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Shiva Kooragayala April 11, 2013

The Consequences of Rising Suburban Poverty on the Housing Choice Voucher Program: A Study of Atlanta, Georgia

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An abstract of
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Abstract
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This study investigates the consequences of suburban poverty on meeting two primary goals of the HUD-administered housing choice voucher (HCV) program: to deconcentrate inner-city poverty and to provide greater access to opportunities that enable socioeconomic mobility to low-income populations in Atlanta, Georgia between 2000 and 2009. 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 notion of suburban opportunity. This project identifies and measures the quality of the neighborhoods in which voucher-occupied households are located; it also compares the quality of suburban and urban neighborhoods given the historical absence of social infrastructures in the former. To accomplish these tasks, I construct two indices to measure neighborhood quality and access to opportunity structures at the census tract geographic level. This study has three major findings. First, the data confirm that vouchers are decentralizing away from the City of Atlanta, but find a re-segregation in low-quality and opportunity poor suburbs between 2000 and 2009. Secondly, despite suburban neighborhoods' collective supremacy in neighborhood quality relative to urban neighborhoods, their opportunity structures are relatively weak. And finally, as a neighborhood's quality improves, regardless of its racial makeup and urban or suburban location, its proportion of voucher-occupied households decreases. 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 indistinct. This study's findings suggest that Atlanta's public housing authorities need to work towards opening up renter-eligible housing in high-opportunity neighborhoods, to take further steps to assist voucher recipients in moving to opportunity-rich suburban neighborhoods and to improve opportunities structures in distressed neighborhoods, particularly in suburban neighborhoods with new concentrations of HCVs. Future policy objectives should encourage collaboration between multiple municipalities and should explore the options of federal and state aid for suburban municipalities.

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Introduction

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. The 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 (American Community Survey 2007-2011).[1] Moreover, 84.1 percent of Atlanta's poorest residents live in neighborhoods of extreme poverty. From the middle of the 20th 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. Extensive 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 (Massey and Denton 1993; Wilson 2006).

Urban scholars are essentially 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 (Briggs et. al. 2005, Jargowsky 1997). 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

[1] Federal Poverty Line in 2012 is $23,050 for a family of four

influenced by concentrated poverty. Thus, neighborhood quality has been theorized to being amongst the strongest indicators of socioeconomic mobility.

Since the 1980's, 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. Thereby, the quality of the destination neighborhoods to which HCV families move within the metropolitan areas is essential to measuring the success of the program. In ideal conditions, participants in the voucher program would move to high-opportunity neighborhoods; however, empirical studies question the program's success and achievements. Most recently, a Brookings Institution study found a "suburbanization" of these HCVs (Covington, Freeman, and Stoll 2011). 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, limited accessibility to public transportation, and increasingly segregated schools (Scott and Roth 2010; Feller and Cunningham 2009; Orfield 2012). 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 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 asking 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, are the conditions in these destination neighborhoods in concurrence with the goals of the HCV program? I answer these questions by examining data from 2000 to 2009 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 emerging concerns resulting from rising suburban poverty over the past decade.

Concentrated Inner-City Poverty

William Julius Wilson (1967) and Xavier de Souza Briggs (2005) 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 th that characteristics such as access to jobs, exposure to and perception of crime, the quality of public and social services and schools, poverty, and

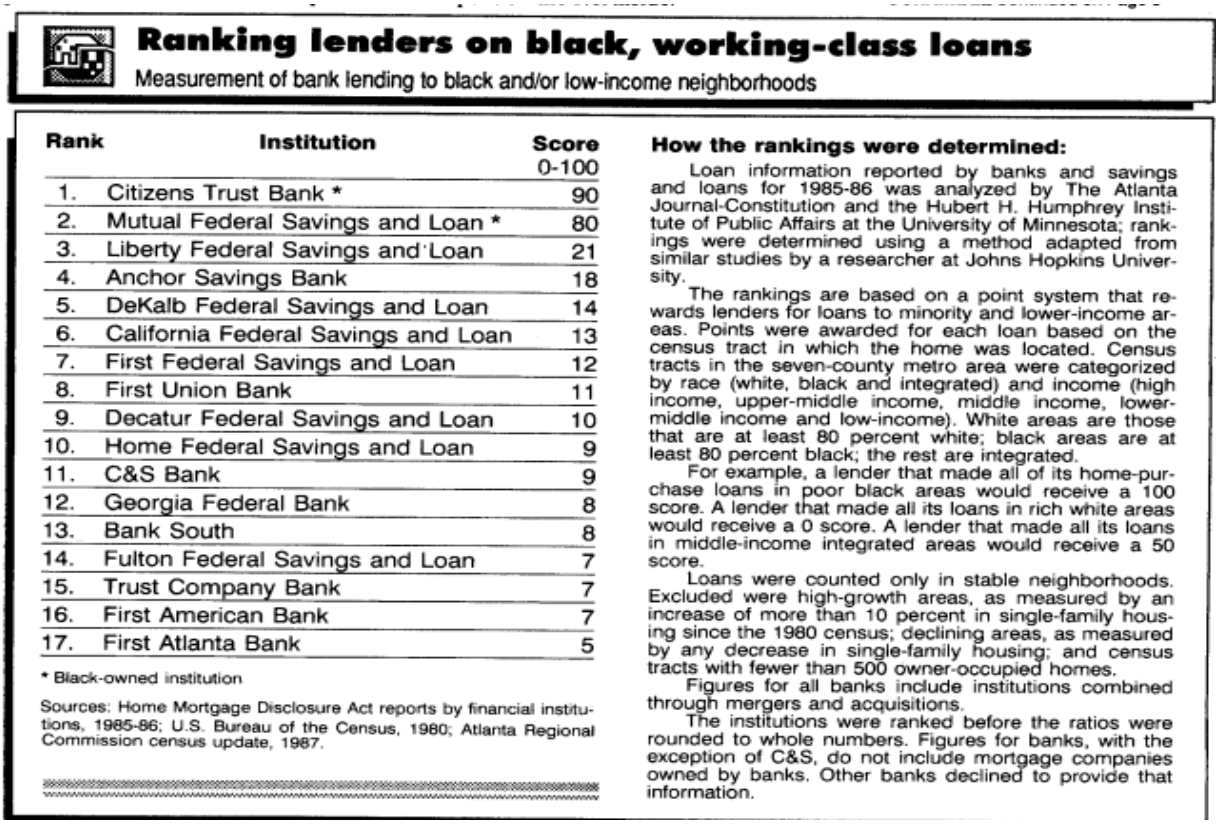
connections to positive social networks are determined at least partially by residential location (Galvez 2010).

A mixture of historical social, economic, and political forces throughout the 20th century have resulted in a concentration of low-income and minority residents in America's central cities (Wilson 2009; Sugrue 1996; Massey and Denton 1993; and Briggs 2005).[2] Drawing upon Jargowsky's definition, concentrated poverty refers to census tracts in which at least 40 percent of the population lives below the federal poverty line (Jargowsky 1997).[3] Neighborhoods with concentrated poverty tend to have higher crime rates, few social service providers, high rates of obesity, few options for healthy lifestyles, and segregated and struggling schools (Briggs 2005; Berube et. al. 2006; Jargowsky 1997; Wilson 2009). Additionally, these neighborhoods tend to lack "bridging" social capital and therefore contribute to social isolation (Putnam 2001). 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 such economic segregation. Wilson urges policy-makers to "consider how explicit racial structural forces directly contribute to inequality and concentrated poverty" (2009, 27). While the creation of poor and black urban cores is complex and multifaceted, primary structural forces include the practice of redlining, white flight, suburban resistance to black populations, and public housing.

[2] In this paper, I will use the terms "inner-city," "central city," and "urban core" synonymously.
[3] Federal Poverty line in 2012 for a household of 4 is $23,050 (HHS 2012)

Redlining. 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. The FHA began underwriting mortgages in 1934 to increase homeownership, particularly in the suburbs. This exclusive

Figure 1: "Ranking lenders on black, working-class loans"



Ranking lenders on black, working-class loans

Measurement of bank lending to black and/or low-income neighborhoods

Rank	Institution	Score 0-100
1.	Citizens Trust Bank *	90
2.	Mutual Federal Savings and Loan *	80
3.	Liberty Federal Savings and Loan	21
4.	Anchor Savings Bank	18
5.	DeKalb Federal Savings and Loan	14
6.	California Federal Savings and Loan	13
7.	First Federal Savings and Loan	12
8.	First Union Bank	11
9.	Decatur Federal Savings and Loan	10
10.	Home Federal Savings and Loan	9
11.	C&S Bank	9
12.	Georgia Federal Bank	8
13.	Bank South	8
14.	Fulton Federal Savings and Loan	7
15.	Trust Company Bank	7
16.	First American Bank	7
17.	First Atlanta Bank	5

* Black-owned institution

Sources: Home Mortgage Disclosure Act reports by financial institutions, 1985-86; U.S. Bureau of the Census, 1980; Atlanta Regional Commission census update, 1987.

