline in the City of Atlanta’s HCV’s in 2007 is most probably due to underreporting by the Atlanta Housing Authority and other city PHAs. By contrast, suburban census tracts were home to 9,467 voucher recipients in 2000 and 17,656 HCVs in 2009. Suburban census tracts have had a greater share of the metropolitan area’s HCVs since 2000, and their share has increased since then. In 2000, suburban census tracts contained 58.31 percent of the metropolitan area’s vouchers, and by 2009, they contained 62.49 percent. More recent data would most likely in-

dicating further growth in this share.

The maps in Figure 1 illustrate the distribution of vouchers in the 10-county metropolitan area by census tract. To highlight change, the counts of HCVs per census tract were ranked and sorted into terciles of low, medium, and high numbers of vouchers. In 2000, the loci of high voucher census tracts were the southern half of the City of Atlanta, South DeKalb County, Clayton County, and tracts in Fulton County just south of the City of Atlanta. In 2004, tracts in West Cobb County, South DeKalb County, Douglas County and portions of Gwinnett County saw major increases in the number of vouchers. These same areas saw further increases by 2007. The decrease in vouchers in the City of Atlanta evident in the 2007 map is most likely due to underreporting and is not an empirically valid pattern. Minimal changes occurred between 2007 and 2009 in terms of the geographic distribution of HCVs. These maps indicate a degree of decentralization of HCVs from traditional core of Public Housing, namely the City of Atlanta. While the decentralization of vouchers is meaningful and does align with the overarching goals of housing mobility programs, decentralization itself does not imply an improvement in the quality of destination neighborhoods. The second aspect of the evaluation of the HCV program is to measure the extent to which HCVs are concentrated.

2) Concentration of Vouchers

In 2000, 64.6 percent of vouchers would have to be relocated to reach parity with the total number of occupied households. This value was 53.5 percent in 2004, 52.3 percent in 2007, and 56.3 percent in 2009. Thus, it appears that there was a degree of deconcentration of the number of vouchers between 2000 and 2007; however, since 2009, HCVs have been re-concentrated in select census tracts.

The following maps (refer to Figure 2) depict the proportion of vouchers to occupied households in each census tract. As in the previous maps, census tracts were divided into terciles. In 2000, the census tracts with the highest proportions of vouchers to total occupied housing units were mostly located within the City of Atlanta, in northern Clayton, and in southwest DeKalb County. In 2004, Clayton County, South DeKalb, and South Fulton Counties experienced a rise in tracts with high proportions of vouchers to occupied housing units. This pattern continues in 2007 and 2009, with Cobb County also experiencing an

increase in high voucher proportion tracts. The 2007 map is skewed by underreported Atlanta data. Loci of high voucher proportion tracts are highlighted with black circles.

Neighborhood Quality

This section explores the quality of neighborhoods in which voucher participants live. For this portion of the empirical study, the unit of analysis is that of the census tract. The independent variable is the classification of each census tract as either urban or suburban. The dependent variable for hypotheses one and two is “neighborhood quality,” which is measured by the CNQI index.

To construct the CNQI index, I needed to operate on a standard geography. I use GIS mapping techniques to reconcile the geographic discrepancies found in the raw data and tagged addresses to the centroid of the closest census tract. After the geographies were in sync, I constructed a composite score for each of the tracts. I calculated z-scores to standardize the values for each of the indicators- except for the dummy variables- around the population mean. Then, I summed the various z-scores and calculated a score for each census tract.

1) Hypothesis 1:

Ho (1): Suburban HCV neighborhoods are not of higher quality than urban HCV neighborhoods regardless of the number and percentage of voucher-occupied households.

This analysis consists of three parts: first, I looked for differences in neighborhood quality between urban and suburban tracts without any control variables. Secondly, I looked for differences in neighborhood quality between urban and suburban tracts when controlling for the number of vouchers. I ranked the number of vouchers in each census tract and sorted the census tracts into low, medium, or high numbers of vouchers. I used one-directional t-tests to statistically compare the mean neighborhood quality scores for each neighborhood. Thirdly, I looked for differences in neighborhood quality between urban and suburban tracts when controlling for the proportion of housing voucher-occupied households in each census tract. I also ranked these proportions of vouchers for each year and separated the census tracts into low, medium, or high proportions numbers of vouchers. I then used one-directional t-tests to statistically compare the mean neighborhood quality scores be-