How the rankings were determined:

Loan information reported by banks and savings and loans for 1985-86 was analyzed by The Atlanta Journal-Constitution and the Hubert H. Humphrey Institute of Public Affairs at the University of Minnesota; rankings were determined using a method adapted from similar studies by a researcher at Johns Hopkins University.

The rankings are based on a point system that rewards lenders for loans to minority and lower-income areas. Points were awarded for each loan based on the census tract in which the home was located. Census tracts in the seven-county metro area were categorized by race (white, black and integrated) and income (high income, upper-middle income, middle income, lower-middle income and low-income). White areas are those that are at least 80 percent white; black areas are at least 80 percent black; the rest are integrated.

For example, a lender that made all of its home-purchase loans in poor black areas would receive a 100 score. A lender that made all its loans in rich white areas would receive a 0 score. A lender that made all its loans in middle-income integrated areas would receive a 50 score.

Loans were counted only in stable neighborhoods. Excluded were high-growth areas, as measured by an increase of more than 10 percent in single-family housing since the 1980 census; declining areas, as measured by any decrease in single-family housing; and census tracts with fewer than 500 owner-occupied homes.

Figures for all banks include institutions combined through mergers and acquisitions.

The institutions were ranked before the ratios were rounded to whole numbers. Figures for banks, with the exception of C&S, do not include mortgage companies owned by banks. Other banks declined to provide that information.

Source: Dedman, Bill (1998). "Atlanta blacks losing in home loans scramble." From the "Color of Money;" Atlanta Journal-Constitution. Accessed from: www.powerofreporting.com

injection of mortgage capital helped white families relocate to the suburbs and contributed to the migratory pattern of white flight. However, inner-city blacks were excluded from this very federal aid. Policy makers, politicians, and real estate agencies rationalized this practice on the basis that investments in black neighborhoods would lead to inevitable economic losses (Wilson 2009). The Housing Act of 1968 outlawed these discriminatory selling practices, but later studies

exposed continued implicit forms of the practice. For example, the Pulitzer-winning investigative series, "The Color of Money" commissioned by the Atlanta-Journal Constitution, found evidence of implicit redlining in Atlanta well into the 1980's. Through his extensive research, Bill Dedman writes, "whites receive five times as many home loans from Atlanta's banks and savings and loans as blacks of the same income" (Dedman 1998). Leaders of several lending institutions rejected the newspaper's claims, as they claimed that no explicit evidence of redlining existed in the city. As indicated by Figure 1, among the city's largest banks and lending and savings institutions, only the two black-owned banks tended to lend to black neighborhoods.

White Flight and Suburban Resistance. 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- away from the "problems" of the cities. White flight was in part fueled by federal aid to white families who wanted to move to the suburbs. Places like Levittown, New York and Cobb County, Georgia were characterized by having good schools, low crime, and were branded as the epitomes of the "American Dream." Part of this narrative often included a notion that that these places would be havens separate from the black cities. For example, Kruse writes that suburban leaders in the northern Atlanta suburb of Sandy Springs defended their community with the following statements: "we will never agree to coming into Atlanta" and "we will build up a city separate from Atlanta and your Negroes and forbid any Negroes to buy, or own, or live within our limits" (2005, 248). While perhaps an extreme example, these sentiments are not an isolated case. 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 (2006). Moreover, the appeal of suburbia had more to do with "good schools" and low-crime, implying that the

desegregation of inner-city schools was diminishing educational quality. Thomas Sugrue argues that the "visibility of residential segregation reinforced stereotypes of inner-city pathology and suburban meritocracy" (Lassiter 2006, 9).

Suburban communities defended themselves from the perils of cities by forming covenants and organizations to prevent the introduction of black families. As Kruse argues, neighborhood organizations such as the West End Cooperative Corporation in the West End of Atlanta formed restrictive covenants and initiated fundraising campaigns to purchase homes from black families (Kruse 2005, 55). Racial segregation in Atlanta continues to transcend economic lines, as numerous wealthy black suburbs exist south of the City of Atlanta. Schill and Watcher (1995), Wilson (2009), and Kraus (2004) add that tensions between local governments played a central role in concentrating poverty. Specifically, Kraus (2004) finds that suburban municipalities fiercely resisted the construction of public housing and public transportation; many advocated for infrastructure development that would divide metropolitan areas along economic and racial lines. For example, Robert Moses in New York and Richard Daley in Chicago infamously created physical barriers between black and white neighborhoods that displaced thousands of minority neighborhoods in the name of creating a modern networked freeway infrastructure.

The Federal Interstate Act further rationalized suburbia, for interstates seamlessly connected white suburbs to central business districts (CBD). The development of the interstate highway system was predicated on the notion of universal automobile ownership-- which is still not an empirically valid reality for many low-income Americans. In Atlanta, wealthy and white suburbanites in Cobb and Gwinnett Counties vehemently opposed the extension of the Metropolitan Atlanta Rapid Authority Transit Administration (MARTA) rail lines into the

suburbs. The "metropolitan" in MARTA is essentially a misnomer because its coverage extends only to Fulton and DeKalb counties. At its inception, suburban communities and governments expressed concerns that MARTA would bring in criminals and the problems of "the city" into their neighborhoods. Kruse (2005) writes of bumper stickers in Cobb County that read: "Share Atlanta Crime-Support MARTA" (249).

As low-income and black residents grew more isolated in central cities, loci of employment started to shift to the suburbs. As captured by William Alonso' bid-rent model, the cost of rent decreases proportionately with distance from the CBD; such lower-costs in suburban communities appealed to existing and new firms (Alonso 1984). The 1960s ushered in an era of deindustrialization and labor market restructuring, which has since disproportionately harmed blue collar workers and industrial portions of central cities (Hanlon 2010).

Public Housing. The first generation of federal housing policies also contributed to and exacerbated urban decay (Goetz 2003; Wilson 2010; Briggs 2007). Public housing developments were built as temporary housing relief for displaced families after World War II, but these developments quickly became populated with only the most economically distressed residents after reductions in eligibility standards (Schill and Watcher 1995; Wilson 2009). White families began taking advantage of federal incentives for home ownership and started to move out to the newly developing suburbs. After the Housing Act of 1968, middle-class black families followed suit and began moving outwards, albeit usually to different areas of the metropolitan area. Thus, soon after their introduction into inner-city neighborhoods, traditional high-rise public housing developments, or "the projects," 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. Kruse (2005) and Lassiter (2006) argue that public housing was isolated to central cities partly due to significant suburban resistance to public housing developments; scholars find that some suburban governments even started their own PHAs to circumvent the possibility of federal directives to start projects in their own jurisdictions (Briggs 2005; Massey 1993; Goetz 2003). As this brief review shows, urban decay was and continues to be a product of many intertwined factors. Nevertheless, as the century neared its end, policies began to change in recognition of these realities.

Poverty Deconcentration

In the 1960's, the Department of Housing and Urban Development's (HUD) policy objectives began to reflect the crucial link between place and opportunity in the 1960's (Hays 2012). From the 1930's to the 1970's, the Federal Housing Authority homeownership assistance program, government support for racially restrictive covenants, and entrenchment of public housing projects all facilitated the concentration of poverty in inner-cities (Goetz 2003). The Fair Housing Act of 1968 was a marked move in a new direction, as the act forbade racial discrimination in housing. The federal government shifted its attention to deconcentrating inner-city poverty and desegregating metropolitan areas (Hays 2012; Goetz 2003). In 1968, the President's Commission on Urban Disorders recommended a termination of all new public housing construction due to their poor conditions and their contribution to the concentration of inner-city poverty. In 1993, President Clinton's Secretary of HUD, Henry Cisneros, claimed that 'highly concentrated minority poverty [is] urban America's toughest challenge' (Goetz 2003, 43). HUD's programs initially began to focus on increasing mobility; examples of such programs include the Gautreaux Project and Moving to Opportunity (MTO) Program (Hays 2012; Goetz 2005; Briggs 2005; Popkin et al 2004).

The Gautreaux Project resulted from the 1966 Supreme Court case entitled Gautreaux v. Harris in which the Supreme Court ruled that the Chicago Housing Authority (CHA) unlawfully built Chicago's public housing developments in areas with high concentrations of low-income and minority populations. This ruling prompted the CHA to intentionally move residents from its public housing developments to wealthier and more integrated communities. Rubinowitz and Rosenbaum (2002) found that over 1,500 families moved to 115 suburbs as a result of the case, and they moved to predominantly middle and high-income white neighborhoods. Scholars have tracked the efficacy of this program with both administrative data and survey data. Rosenbaum and Rubinowitz (2002) and Rosenbaum, DeLuca, and Tuck (2005) find that families who participated in this project generally fared positively, as they moved to safer neighborhoods with more access to appropriate jobs and good schooling. Rosenbaum, DeLuca, and Tuck (2005) engaged in intensive interviews with participating families and found that some families initially struggled to adapt to certain "white" suburban norms. Through their qualitative evidence, they emphasize that increases in social and cultural capital, rather than in material improvements, were the primary successes of the Gautreaux Project.