Figure 1: Terciles of Housing Choice Vouchers; 2000, 2004, 2007, 2009

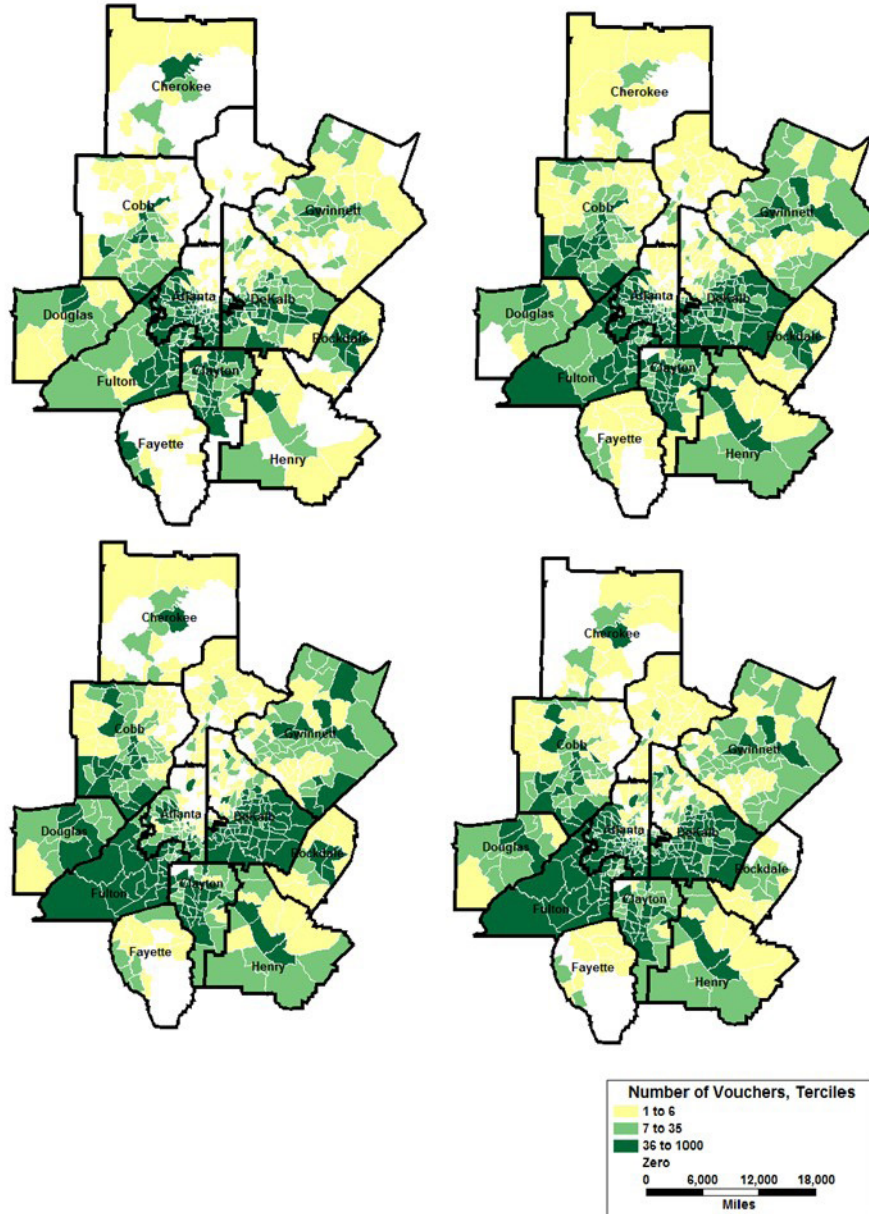
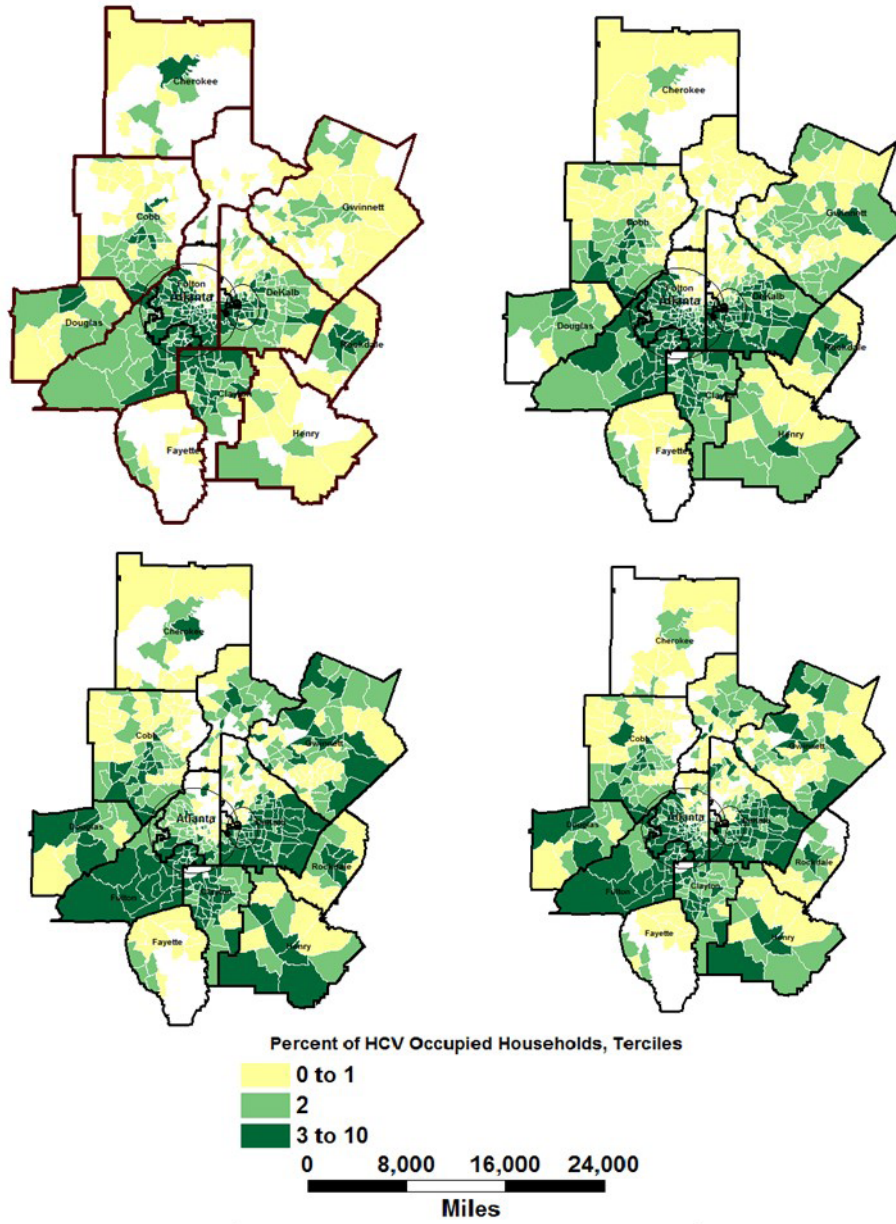


Figure 2: Terciles of the Proportion of HCV-Occupied Housing Units; 2000, 2004, 2007, 2009



Data Source: Picture of Subsidized Housing 2000, 2004, 2009

Table 5: Summary Statistics of CNQI Scores

	Mean	Std. Deviation	Min	Max	Number of Observations
2000	-0.869	4.168	-17.039	8.912	417
2004	1.333	5.982	-18.107	19.536	495
2007	-0.607	5.202	-24.879	12.186	476
2009	-0.481	4.871	-22.969	10.993	500

tween suburban and urban census tracts. To falsify the null hypothesis, tests must show that suburban tracts have lower CNQI scores than urban neighborhoods.

2) Hypothesis 2:

Ho (2): As the quality of a neighborhood increases, the proportion of HCV-occupied households increases.

Hypothesis Two seeks to establish a relationship between neighborhood quality and its proportion of voucher-occupied households. To test for this relationship, I once again used a bivariate regression between the proportion of voucher-occupied households and neighborhood quality, operationalized by the CNQI index. To falsify the null hypothesis, the proportion of voucher-occupied households must not decrease as the CNQI score increases.

Results

Table 5 lists the summary statistics for the CNQI for census tracts that contain at least one voucher in 2000, 2004, 2007, and 2009, respectively.

In 2000, the mean CNQI score is -0.08687, followed by 1.333, -0.6074, and -0.4805 in the subsequent years. The standard deviations around the means stay relatively constant between 4.168 in 2000 and 5.982 in 2004. To better illustrate the metropolitan distribution of CNQI scores, I ranked and divided scores for all census tracts, including those containing zero HCVs, into quintiles. A score of 1 refers to the lowest quintile of scores, and a score of five refers to the highest quintile of scores. The following maps depict the CNQI scores in the ten-county ARC region (Figure 3).