Goering (2005) and Rosenbaum and Rubinowitz (2002) argue that HUD began the "Moving to Opportunity for Fair Housing Demonstration" (MTO) in 1993 that took place in New York City, Chicago, Los Angeles, Boston, and Baltimore partly due to the successes of the Gautreax Program. MTO served as a social experiment and placed participating families into three categories: families in the experimental group received Section 8 vouchers to relocate to census tracts with less than 10 percent poverty, those in the Section 8 group received vouchers to move anywhere within the relevant metropolitan area, and the control group received no Section 8 vouchers, thereby limiting them to traditional public housing. Section 8 vouchers gave families

access to private housing markets with federal housing assistance. Unlike the Gautreax program, MTO expected participating families to move wealthier neighborhoods but not necessarily to those that were more racially integrated. Assessments of the MTO experiment by Goering (2005), Sanbonmatsu et. al. (2006), and Sanbonmatsu (2011), use a diverse array of qualitative and quantitative measures and find no large improvements in employment rates or incomes in the experimental groups. Sanbonmatsu et. al. (2006), through a combination of interviews and test score data, find minimal improvements in educational achievement four years after relocation for families in the experimental group. Nevertheless, they find improvements in perceptions of crime, lower obesity rates, and improvements in overall neighborhood environment for participating families. Thus, these projects were beneficial because they validated the incorporation of more large-scale efforts to deconcentrate inner-city poverty.

Based on the improvements in neighborhood quality resulting from these two programs, poverty de-concentration has become a primary goal in HUD's largest housing programs today: the HOPE VI Program and the Housing Choice Vouchers Program (Hays 2012; Goetz 2003; Goetz 2004; Popkin et al 2004). The HOPE VI program initially intended to revitalize distressed public housing after decades of deterioration. HUD's focus on dispersing the highly concentrated poverty found in public housing developments came subsequently (Hays 2012). The sites were redeveloped into smaller, mixed income housing units because HUD revoked its one-for-one policy that required the construction of a new unit of public housing for every unit demolished. Thus, a lower number of subsidized housing units are rebuilt in HOPE VI. Public housing authorities (PHA) rely greatly on tenant-based programs to meet the remaining demand for assisted housing. 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 than in traditional public housing (Galvez 2010; Goetz 2004; Kingsley et al 2003). This program provides low-income families the option of moving away from segregated and poor inner-city communities.

The Housing Choice Voucher Program: History and Policies

Housing vouchers, known formally as housing choice vouchers, were first introduced to HUD's policy toolbox of the HUD 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 was the primary problem for poor residents, not their poor conditions (Hays 2012). The administration's primary goals were to both cut the costs of assisted housing and to decrease governmental involvement in the execution of assisted housing interventions. Vouchers appeared to fit both of these requirements. Vouchers enable low-income residents the ability to rent private market homes. [4] 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 (Hays 2012). 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" (Goetz 2004, 50). 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 (2012) identifies its four key elements:

[4] Low-income here refers to those earning less than 50% of the area median income

(1) "A primary reliance on tenant-based assistance programs

(2) Increased reliance on local community development corporations and related 501(c)3 organizations

(3) Emphasis on increasing low-income home ownership

(4) Integration of other social features" (Hays 2012, 245)

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 this latter element was favored by those on the right because they saw an integrated approach to social services as the path to self-sufficiency. In the long-run, self-sufficiency would decrease the costs of poverty to the everyday taxpayer and would reduce poverty itself. While Democrats agree about these long-term goals, they argue that this outlook is far too individualistic and minimizes the structural barriers to socioeconomic mobility. Nevertheless, this dual emphasis on people and place-based intervention has become the prevailing ideology.

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" (HUD 2012). Additionally, HUD states that it seeks to identify low-poverty neighborhoods, to recruit landlords in these neighborhoods, to encourage families to move away from high-poverty and segregated neighborhoods, and to connect families to agencies that provide relocation counseling (HUD 2001). At more local level, the Atlanta Housing Authority writes as its goals:

> "Atlanta Housing Authority established and may amend enhanced local standards ("AHA Local Inspection Standards") periodically to ensure that assisted units offer Participants quality housing in healthy communities. Factors such as levels of concentrated poverty, neighborhood crime, proximity to good neighborhood schools, access to public transportation, and access to retail businesses, among other factors, will be considered. Unit, site, and neighborhood conditions must continue to meet AHA Local Inspection Standards for as long as the assisted unit remains on the Program. It is the goal of the Program to provide opportunities for all Participants to reside in units in neighborhoods that promote and enhance educational and employment goals, good citizenship, and peaceful and cooperative community living … Atlanta Housing Authority's policies regarding AHA Payment Standards and Setting Market Rents support effective strategies for the deconcentration of poverty by providing Participants with meaningful and broader housing opportunities in accessing quality affordable housing." (Atlanta Housing Authority 2012, 16-19)

These goals adhere to HUDs language. As this passage suggests, the goals of the program are broad and extend past simply the provision of physical housing. Slight reforms during George W. Bush's administration further decentralized the program by giving local PHAs more flexibility and autonomy in the execution of their work.

Geography of Housing Choice Vouchers

Because a key imperative of the HCV program is to improve the 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 (Smith et al. 2002; Popkin and Cunningham 2000). Several qualitative studies have been completed to

document the motivations, preferences, barriers, and processes that drive where voucher participants tend to locate. Smith et al. (2002) finds that 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 citied concerns for HCV participants (Smith et al. 2002, Popkin and Cunningham 2000).

Beyond the mere location of vouchers lies the question of the quality of neighborhoods in which voucher-holding families are living. Studies by Goetz (2010), Kingsley et al. (2003), and Devine et al. (2003) 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. (2003) find that 22% of voucher recipients lived in census tracts in which at least 30% of residents live under the poverty line in 2000, and 10% of the voucher recipients live in census tracts with 40 or more percent poverty. Galvez (2010) 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. In their study, Kingsley et al (2003) focus on vouchers given to residents moving from public housing. They find that this group of voucher recipients moves to poorer neighborhoods than the national average. Goetz (2003) 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. 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 HUDs goal to

increase socioeconomic mobility. Additionally, these studies are national in scope and do not focus on Atlanta specifically.

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 (2011) 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 compares the rate of suburbanization between 2000 and 2008. This study found that about half of the HCVs are being used in suburban census tracts nationally- which is higher than the suburban share of vouchers in 2000. Devine et al (2003), whose study predated the Covington, Freeman, and Stoll study, use data from the Multifamily Tenant Characteristics System and find that 58% of voucher recipients reside in central cities, while 42% move to suburban areas. This shift is even more pronounced in western MSAs, although Atlanta, Georgia and Akron, Ohio have the largest shares in suburban voucher recipients. Goetz (2003) focuses specifically on the relocation of public housing tenants and cites that only two percent of the first 3,000 families that were displaced from public housing left central city areas. Generally, these studies indicate a growing presence of voucher recipients in suburban areas.

Suburbia Redefined

Merely the issue of suburban relocation of HCVs is not a troublesome phenomenon in itself. America's suburbs have long been conceptualized as safe havens far from the perils of the inner-city. Suburbs were popularly thought to be relatively wealthy, to offer high quality educational opportunities, and to have low unemployment rates. However, recent data challenge this romantic depiction of American suburbia. Studies by Press (2007), Garr and Kneebone

(2010), and Berube and Frey (2002), the latter two of which are commissioned by the Brookings Institution, indicate significant changes in the metropolitan landscape. An article by Garr and Kneebone (2010), entitled "The Suburbanization of Poverty," 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. While significant variation exists between suburban poverty rates nationally, this study finds a 25 percent growth in suburban poverty nationwide. The increase in suburban poverty is especially pronounced in southern metropolitan areas. New Orleans, Louisiana, for instance, saw the largest increase in its suburban share of its metropolitan poor between 2000-2008. Atlanta in fact has the highest share of its metropolitan low-income residents living in the suburbs: 84.5 percent (Garr and Kneebone 2010).