In 2000, the majority of the highest quality neighborhoods were located in East Cobb County, North DeKalb, North Fulton, and in Gwinnett Counties. On the other hand, the lowest quality neighborhoods were located in the southern half of the City of Atlanta and Clayton County. Similarly, neighborhoods with scores in the second quintile of scores are found in Rockdale, Henry, and Douglass Counties. In 2004, the majority of the highest quality neighborhoods were located in

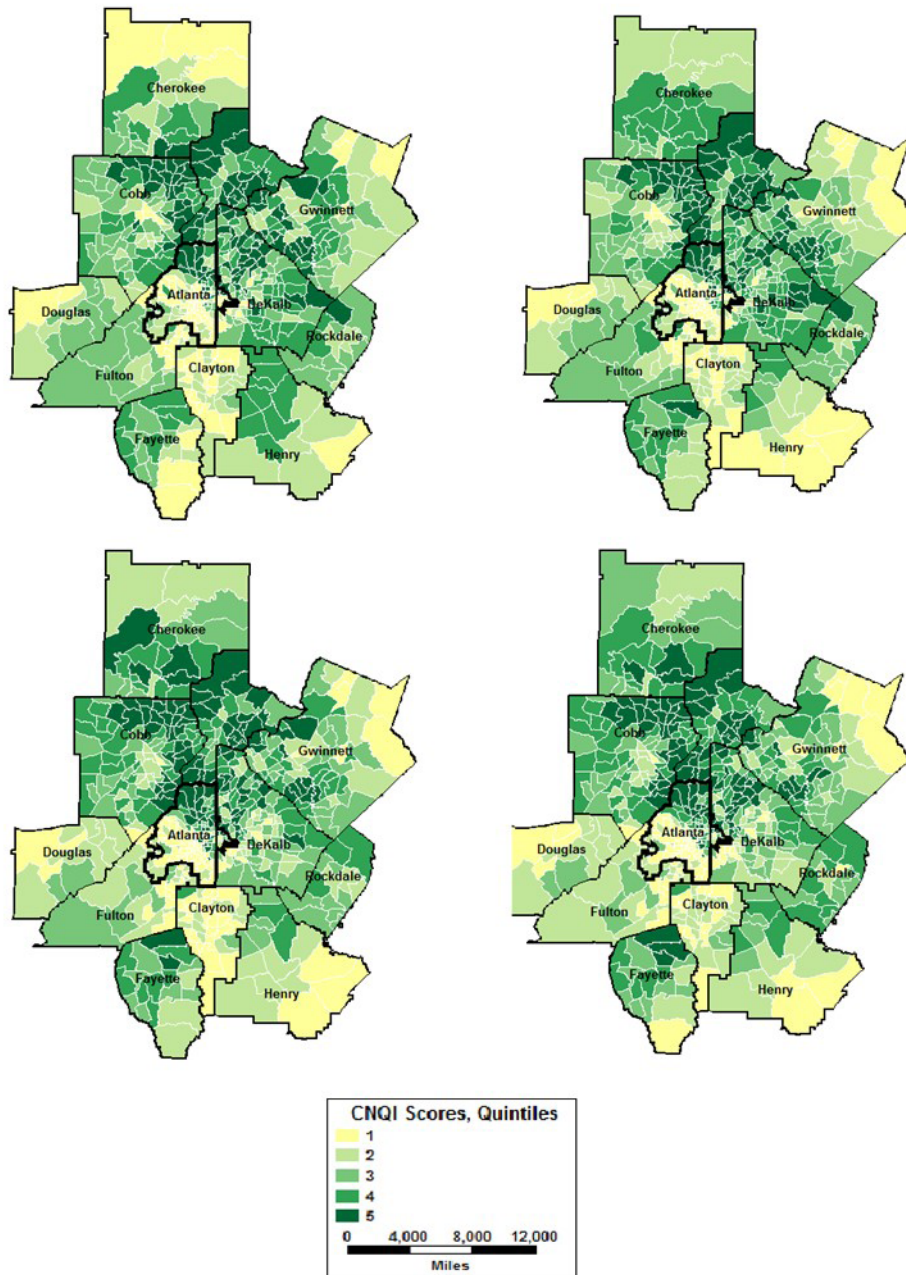
East Cobb County, North DeKalb, North Fulton, and in Gwinnett Counties. By contrast, the lowest quality neighborhoods are located in the southern half of the City of Atlanta and Clayton County. Similarly, neighborhoods with scores in the second quintile of scores are found in Rockdale, Henry, and Douglass Counties. Minimal changes appear to have taken place between 2000 and 2004.

In 2007, the majority of the highest quality neighborhoods were located in East Cobb County, North DeKalb, North Fulton, and in Gwinnett Counties. The lowest quality neighborhoods were located in the southern half of the City of Atlanta and Clayton County. Similarly, neighborhoods with scores in the second quintile of scores were found in Rockdale, Henry, and Douglass Counties. Additionally, neighborhoods in South DeKalb County appeared to have seen decreases in CNQI scores compared to 2000 and 2004 whereas Cherokee County had more census tracts in the highest quintile of scores. In 2009, the majority of the highest quality neighborhoods were located in East Cobb County, North DeKalb, North Fulton, and in Gwinnett Counties. Contrastingly, the lowest quality neighborhoods were located in the southern half of the City of Atlanta and in Clayton and South Fulton Counties. Similarly, neighborhoods with scores in the second quintile of scores were found in Rockdale, Henry, South DeKalb, and Douglass Counties. Compared to earlier years, a more salient north-south divide appeared. Tracts south of the 1-20 corridor generally seemed to be in the bottom two quintiles whereas those north appeared to be in the highest two quintiles.

1) Suburban versus Urban

This next section addresses the key questions of this study: Does a neighborhood's urban or suburban characteristic influence neighborhood quality? Moreover, do the numbers of vouchers and the proportion of voucher occupied households within each neighborhood influence this relationship? To test this hypothesis, I classified the census tracts that contained

Figure 3: Quintiles of Composite Neighborhood Quality Index Scores, 2000, 2004, 2007 & 2009



at least one voucher as either urban or suburban, based on their location inside or outside of the formal boundaries of the City of Atlanta. A one-directional unpaired t-test for difference of means finds that a neighborhood's urban or suburban location has a statistically significant impact on its quality. Specifically, the scores of suburban tracts were significantly higher than urban tracts, as the $p=0.00$ for $H_a=\text{suburb-city}>0$ for all years. The results of these tests are presented in Table 6 below.