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 2007, Allard and Roth 2010, Murphy 2010, Garr 2011, Feller, Lauer, and Cunningham 2009). Press (2007), Murphy (2010), and Allard and Roth (2010) write about a general dearth of social service providers in suburban municipalities. Although the federal, state, and local governments give financial support to a wide range of social services, they depend on local non-profits to disseminate this aid in the form of services. Examples of these services range from health clinics, the Supplemental Nutrition Assistance Program (SNAP), and job training centers. These sorts of non-profits are far sparser in the suburbs relative to central cities, due to their historically low demand in the former. Troublingly, Garr (2011) 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. Nevertheless, research on the funding patterns, jurisdictional restrictions,

and related information regarding non-profits is still limited. Additional challenges have been exposed in relation to rising suburban poverty. For example, suburbs lack effective and well-funded public transportation, Press (2007) and Felland, Lauer, and Cunningham (2009) expose gaps in the "health care safety net," and Gary Orfield writes of a re-segregation of suburban schools (2012). Moreover, such suburban schools may not be prepared to meet the needs of urban students.

Murphy (2010) and Hanlon (2010) warn against treating all suburbs as one and the same. Hanlon reviews prominent suburban typologies, and builds a new typology based on housing, employment, race, and income data from the 2000 census (2005, 114). She divides inner-ring suburbs into elite, middle class, vulnerable, and ethnic suburbs. Murphy also employs a unique typology that recognizes variations between suburban areas, and Murphy finds that scholars and policy-makers are beginning to understand the similarities between poor suburbs closest to central business and inner-city neighborhoods. Therefore, non-profits and social service providers in urban and similar suburban neighborhoods enjoy similar funding and resources. However, other suburbs have pockets of deep poverty that go unnoticed by funders. It is these suburbs that especially lack the necessary social and political infrastructure for handling rising poverty. Murphy refers to these suburbs as existing in "policy blind spots" (2010). Moreover, suburbs can differ by their age and distance from the central business district. A metropolitan area's urban form- mono-centric, polycentric, or edgeless- is also essential for the character of the suburban regions (Lang 2003).

Atlanta. The following maps illustrate changes in racial composition and poverty rates in Atlanta between 1970-2010. As depicted by the first map (Figure 2), poverty has decentralized from the City of Atlanta and Fulton County. By 2010, Clayton County's poverty rate rivaled that of

Fulton County. Additionally, poverty is no longer concentrated within or near the City of Atlanta; rather, rather, it appears to be more evenly spread throughout the metropolitan area. Additionally, Atlanta's black population was isolated to neighborhoods inside Fulton County, presumably mostly within the City of Atlanta in 1970 (Figure 3). The passage of the Federal Housing Act of 1968 allows for a gradual decentralization of Atlanta's black population. By 2000, DeKalb County had a larger percentage of African Americans than Fulton County. The change in Clayton County is perhaps the most pronounced because its white population in 1970 was 95 percent; by 2010, Clayton County was only 20 percent white. These maps provide strong evidence for the consequences of white flight. They show that the Atlanta metropolitan area is markedly different than forty years ago. Atlanta's suburbs are no longer all wealthy, white, and identical.

Figure 2: Poverty Rates, 1970-2010. 10-County Atlanta Metropolitan Area

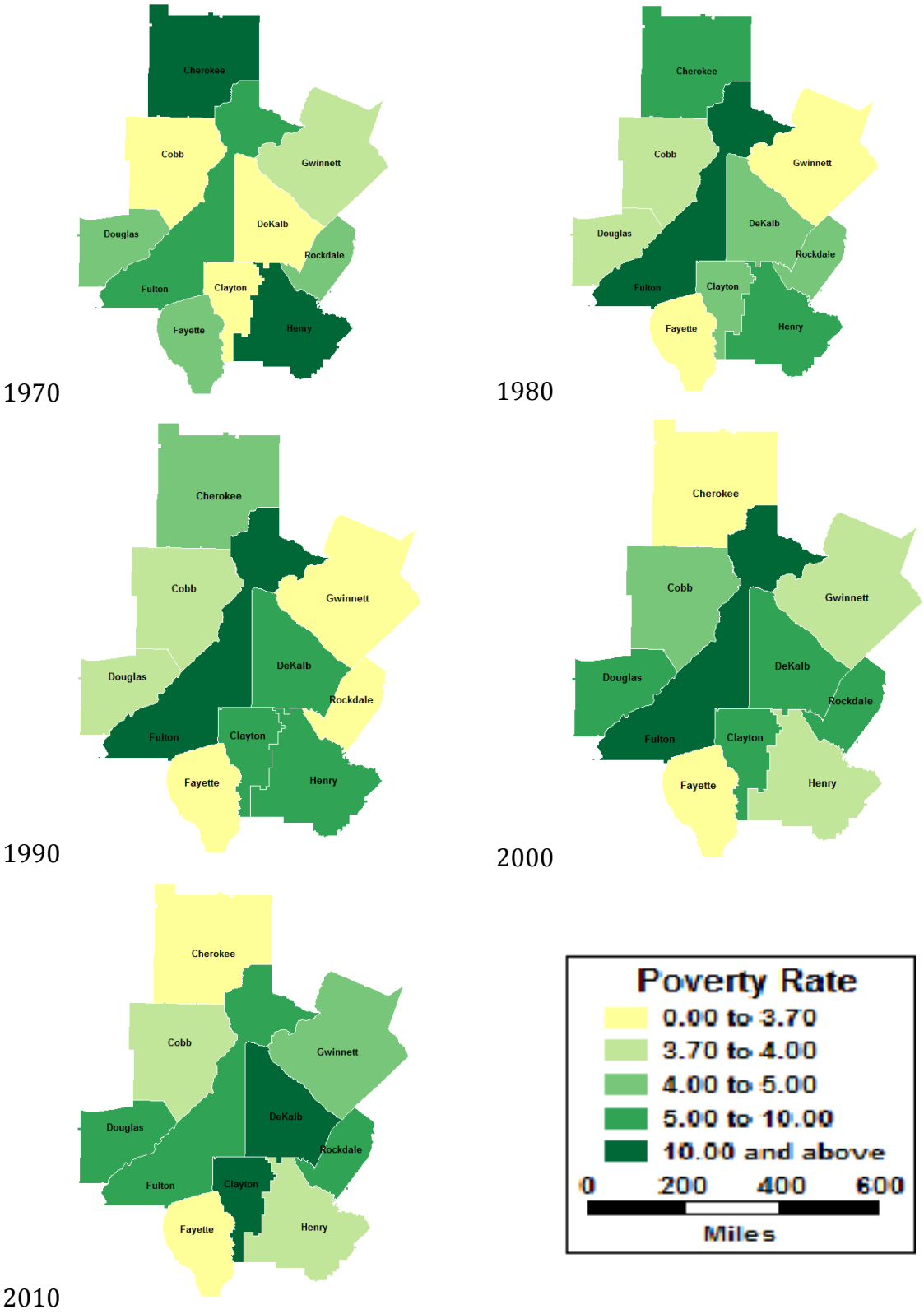
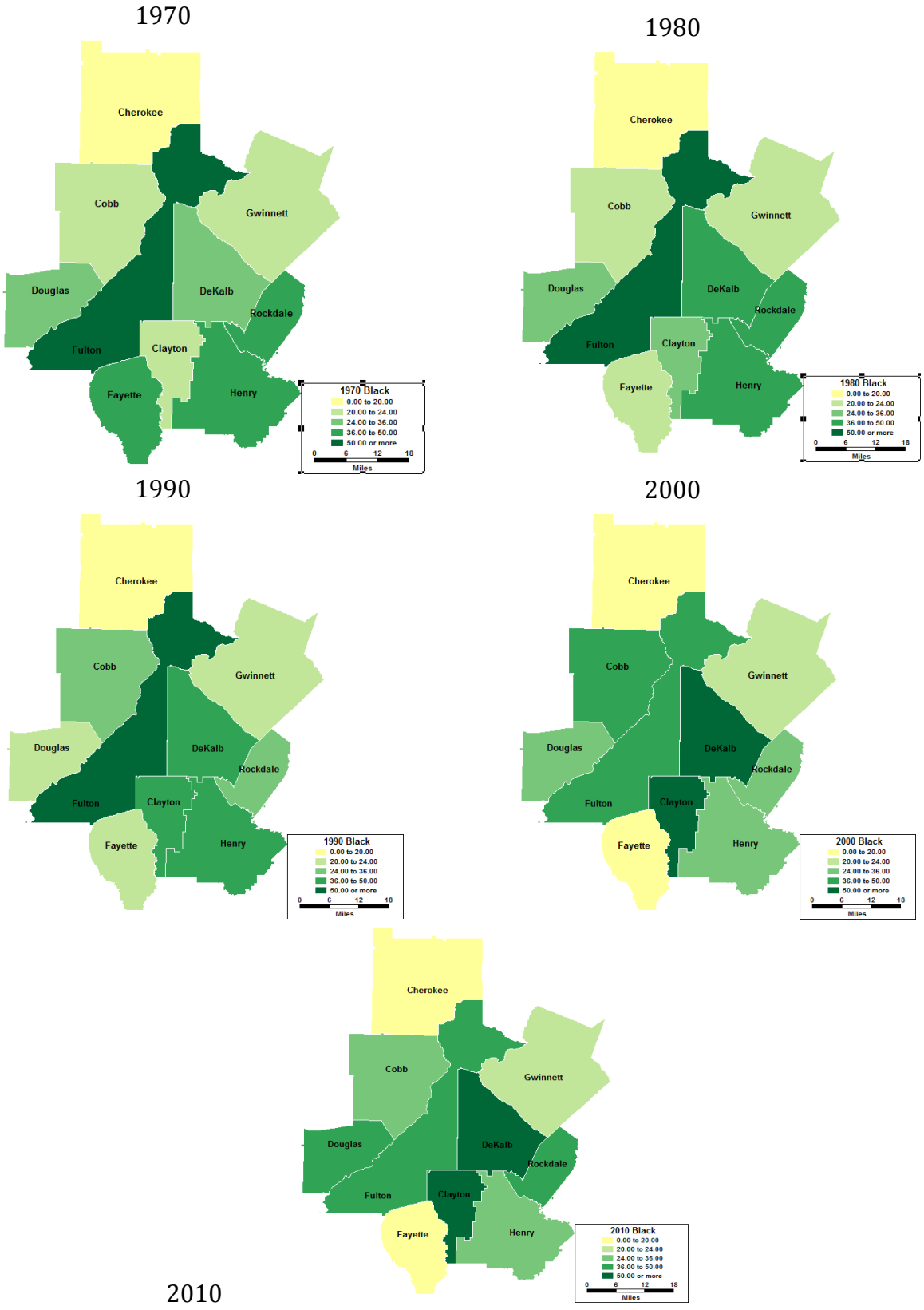