While these findings are interesting themselves, I then evaluated the relationship between the number and proportion of voucher-occupied households and a neighborhood's quality. To do so, I ranked all the census tracts that contain vouchers into three groups: low, medium, and high numbers of vouchers for each of the four years. Then, I performed a series of unpaired difference of means t-tests for each of the terciles. The results are displayed in Table 7. Suburban census tracts have statistically significant higher scores than urban census tracts in 2000, 2004, and 2009, at all three levels of voucher quantities. In 2007, only suburban tracts with the lowest terciles of vouchers had higher scores.

These unpaired t-tests were also performed with an independent variable of the proportion of vouchers per total occupied households in each census tract. As with the previous set of t-tests, the proportion of voucher values were ranked and divided into terciles: low, medium, and high proportions of vouchers. The results are displayed in Table 8. Suburban census tracts had higher scores than urban census tracts in 2000 and 2009 at all three levels of voucher quantities at the $\alpha=0.05$ significance level. At low proportions of vouchers, there was no significant difference in suburban and urban census tract scores in 2004. In 2007, urban tracts with the highest terciles of vouchers had higher scores than their urban counterparts at the $\alpha=0.05$ level of significance, which followed the pattern set by the previous tests.

2) Suburban versus Urban Neighborhoods, Longitudinal Analysis.

To account for missing data, I removed the indicators that were not available for all four years, namely school quality and the number of foreclosure filings and recalculated the index. Then, I compared the two indices using Pearson Correlation Coefficients. The high coefficients, ranging from $r=0.922$ to $r=0.9799$, depicted in Table 9, illustrate that removing the two

measures does not make a large impact on the overall composite score. This recalculated index lends itself for longitudinal analysis. Although suburban tracts consistently have higher scores, the disparity between urban and suburban tracts stays relatively constant over the decade. From 2007 to 2009, the quality of suburban and urban tracts grows a little more similar. The small sample size of four years precludes long-term conclusions.

3) Relationship between Proportion of Voucher-Occupied Households and Neighborhood Quality

This study now attempts to forge connections between the two established patterns: the location of vouchers and the quality of neighborhoods with voucher-occupied households. To do so, I use multivariate linear regressions to predict the effect of a neighborhood's CNQI score on its proportion of voucher-occupied households. Then, I observe the relationship while controlling for a neighborhood's total population, racial minority population, and its suburban or urban location. The outputs of the regressions are provided in Table 10. Model 1 denotes the regression with no controls, model two includes controls for a tract's minority population and total population, and model three includes an interaction term for a tract's urban or suburban location.

When excluding all controls, CNQI score has a significant and negative effect on the proportion of voucher-occupied households in a neighborhood in all four years (See Model 1). In 2000, as the CNQI score increases by one point, the proportion of voucher-occupied households decreases by 0.0036 percent. The proportion of voucher-occupied households decreases by 0.002 percent in 2004, by 0.00054 percent in 2007, and by 0.0034 percent in 2009. When I added the controls for race and population in model two, the effect of the CNQI index retained its significant influence on the proportion of voucher-occupied households. The small coefficients suggest a small effect, but these findings are still interesting. Additionally, this model finds that as a tract's minority population increases, the proportion of voucher-occupied households increases. The influence of a tract's population is only significant in 2000 and 2004.

Model three adds an interaction term between the CNQI score and a tract's urban or suburban classification. A tract's urban classification has a significant effect only in 2004, 2007, and 2009 on its proportion of voucher-occupied households. In 2004 and 2009,

Table 6: Difference of Means between Urban and Suburban Tracts

	Observations	City Means	Observations	Suburb Means	Abs. Value of Diff	p-values
2000	92	-4.954	325	0.288	3.62	0.00*
2004	117	-1.273	446	2.53	1.257	0.00*
2007	83	-1.347	393	-0.451	0.896	0.077**
2009	106	-3.279	394	0.272	0.272	0.00*

*Significant at $p < 0.05$; **Significant at $\alpha < 0.10$

Table 7: Difference of Means between Suburban and Urban Tracts by Number of Vouchers

		Observations	City	Observations	Suburbs	p-values
2000	Low Vouchers (1-6)	22	-3.55	121	1.57	0.00*
	Medium Vouchers (7-30)	18	-7.16	121	.180	0.00*
	High Vouchers (37-569)	52	-4.79	84	-1.43	0.00*
2004	Low Vouchers (1-6)	22	1.789	121	3.74	0.0832**
	Medium Vouchers (7-30)	18	-4.90	121	1.38	0.00*
	High Vouchers (37-569)	53	-4.17	82	-.43	0.00*
2007	Low Vouchers (1-8)	34	-1.88	130	1.85	0.0001*
	Medium Vouchers (9-35)	34	-1.65	125	-0.54	0.1389
	High Vouchers (36-298)	15	0.55	138	-2.55	0.9935
2009	Low Vouchers (1-11)	26	1.05	145	3.30	0.0042*
	Medium Vouchers (12-52)	28	-2.29	137	-0.63	0.0273*
	High Vouchers (53-679)	52	-5.98	112	-2.55	0.00*

*Significant at $p < 0.05$; **Significant at $p < 0.10$

Table 8: Difference of Means between Suburban and Urban Tracts by Proportion of Vouchers

		N	City Means	N	Suburb Means	Suburb>city
2000	Low	14	-1.75	126	1.57	0.0005*
	Medium	17	-5.04	122	0.35	0.000*
	High	61	-5.66	77	-1.91	0.00*
2004	Low	14	3.79	126	3.86	0.4838
	Medium	17	-0.98	122	1.39	0.0428*
	High	62	-4.94	77	-1.00	0.00*
2007	Low	35	0.86	124	0.49	0.7548
	Medium	37	-0.17	121	-0.31	0.603
	High	11	0.68	147	-0.90	0.9816
2009	Low	29	1.38	167	2.77	0.058**
	Medium	33	-3.47	166	-0.84	0.002*
	High	44	-6.21	166	-3.73	0.0001*

*Significant at $p = 0.05$; **Significant at $p = 0.10$

	2000	0.9662
	2004	0.92222
	2007	0.9472
	2009	0.9799

Table 10: Multivariate Regressions between CNQI and Proportion of Voucher-Occupied Households

Variable	Model 1 (no controls)	Model 2 (Without interaction)	Model 3 (with interaction)
<i>2000</i>			
CNQI	-0.0036* (0.00036)	-0.0016* (0.0004)	-0.0015* (.000527)
Minority		0.00045* (0.00005)	4.49e-04* (4.7e-05)
Total Population		-0.000106* (0.000407)	-1.005e-06* (4.23e-07)
CNQI * City			-0.0001 (0.0007)
Constant	0.020* (0.0015)	0.0038 (0.004)	0.0038* (0.0042)
R ²	0.19	0.36	0.36
<i>2004</i>			
CNQI	-0.002* (0.00019)	-0.00075* (0.000201)	-0.0005* (0.0002)
Minority		0.00096* (0.000039)	0.00052* (0.0004)
Total Population		0.00049* (0.00000036)	-5.82e-07* (3.00e-07)
CNQI * City			-0.00026* (0.00035)
Constant	0.024* (0.0012)	0.002 (0.0035)	0.00055* (0.003)
R ²	0.17	0.392	0.47
<i>2007</i>			
CNQI	-0.0005* (0.0149)	-0.00075* (0.0002)	-0.00063* (0.00028)
Minority		9.60E-07* (3.51E-07)	0.0002* (3.32e-05)
Total Population		0.00049 (0.000039)	-1.50e-07 (1.90e-07)
CNQI * City			-0.0016* (0.00043)
Constant	0.015* (0.0008)	0.002* (0.0035)	0.0079* (0.0025)
R ²	0.02	0.064	0.076
<i>2009</i>			
CNQI	-0.0034* (0.00046)	-0.0010514* (0.0002)	-0.001* (0.0008)
Minority		1.43E-07* (1.91E-07)	0.000745* (9.79e-05)
Total Population		0.0001557 (0.00003)	1.25e-06* (4.69e-07)
CNQI * City			0.002* (0.0009)
Constant	0.027* (0.002)	0.007* (0.0025)	-0.02* (0.007)
R ²	0.098	0.198	0.204

Standard errors in parentheses; * $p < .05$; ** $p < .01$

Table 11: Summary Statistics: Opportunity Index

	Mean	Std Dev.	Min	Max	Number of Observations
2000	0.00548	2.593	-8.047	8.738	564
2004	1.543	4.539	-8.938	16.97	564
2007	1.94x10 ⁻⁸	2.986	-9.11	7.565	564
2009	1.89x 10 ⁻⁸	2.695	-8.876	8.571	564

this effect is negative, whereas in 2007, the effect is positive. These findings do not lend to any clear patterns. A tract’s suburban classification has a negative relationship with the proportion of voucher-occupied households. For suburban tracts, as the CNQI score increases by one point, the proportion of voucher-occupied households decreases by 0.15, 0.05, 0.063, and 0.1 percentage points in 2000, 2004, 2007, and 2009 respectively. Similarly, the proportion of vouchers very minimally decreases as a neighborhood’s population increases by one person in 2000 and 2004. In 2009, the proportion of voucher-occupied households marginally increases with total population. Interestingly, the proportion of voucher-occupied households marginally increases as the percentage of a neighborhood’s minority population increases; the coefficients for the minority and total population variables are extremely small.

Opportunity Structure

While suburban neighborhoods are theoretically categorized as being collectively of higher quality than urban neighborhoods, research by Murphy⁵² and Hanlon⁵³ challenge the popular image of American suburbia. They argue that many suburbs lack the social structure that helps encourage socioeconomic mobility for low-income families. This study contributes to this emerging body of literature by creating an index for opportunity structures at the census tract level. This second index contains a subset of the indicators

in the CNQI which more directly relate to providing opportunities for socioeconomic mobility. These indicators are found in Table 11. I constructed this index using an identical method to the CNQI construction.

Ho (3): Urban neighborhoods provide weaker opportunity structures than suburban neighborhoods within the Atlanta metropolitan area.

First, I looked for differences in mean opportunity index scores between all urban and suburban tracts using one-directional t-tests. Then, I performed one-directional t-tests when controlling for the number of vouchers. To do so, I ranked the number of vouchers in each census tract and sorted the census tracts into low, medium, or high numbers of vouchers. Then, I control for the proportion of voucher-occupied households in each tract. The proportion of vouchers equals the number of vouchers reported divided by the total number of occupied housing units in the census tract. I ranked census tracts into low, medium, or high proportions of vouchers. I then used one-directional t-tests to statistically compare the mean neighborhood quality scores between suburban and urban census tracts. In order to falsify the null hypothesis, urban neighborhoods must have higher opportunity scores than suburban neighborhoods.

Results

Table 11 provides the descriptive statistics for the Opportunity Index.

In 2000, the mean score is 0.00548, followed by 1.543, 1.94 x 10-8, and 1.89 x 10-8 and -0.4805 in the

Table 12: Difference of Means between Urban and Suburban Opportunity Scores

	Observations	City Means	Observations	Suburb Means	p-values
2000	92	0.815	325	-0.575	0.00*
2004	117	3.6837	446	1.263	0.00*
2007	83	0.376	393	-0.282	0.023*
2009	106	0.71	394	-0.184	0.0007*

*p<0.05

**Table 13: Difference of Means Between Urban and Suburban Tracts Opportunity Index:
Sorted by Number of Vouchers**

		N (City)	City	Observations	N (Suburb)	p-values
2000	Low	22	1.784	121	-0.449	0.0005*
	Medium	18	-0.302	121	-0.649	0.269
	High	52	0.791	84	-0.650	0.00*
2004	Low	22	7.12	121	2.01	0.00*
	Medium	18	1.94	121	1.257	0.1087
	High	53	1.416	82	-0.6496	0.063**
2007	Low	33	0.587	130	1.35	0.9304
	Medium	35	-0.36	125	-0.754	0.275
	High	15	-0.281	138	-1.518	0.0216*
2009	Low	26	1.8915	145	0.693	0.0278*
	Medium	28	0.87	137	-0.843	0.0018*
	High	52	-0.089	112	-0.593	0.0626**

*Significant at p<0.05; **Significant at p<0.10

**Table 14: Difference of Means Between Urban and Suburban Tracts Opportunity Index
Sorted by Proportion of Voucher-Occupied Households**

		N (city)	City	N (Suburbs)	Suburbs	p-values
2000	Low	14	2.169	126	-0.417	0.001*
	Medium	17	0.909	122	-0.679	0.0035*
	High	61	0.477	77	-0.699	0.00*
2004	Low	14	7.710	126	1.867	0.0001*
	Medium	17	4.974	122	0.356	0.0001*
	High	62	1.199	77	0.1514	0.0464*
2007	Low	35	0.627	124	1.054	0.214
	Medium	11	0.0699	147	-1.544	0.0159*
	High	15	-0.281	138	-1.518	0.0216*
2009	Low	18	1.724	149	0.589	0.0621
	Medium	25	1.633	142	-0.907	0.00*
	High	63	-0.050	103	-0.391	0.133

significant at p<0.05

subsequent years. The standard deviations around the means range between 2.593 in 2000 and 4.539 in 2004. The following maps depict the distribution of opportunity index scores in the 10-county ARC region. For these maps, I ranked the scores into terciles, as indicated by the legends. In Figure 4, areas within the City of Atlanta, as well as in North Fulton, DeKalb, and East Cobb counties rank the highest on this scale. Outer ring suburbs as well as all of the southern counties uniformly rank in the lowest tercile of scores. In 2004, tracts in Henry, Rockdale, and Gwinnett Counties all witnessed increases in their opportunity scores, while Clayton County tracts remained in the lowest terciles (Figure 4). The 2007 and 2009 data depict minimal changes 2000, except for improvements in western segments of Gwinnett counties. Clayton County still remained entirely in the lower tercile while northern counties remained in the highest. Thus, these data suggest that places like Clayton County have the weakest opportunity structures.