Figure 3: Share of African American Population per Total Population 1970-2010. 10-County Atlanta Metropolitan Area



The Concern

The suburbanization of HCVs is worrisome because the notion of suburban prosperity is being unraveled. 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 (Galvez 2010; Goetz 2010; Kingsley, Johnson, and Pettit 2003; Popkin et al. 2012). Pendall (2000) and Devine et al (2003) find that voucher recipients in the HCV program tend to live in distressed neighborhoods. Popkin et al. (2012) say that PHAs need to be wary of the clustering of voucher recipients in poor neighborhoods.

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 to access more opportunities for socioeconomic mobility. The dual forces of rising suburban 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:

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

Hypotheses

Based on existing literature and recent demographic and geographic trends, two concerns emerge as salient: (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.

H_0 (1): Suburban HCV neighborhoods are not of higher quality than urban HCV neighborhoods regardless of the number and percentage of voucher-occupied households.

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

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

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

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

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

The Data

The following sections explicate this study's methodology in evaluating the above-listed hypotheses. Most generally, this study is a longitudinal, large-N study that utilizes a combination of census and administrative data. This methodology involves two general steps: the first is the acquisition and geocoding of geographical data for the housing choice vouchers and the constituent indicators for the dependent variables. The second step involves constructing indices to measure neighborhood quality and opportunity structures. In this section, I will first identify the data sources, define necessary parameters, and then explain the particular strategies for testing each of the hypotheses.

Independent Variable

Data Source. 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" (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.[5] 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.[6]

Little consensus exists regarding the definition of Atlanta or the Atlanta Metropolitan Area. The Atlanta Metropolitan Area Chamber of Commerce defines the Atlanta metropolitan area as the 28-county region, whereas the Atlanta Regional Commission defines the region by the ten core counties surrounding the City of Atlanta itself. I will rely on the latter definition and specifically address Cherokee, Clayton, Cobb, DeKalb, Douglass, Fayette, Fulton, Gwinnett, Henry, and Rockdale Counties. Despite changes in definitions set by the Office of Management and Budget (OMB), this study intentionally overlooks the variation in the definitions of metropolitan statistical area and core-based statistical area.[7]

Likewise, urban scholars are not decisively fixated on any single definitions what constitutes "urban" and "suburban" within metropolitan areas. According to the OMB, the first city listed in the Metropolitan Statistical Area (MSA) is the primary city, along with any city that

[5]From here onwards, I will use the terms "census tract" and "neighborhood" synonymously and interchangeably.
[6]The PSH dataset is not publicly available between 2001 and 2003 as well as for any year after 2009.
[7]Between 2000 and now, there have been changes in the classifications of metropolitan areas from the MSA to the core-based statistical area (CBSA). The new classification was adopted by the Office of Management and Budget (OMB) in 2003 and now includes "micropolitan" areas that have a urban clusters of at least 10,000 people as well as MSAs which refers to larger population clusters. Thus, the 2000 "Atlanta" refers to the MSA and the 2009 "Atlanta" refers to the CBSA in the Census.

has at least 100,000 residents. The remaining areas in an MSA are suburbs (Garr 2011). In their studies, Covington, Freeman, and Stoll (2011) and Garr (2011) utilize these definitions. In the case of the Atlanta MSA, Atlanta serves as the primary city, thereby grouping the remaining areas as suburbia. This study relies on this distinction. As stated previously in the literature review, 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.

Table 1: Description of Housing Choice Voucher Data				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	13,259.37	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

Dependent Variables

Data Sources. The dependent variables are two indices that measure neighborhood quality and access to opportunities that promote socioeconomic mobility. While this paper has consistently referred to poverty rate as an indicator of neighborhood quality, it is only one way to measure neighborhood quality. In fact, Galvez points out that poverty may not capture the real conditions in neighborhoods (2010). To capture a more meaningful analysis of conditions, Pendall (2000) uses a five-measure index that includes poverty, percent of female-headed households, male employment, educational achievement, and public assistance. Cunningham et al. (2000) use an index that includes crime rates, school achievement, and the number of public assistance receipts. There is great variety in neighborhood indicators, as scholars tend to use sets of indicators that best evaluate their specific research hypotheses.

This study builds upon existing methodologies to construct measures of neighborhood quality that align with HUDs goals for the HCV program. These indices include measures such as: accessibility to public transportation and jobs, the quality of schools, and the existence of healthcare facilities and social service providers (Allard and Roth 2010, Murphy 2010, Gar 2011,

Felland, Lauer, and Cunningham 2009, Orfield and Frankenburg 2012, Popkin et al 2012). These indicators touch at the challenges that may have arisen due to rising suburban poverty, and many have historically been used to measure quality of life. The following section will discuss the various indicators, their conceptual significance, operationalization, and sources of data. Moreover, this section will provide greater detail regarding the computation of the two indices. 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 by work by Dr. Michael Rich and Dr. Moshe Haspel at Emory University (2011).

Table 2: Indicators in the Composite Quality Index

Indicator	*Geographic Level*	*2000*	*2004*	*2007*	*2009*
Poverty Rate	Census Tract	Yes	Yes	Yes	Yes
Educational Quality	Location	Yes	Yes	Yes	No
Foreclosure Filings	Census Tract	No	No	Yes	Yes
Access to Transportation	Location	Yes	Yes	Yes	Yes
Number of Non-profits	Zip Code	Yes	Yes	Yes	Yes
Healthcare Access	Location	Yes	Yes	Yes	Yes
Medically Underserved Areas	Census Tract	Yes	Yes	Yes	Yes
% Of Households on Public Assistance	Census Tract	Yes	Yes	Yes	Yes
Vacancy Rate	Census Tract	Yes	Yes	Yes	Yes
% Of Renter Occupied Households	Census Tract	Yes	Yes	Yes	Yes
Number of Jobs	Zip Code	Yes	Yes	Yes	Yes

Table 3: Indicators in the Opportunity Index

Indicator	*Geographic Level*	*2000*	*2004*	*2007*	*2009*
Educational Quality	Location	Yes	Yes	Yes	No
Access to Transportation	Location	Yes	Yes	Yes	Yes
Number of Non-profits	Zip Code	Yes	Yes	Yes	Yes
Healthcare Access	Location	Yes	Yes	Yes	Yes
Medically Underserved Areas	Census Tract	Yes	Yes	Yes	Yes
Number of Jobs	Zip Code	Yes	Yes	Yes	Yes

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

1) 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 (OMB 2012). For the purpose of this index, I obtained poverty data from the 2000 Decennial Census and the 2005-2009 American Community Survey (ACS). While the Decennial Census is a population survey with minimal error, the ACS contains large error for its data. Unfortunately, the 2010 Decennial Census does not contain data for poverty or for several of the other indicators relevant to this study, thereby requiring the use of the ACS. Poverty rates are calculated at the census tract level and refer to the percentage of families living under the poverty threshold in a particular census tract
2) Educational Quality. I operationalize educational quality through the percentage of students meeting standards on the 4th Grade CRCT, the Georgia state exam, at the school level. To reconcile the geographic discrepancy between census tracts and the individual school location, I use Geographical Information System (GIS) software to tag the nearest school to each census tract. This method preserves content validity considering the high number of elementary schools in the ten-county region. The data originates from the National Longitudinal School-Level State Assessment Database created by the US Department of

Education. This dataset contains school-level data on state testing programs for 90,000 schools and contains data from 2000 to 2007. I obtained school-level data from the Georgia School Report Card, published by the Georgia Governor's Office of Student Achievement, to fill in missing data. 2009 data are not available in the former source.