Urban versus Suburban Opportunity Scores. I perform a series of unpaired one-directional *t*-tests for each of the years. The results are displayed in Table 12. Urban census tracts have statistically significant higher scores than their suburban counterparts in all four years at the 0.05 significance level. These results suggest that urban census tracts within the City of Atlanta have stronger opportunity structures than those in the suburbs when taken as aggregate wholes.

I ranked all of the scores into three groups of low, medium, and high numbers of vouchers for each of the four years. I performed a series of unpaired one-directional *t*-tests for each of the years. The results are displayed in Table 13. Urban census tracts had statistically significant higher scores than their suburban counterparts in 2000, 2007, and 2009, at the lowest terciles of voucher frequency. Additionally, urban tract scores were consistently and significantly higher than suburban tract scores in every year for the top tercile of vouchers. Urban tracts in the second tercile only had higher scores than suburban tracts in 2009. However in 2004, suburban tracts with the fewest vouchers had higher scores than their urban counterparts. I then sort the census tracts into terciles on the basis of the proportion of voucher-occupied households. These results are displayed in Table 14. When using a one-directional test, urban tracts had significantly higher opportunity scores than suburban tracts at the $\alpha=0.05$ significance level for every tercile in 2000 and

2004. Urban tracts did score better in 2007 and 2009, but only for higher proportions of voucher-occupied households. Moreover, the *p*-values are larger, indicating a convergence in the later years.

DISCUSSION

The Location of Vouchers

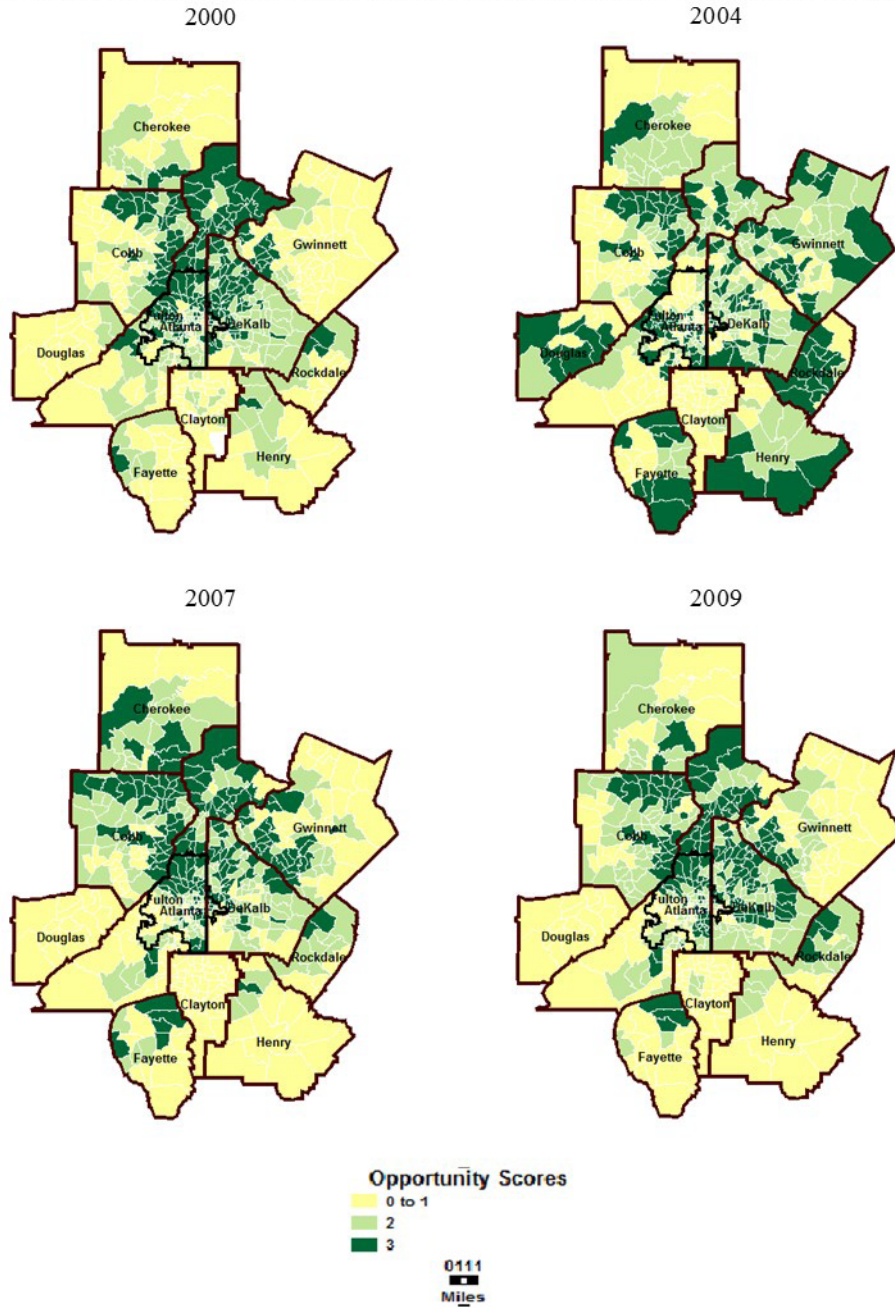
The Housing Choice Voucher program has two primary geographic goals: to decentralize poverty and to deconcentrate urban poverty. This study's findings show that, aligning with Garr and Kneebone's⁴ results,⁵⁵ vouchers are slowly decentralizing poverty in Atlanta. Therefore, these vouchers meet the first goal of housing mobility programs. Suburban tracts in Atlanta consistently contained a higher share of vouchers between 2000 and 2009, and their share grew through the nine-year period. More current data would most likely show further decentralization. However, vouchers appear to be re-concentrating into specific portions of the metropolitan area. While Massey and Douglass's index of dissimilarity provides a rough measure of geographic unevenness, it fails to provide insight into the actual locations of concentration. The maps of the proportion of voucher-occupied households show new concentrations of vouchers in Clayton, South Fulton, and Henry counties (refer to Figure 2).

Juxtaposed against the promise of decentralization is this issue of re-concentration of vouchers in Atlanta's suburbs. Based on the findings, the neighborhoods where vouchers are re-concentrating are most likely to have weaker opportunity structures and offer less accessibility to necessary public and social services. Such a rise in voucher concentration in opportunity-poor suburbs presents new challenges for metropolitan-level planners and policy makers. These findings beg the question of why voucher-recipient families are segregating into these locations. Further research on the locations of voucher-eligible rental units may provide clarity on these patterns.

Neighborhood Quality

Beyond simply location of voucher recipient families, there lies the question of what quality of neighborhoods in vouchers tend to be located. This study's findings suggest an inverse relationship between a neighborhood's quality and its proportion of housing choice vouchers. That is, as the quality of the neighborhood improves, the proportion of vouch-

Figure 4: Opportunity Scores for 10-County ARC Region in 2000, 2004, 2007 & 2009



er-occupied households decreases. The majority of vouchers are found in the lowest quality of neighborhoods. Additionally, these findings suggest that, in 2004 and 2007, a neighborhood's urban location and CNQI score interact and lead to lower proportions of voucher-occupied households. In addition, a direct relationship exists between a neighborhood's minority population and vouchers, as depicted by Models 2 and 3 in Table 10. Further research may be needed to fully hash out this relationship. Residential location is mostly driven by the availability of rental homes. Thus, a coordinated effort between PHAs, state policies, real estate developers, and participants in the voucher program should be undertaken to map out existing properties and introduce incentives for the development of eligible renter properties in high quality neighborhoods. Additionally, even if rental properties are available in high quality neighborhoods both in the city and the suburbs, participants in the HCV program may not know about them or be willing to move to them. Neighborhood preferences are complex and are at least partially driven by a neighborhood's racial composition. Thus, as I will mention later, interviews with current residents can better inform the barriers participants face and give them more agency.

The minimal improvements in neighborhood quality between 2000 and 2009 are promising, but the limited scope of this study cannot determine whether this improvement is statistically significant. Much of this change derives from improvements in school quality, job growth, and the introduction of social service providers and medical centers. However, these improvements are not ubiquitously experienced throughout the metropolitan area. Significant variation still exists between the quality of neighborhoods in the southern portions within the city of Atlanta and in the peripheral counties. As depicted by Figures 3, all suburbs are not created equal. These maps provide strong evidence against the antiquated illustrations of utopic suburbia. Suburban tracts, particularly south of the I-20 corridor in South Fulton, Clayton, and Henry Counties have comparable CNQI scores to the poorest neighborhoods in the City of Atlanta. Regardless, when comparing suburban and urban neighborhoods as collective groups, suburban tracts came out on top in all four years. The same results appear when controlling for the proportion of vouchers in each neighborhood. Why, then are many suburbs still superior in overall neighborhood quality?

A further look into the data show that the characteristics that researchers traditionally use to measure neighborhood quality, such as the number of rental properties, foreclosures, and poverty rates, are driving the urban-suburban disparity in CNQI scores. Urban tracts score significantly lower for these indicators. The growing convergence in suburban and urban CNQI scores over time may be substantively marginal. Perhaps the ten-year time frame of this study and the error associated with the ACS data mask some degree of the longitudinal variations. A wider period of analysis would most likely illuminate more change in suburban and urban quality. From the perspective of low-income housing policy-makers, the suburbanization of vouchers in Atlanta enables some voucher recipients to reside in high quality neighborhoods.

Opportunity Structure

Despite these relative successes, these findings expose new sets of concerns for Atlanta-area PHAs and related policy-makers and social service delivery agencies. When looking specifically at indicators that measure the opportunity structures within neighborhoods, suburban neighborhoods do worse than neighborhoods within the City of Atlanta on the whole. Non-profits and social service providers are almost entirely absent from certain portions of the metropolitan area including in Clayton, Henry, and Rockdale counties. Public transportation is scarce in all suburban counties except for Cobb, Gwinnett, and Clayton counties. The data also reveal that southern suburban districts had relatively low percentages of students meeting the standards on the 4th grade Criteria-Referenced Competency Tests. For these and other reasons, opportunity structures are weak in many of the new nodes of voucher-occupied households. Still, some communities like in East Cobb and North Fulton counties appear to be exceptions to this statement. The relative superiority of these types of areas may be explained more by old-wealth and exclusionary land use policies.⁵⁶ Moreover, these areas are still predominantly white.

The geographic distribution of the opportunity scores appear to find a positive relationship between a suburban tract's proximity to the City of Atlanta and its opportunity structure.⁵⁷ Still, further research is necessary to make more solid conclusions. High-performing schools, relatively plentiful non-profit providers, new HRSA medical centers, and suburban

transit lines provide aid to the northern and eastern suburbs closest to the City of Atlanta. However, as distance increases, a gaping divide in public and social service provisions emerges. These patterns are logical due to historical patterns of urbanization and metropolitan change. As indicated in the brief review of Atlanta written above, for much of their modern history, Clayton, Fayette, Cobb, and Gwinnett counties were historically white, wealthy, and enjoyed low poverty rates. While some of these areas met the demands placed on them by rising poverty and racial change, others did not. Clayton county serves as the prime example of the latter, as its experiences with white flight were the most extreme. In 2009, the data indicated the difference between urban and suburban opportunity scores was not significant. While more recent data is necessary to observe trends, the 2009 data provide a semblance of good news.