3) Healthcare Access. I measure healthcare access via two proxy measures: (1) designation as a medically underserved community and (2) proximity to a Health Resources and Services Administration (HRSA) supported "Health Center." The HRSA designates areas that have "too few primary care providers, high infant mortality, high poverty, and/or high elderly populations" as medically underserved areas or populations (HRSA 2013). MUA status is coded as a dummy variable. The second dimension of this concept more explicitly measures access to healthcare. HRSA health centers are responsible for providing quality primary care for traditionally underserved populations, including those who are homeless or live in public housing. The national database contains information regarding the size, tenure, and type of healthcare provider as well as the opening and closing dates. The latter information enables this dataset to be applicable over time. Similar to the school-level data, I used GIS software to tag the closest HRSA health center for each census tract. I measure proximity by calculating the distance from the centroid of each census tract to the closest healthcare provider.[8]

4) 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. I then tagged the

[8] This distance is represented in miles.

closest bus stop to each census tract. This study excludes MARTA rail stations because of its limited coverage.

5) Foreclosures. To account for the number of foreclosures in each neighborhood, I use data compiled by the "Neighborhood Nexus" database. 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. The data were only available for 2007 and 2009. The general scarcity of data on foreclosures most likely reflects the limited public interest in the topic prior to 2007.

6) Access to Social Service Providers. To account for access to social service providers, I follow Murphy's methodology and harvest data from the U.S. Census Bureau Zip Code Business Patterns dataset (2010). This annual dataset contains the number of business establishments in each zip codes for the different industries classified by the North American Industry Classification System (NAICS). Research shows that geographical proximity to social service providers plays a significant role in the utilization of organizational resources in distressed communities, thereby firming the validity of this measure (Allard, Tolman, and Rosen 2003). 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" (Census Business Patters 2010). Examples of organizations falling within this industry code include community action services agencies, family welfare services, and self-help organizations. This dataset's primary drawback is that it only contains organizations that pay formal payroll and leaves out single-employee

institutions. I use GIS capabilities to standardize the zip code-level data to the census tract level. This indicator is coded as the number of social service providers per census tract.

7) Jobs. I use the Census Bureau Zip Code Business Patterns dataset to measure the employment opportunities for each neighborhood. These indices operationalize employment opportunities via the total number of employees after the first quarter for each year. While this measure does not provide insight into job quality and cannot explain who is actually employed, it does indicate where jobs are located. I once again use GIS techniques to tag the closest zip code to the centroids of the census tracts.
8) Public Assistance, Vacancy Rates, Percent of Renters, and Unemployment Rate. 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. Data on these three measures was gathered from the 2000 Decennial Census and the 2005-2009 American Community Survey.

Methodology and Results

This following section explains this study's methodology and results for evaluating each of the hypotheses (Refer to Table 4). For organizational purposes, the empirical section is divided into three parts: the location of housing choice vouchers 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.

Part 1: Location of Vouchers in the 10-County ARC Region

Methods. Although the PSH dataset does not provide locational data for each individual voucher or family for the sake of privacy, it provides geographic information at the census tract level. These data are geocoded for each of the four years. I created maps that depict both the numbers and proportion of voucher-occupied households between 2000-2009. Then, 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 1988). Massey and Denton (1988) 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." (284).

The equation for index of dissimilarity is as follows: $D = \sum_{i=1}^{n} \left[\frac{t_i |p_i - P|}{2TP(1-P)} \right]$. [9]

This index represents the percentage of vouchers that would need to be relocated in the metropolitan area to reach an even distribution of vouchers in the entire 10-county metropolitan area.

Results: Location of Vouchers

1) Suburban versus Urban Location

Since 2000, suburban census tracts have contained more HCVs than those within City of Atlanta, proper (Refer to Table 4). The City of Atlanta contained 6,769 vouchers in 2000 and

[9] t=total occupied units per census tract; p=total number of vouchers per census tract; T=total occupied units in 10-county metropolitan area; P=total number of vouchers in the 10-county metropolitan area

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 vouchers 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% of the metropolitan area's vouchers, and by 2009, they contained 62.49%. More recent data would most likely indicate further growth in this share. Figure 4 graphically depicts the change in metropolitan share of HCVs, and figure 5 excludes the 2007 data.

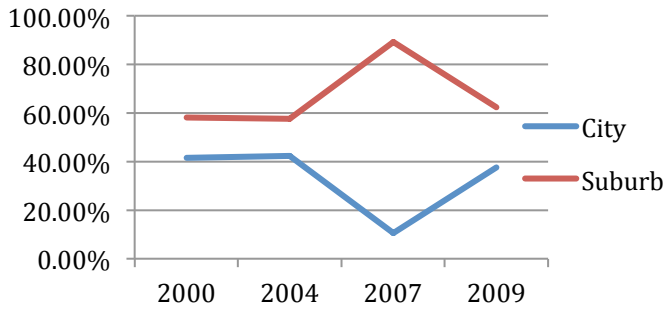
Table 4: Numbers of Vouchers in City and Suburban Census Tracts

	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

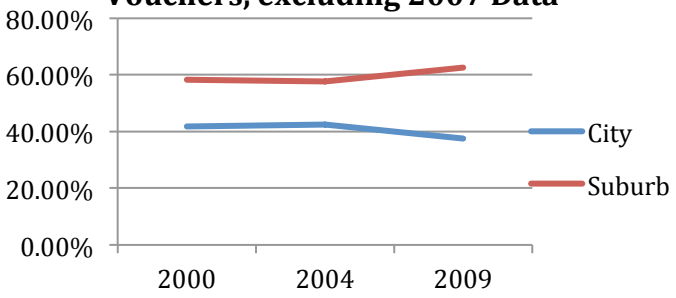
The maps in the following figure, depicted in Figures 6, illustrate the distribution of vouchers in the 10-county metropolitan area by census tract. To highlight change, the counts of HCVs per census tract were ranked and sorted into terciles of low, medium, and high numbers of vouchers. In 2000, the 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, Douglass 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 are most likely due to underreporting and is not an empirically valid pattern. Minimal changes occurred between 2007 and 2009 in terms of the geography 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 of the concentration of HCVs.