Conclusions: Finding Solutions

When discussing how to move forward, a discussion of urban-suburban politics is relevant and necessary. While this study has special focus on Atlanta, one can safely assume similar conditions in other metropolitan areas; for this reason, this section is more broadly intended. Like in all political environments, sub-metropolitan level municipalities operate in environments of scarce resources. Logan and Schneider write that in many metropolitan areas, “[an] antagonistic relationship [exists] between cities and suburbs” as each competes for resources.⁵⁸ Such antagonism can be further applied to different types of suburbs. As these findings suggest, not all suburbs afford high opportunities and cannot be equated with the highest quality of life. Each municipality has unique and often conflicting interests. Logan and Schneider expand the suburban stratification theory:

[C]ertain characteristics of the political economy of most metropolitan regions- such as zoning codes restricting high density housing in some suburbs, variations across communities in tax rates or services, and institutionalized racial discrimination- are believed to reinforce the status of affluent suburbs while at the other extreme subjecting poor suburbs to further deterioration.⁵⁹

Affluent suburbs in the outer peripheries of metropolitan areas try to keep their higher status; however, by doing so, low-income suburbs typically lose out due to decreasing tax bases and relatively less influential political clout. In her review of suburban municipi-

ties across the nation, Hanlon finds that inner-ring suburbs also typically “lose the battle for investment resources.”⁶⁰ Such inequality precludes effective regional policy interventions. Hanlon goes further to say that “poor suburbs have it even worse [than] central cities. They are more invisible and have less political clout” partly because many policy makers still prescribe to the myth of suburban opportunity and partly because federal policies primarily label cities as being high-need.⁶¹ For example, two of the largest federal aid programs, the Community Development Block Grant (CDBG) program and HOPE VI, do not provide funds to most suburban municipalities. The former only gives to primary cities within metropolitan areas with at least 50,000 people and urban cities with greater than 200,000 people. The latter program only provides funds if the municipality has public housing. Even the use of indices for measuring neighborhood quality is still mostly restricted to urban scholarship. Thus, policy solutions need to account for the political and social realities facing metropolitan areas.

I cannot close this paper without emphasizing the issue of race. My models suggest that voucher-occupied households tend to be located in neighborhoods with higher populations of minorities. This finding suggests that the HCV program may be contributing, even if at a small scale, to new forms of racial segregation in the suburbs. Thus, I believe that actions need to be taken to intentionally reverse this trend. To do so, PHAs and related program administrators need to be aware of this trend and also work with community residents and voucher participants to make rental housing units more available outside of minority-majority neighborhoods.

Proposed Policy Recommendations

Suburbia can no longer exist in a “policy blind spot”; as the distinction between the opportunities and quality of life afforded by urban and suburban locations is becoming fuzzy.⁶² Large segments of Atlanta’s suburban counties appear quantitatively like the historically distressed segments of the City of Atlanta. Considering that suburban neighborhoods with the highest numbers and proportions of housing choice vouchers are those that rank amongst the lowest quality neighborhoods, the metropolitan area’s PHAs need to be cognizant of these new patterns. My findings suggest three tasks for PHAs: to work towards opening up renter-eligible housing in high-opportunity neigh-

borhoods, to take further steps to assist voucher recipients move to higher opportunity suburban neighborhoods and to increase opportunities in distressed neighborhoods, both suburban and urban. PHAs can spend more resources in assisting families move to these higher opportunity communities by expanding rental search assistance programs and by more clearly conveying information about the quality of neighborhoods within metropolitan areas (Hamilton and Atkins 2008). To accomplish these tasks, PHAs should work with other agencies, governmental actors, and non-profits to establish a more encompassing social infrastructure. Popkin et al (2012) suggest that PHAs should provide more comprehensive supportive services for voucher recipients, to provide mobility counseling so residents make more informed choices of neighborhood selection, and to use financial incentives to make more affordable housing available in higher income neighborhoods.

I suggest three avenues for improving opportunities for families in the housing choice voucher program: (1) state incentives for affordable housing and (2) tax-base sharing and (3) federal funding. As mentioned above, individual municipalities each have individual interests. Power lies primarily in affluent suburban municipalities, therefore it is unlikely that any state-mandated directives can be imposed successfully in terms of inclusionary zoning or equitable development. Rather, Hamilton and Atkins⁶³ suggest that state governments can financially incentivize high-opportunity suburban municipalities and real estate developers to maintain high-quality stocks of rental housing set aside for the HCV program. Currently, opportunity-rich suburban neighborhoods have little to no intrinsic motivation to invite affordable housing development or rental properties. Secondly, in terms of expanding the social infrastructure in urban and opportunity-poor neighborhoods, Orfield⁶⁴ advocates for tax-base sharing amongst municipalities. Currently, as supported by the suburban stratification theory discussed above, low-income suburbs like those in Clayton County, South Cobb County, and DeKalb County have small tax-bases due to population decline and high proportions of low-income populations. They also have the highest need for public and social services such as infrastructure, non-profits, and better schools as supported by the findings of this study. Tax-base sharing between municipalities would enable suburbs to pool money and take a regional ap-

proach to transportation, education, and social service allocation. However, tax-base sharing and regional coalitions of municipalities can be counteractive to the interests of many municipalities. Additionally, such an approach may not be able to overcome the prevalent ideology of “NIMBY-ism” that suburban populations have historically been known to embody in Atlanta. Norris states, “it is simply not in the interests of local jurisdictions to give away tax advantage. Similarly, local governments are not inclined to support proposals for such things as regional tax base sharing because nearly everyone sees them as a zero sum game.”⁶⁵

The third policy option builds upon Hillary Clinton’s Suburban Core Opportunity Restoration Act (SCORE) which sought to fuel federal aid into distressed suburbs. Hanlon⁶⁶ argues that while this act was not passed, it symbolizes progress and a realization of the troubles of many distressed suburbs. Although the decline of inner-ring suburbs is a metropolitan-level problem, cities all around the nation are facing the same challenges as Atlanta- making suburban decline a national problem. Reliance on federal aid may mitigate the key problem that lies inherent in regional approaches to urban and suburban redevelopment.

FURTHER RESEARCH AND LIMITATIONS

Limitations

The story of the Housing Choice Voucher program in Atlanta is far from complete. The following limitations exist for this study:

Limited Timeframe: Because the data only represent four years, I cannot make statistical inferences about trends. A long-term analysis would expose more variation over time.

Missing or Imprecise Data: This study would have benefitted from a greater amount of publicly available geographic data regarding Housing Choice Vouchers. Particularly, underreporting by Atlanta-area PHAs in 2007 preclude my ability to make decisive judgments about time. Moreover, I used several less-than-ideal measures for the CNQI and opportunity indices for foreclosures, educational quality, and access to transportation. These measures cannot fully explain these attributes of neighborhood quality. My indicators were chosen both based on precedent and for their relative ease of collection. Future studies can include more precise and rigorous indicators.

Simplification of Suburban Diversity: This study oversimplifies many attributes of suburban neighborhoods for the sake of time and ease. Characteristics such as proximity to Atlanta, population growth, age of municipal incorporation, and political infrastructures are all-important factors that need to be explored.

Further Study

Missing from this study's analysis are the experiences of public housing agencies and families. Employees at PHAs may be able to better explain the impact of the housing crash and difficulties in implementation. Additionally, interviews with families would further inform measures on neighborhood quality, opportunity structures, and on daily experiences. Such qualitative data would add richness, accuracy, and sensitivity to this study's methodology.

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