Figure 4: Proportion of MSA Vouchers



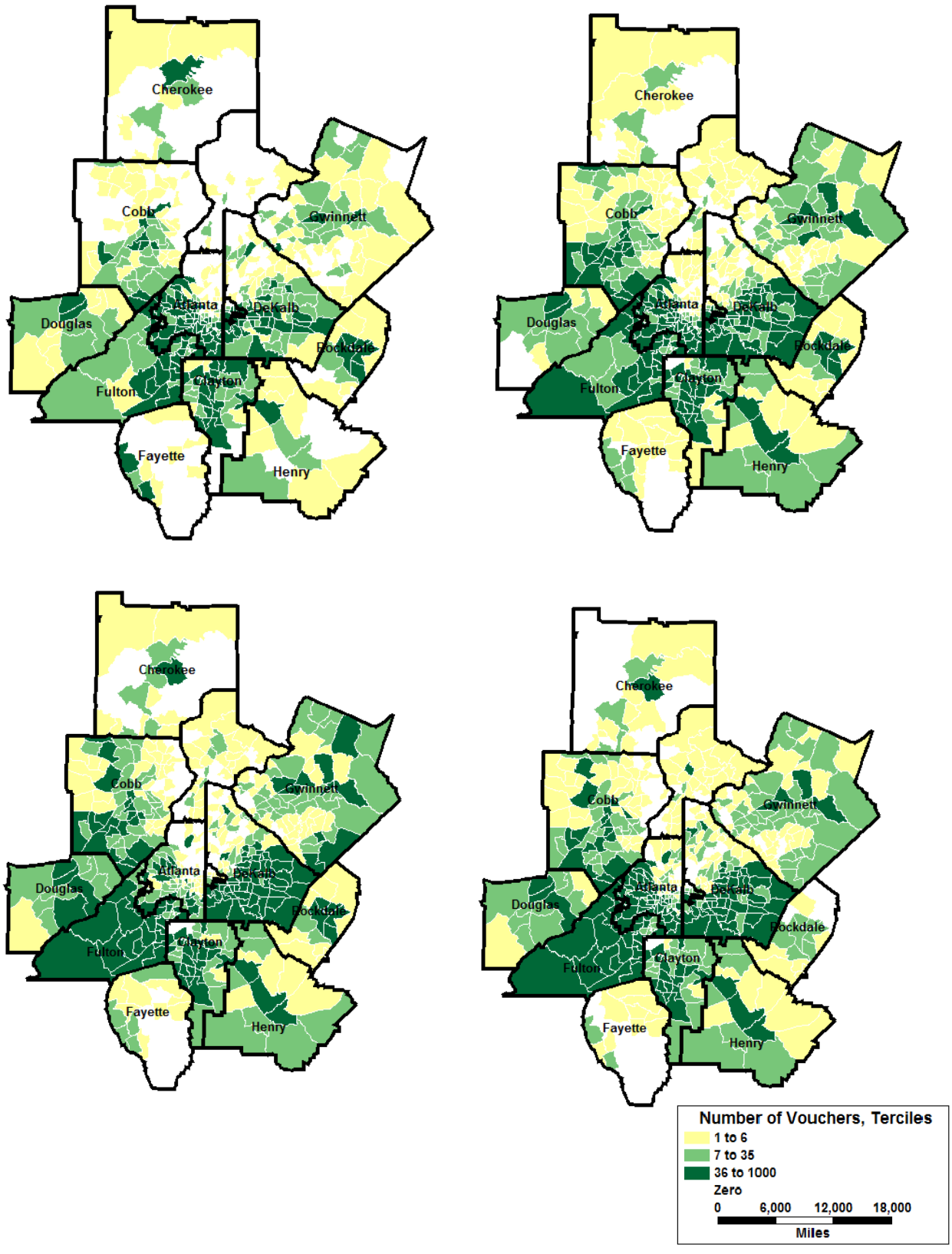
Data Source: Picture of Subsidized Housing 2000, 2004, 2007, 2009; Department of Subsidized Housing

Figure 5: Proportion of MSA Vouchers, excluding 2007 Data



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

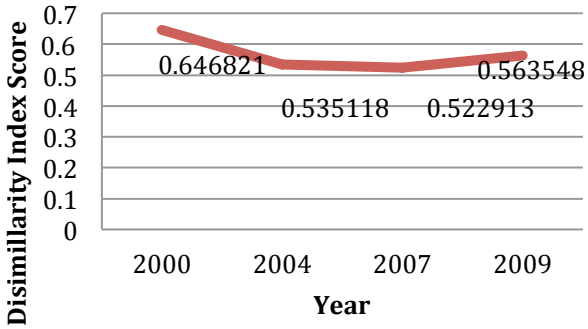
Figure 6: Terciles of Housing Choice Vouchers; 2000, 2004, 2007, 2009



2) Concentration of Vouchers

This study uses the index of dissimilarity to address the issue of the geographic spread of vouchers (Massey and Denton 1988). This index denotes the percentage of vouchers that would have to relocate into other census tracts to reach parity with the total number of occupied households in the ten-county ARC region. In 2000, 64.6 percent of vouchers would have to be relocated to reach parity with the total number of occupied households. This value is 53.5 percent in 2004, 52.3 percent in 2007, and 56.3 percent in 2009 (Refer to Figure 7). 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-concentration of voucher-occupied households in select census tracts.

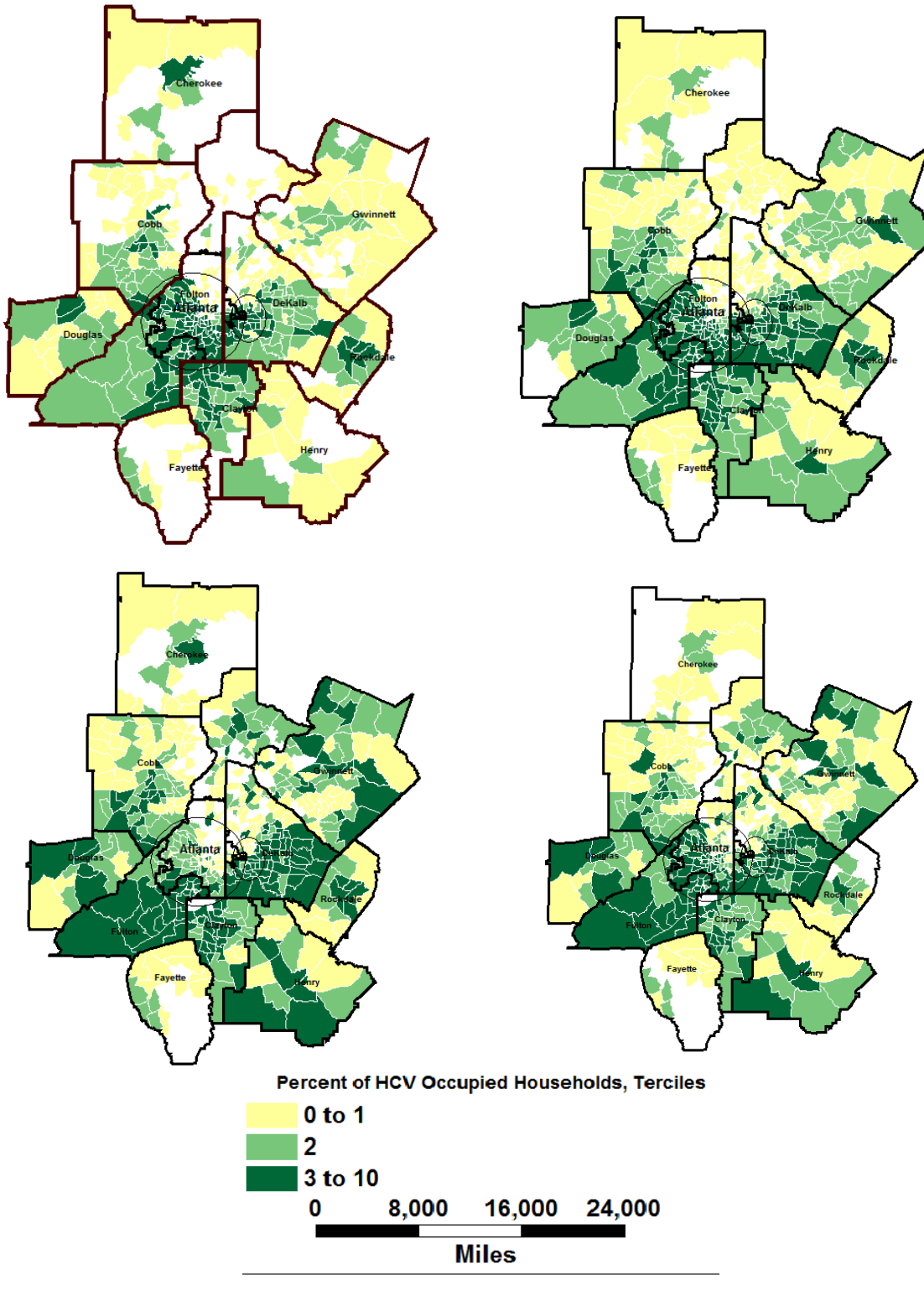
Figure 7: Dissimilarity Index



Data Sources: Picture of Subsidized Housing 2000, 2004, 2007, 2009; 2000 Census; 2005-2009 American Community Survey

To better illustrate where the changes in concentrations of vouchers are occurring, the following maps (Figure 8) depict the proportion of vouchers to occupied households in each census tract. Similar to the previous maps depicting the counts of vouchers, 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 had 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.

Figure 8: Terciles of the Proportion of HCV-Occupied Housing Units; 2000, 2004, 2007, 2009



Part 2: 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 the entire population of census tracts within the 10-county ARC region. The independent variable is the location of each census tract, either urban or suburban. As stated above, urban tracts refer to those fully contained within the boundaries of the City of Atlanta. Contrastingly, the dependent variable for hypotheses one and two is "neighborhood quality," which is measured by the CNQI index.

In constructing the CNQI index, I first standardized the geography of each of the constituent indicators to the census tract level to match the geographic scale of the independent variable. I use GIS mapping techniques to reconcile these geographic discrepancies to tag 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. A succinct tabular form of the hypotheses is provided in Table 5.

Table 5: List of Hypotheses

	Dependent Variable	Independent Variable	Observation
(1)	Neighborhood Quality (CNQI)	Suburban or Urban Location	Census Tract
(2)	Proportion of HCVs	Neighborhood Quality (CNQI)	Census Tract
(3)	Opportunity Structure Score	Suburban or Urban Location	Census Tract

1) Hypothesis 1:

H_o (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. The proportion of vouchers equals the number of vouchers reported divided by the total number of occupied housing units in the 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 between 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:

H_0 (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, which is operationalized by the CNQI index. To falsify the null hypothesis, the proportion of voucher-occupied households must not decrease as the CNQI score increases.

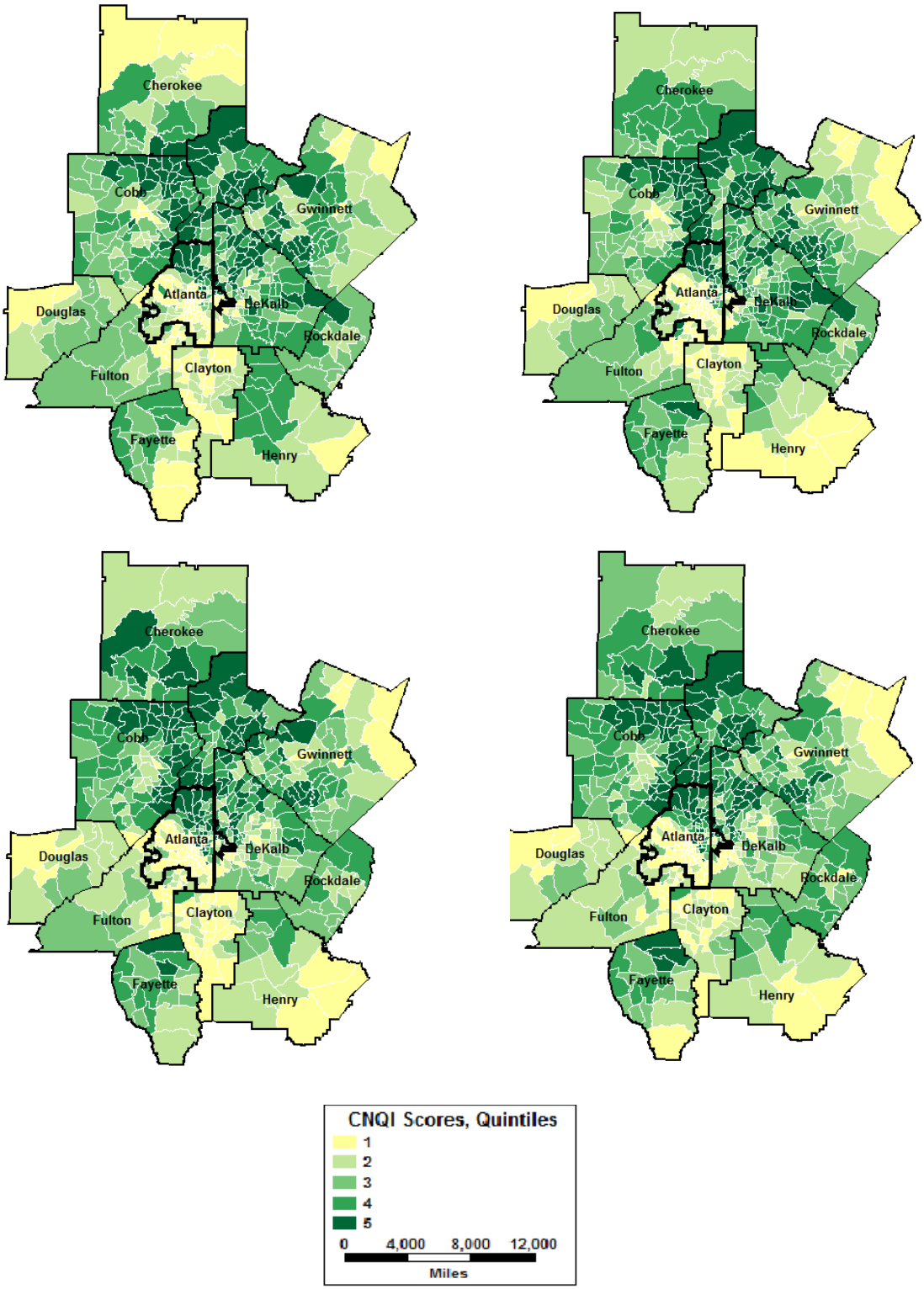
Results. The second question regarding the status of the Housing Choice Voucher program regards the quality of the neighborhoods that voucher-recipients live in. Table 6 lists the summary statistics for the CNQI for census tracts that contain at least one voucher in 2000, 2004, 2007, and 2009, respectively.

Table 6: 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

In 2000, the mean CNQI score is -.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 9).

Figure 9: Quintiles of Composite Neighborhood Quality Index Scores, 2000, 2004, 2007, & 2009



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. Contrastingly, 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. Contrastingly, 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 Neighborhoods

This next section addresses key questions of this study: Does a neighborhood's urban or suburban location 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 sorted the census tracts that contained at least one voucher into two groups: urban and suburban, based on their location inside and 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=suburb-city>0 for all years. The results of these tests are presented in Table 7 below.

Table 7: 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 α<0.10

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 8. 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.

Table 8: 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 $p<0.10$

These unpaired t-tests were also performed with the independent variable of the proportion of vouchers per total occupied households in each census tract. Like 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 9. 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.

Table 9: Difference of Means between Suburban and Urban Tracts by Proportion of Vouchers

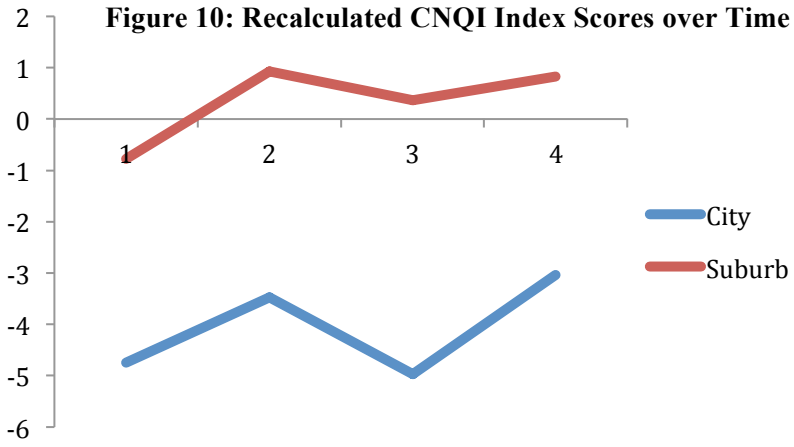
		N	City Means	N	Suburb Means	Suburb>city
2000	Low	14	-1.75	126	1.57	0.0005*
	Medium	17	-5.04	122	0.35	0.000*
	High	61	-5.66	77	-1.91	0.00*
2004	Low	14	3.79	126	3.86	0.4838
	Medium	17	-0.98	122	1.39	0.0428*
	High	62	-4.94	77	-1.00	0.00*
2007	Low	35	0.86	124	0.49	0.7548
	Medium	37	-0.17	121	-0.31	0.603
	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

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 the 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 10, 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. When graphed out, suburban tracts have higher scores than urban tracts on average in each year (Figure 10). 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.

Table 10: Pearson Correlation Coefficients	
2000	0.9662
2004	0.92222
2007	0.9472
2009	0.9799



3) Relationship between Proportion of Voucher-Occupied Households and CNQI Scores

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 11. 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 (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 influence of a

neighborhood's quality persists to have a significant but negative effect on the proportion of voucher-occupied households. The small coefficients suggest a small effect, but these findings are still interesting. Moreover, 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 location. A tract's urban location has a significant effect only in 2004, 2007, and 2009 on its proportion of voucher-occupied households. In 2004 and 2009, this effect is negative, whereas in 2007, the effect is positive. These findings do not lend to any clear patterns. A tract's suburban location 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.

Table 11: Multivariate Regressions between CNQI and Proportion of Voucher-Occupied Households

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

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

Part 3: Opportunity Structure

While suburban neighborhoods are theoretically categorized as being collectively of higher quality than urban neighborhoods, research by Murphy (2010) and Hanlon (2010) 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 is quite similar to the CNQI, but only contains a portion of its indicators that more directly relate to providing opportunities for socioeconomic mobility. These indicators are found in Table 2. I constructed this index using an identical method to the CNQI construction. I used GIS mapping techniques to tag addresses or zip codes to the centroid of the closest census tract. After the geographies were in sync, I constructed another composite score for each of the tracts. I calculated z-scores to standardize the values for each of the indicators around the population mean and summed the various z-scores.

Hypothesis 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 numbers 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 12 provides the descriptive statistics for the Opportunity Index.

Table 12: 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

In 2000, the mean score is 0.00548, followed by 1.543, 1.94×10^{-8}, and 1.89×10^{-8} and -0.4805 in the 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 11, 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 11). The 2007 and 2009 data depict minimal changes 2000, except for improvements in western segments of Gwinnett counties (Figure 11). 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 d t-tests for each of the years. The results are displayed in Table 13. Urban census

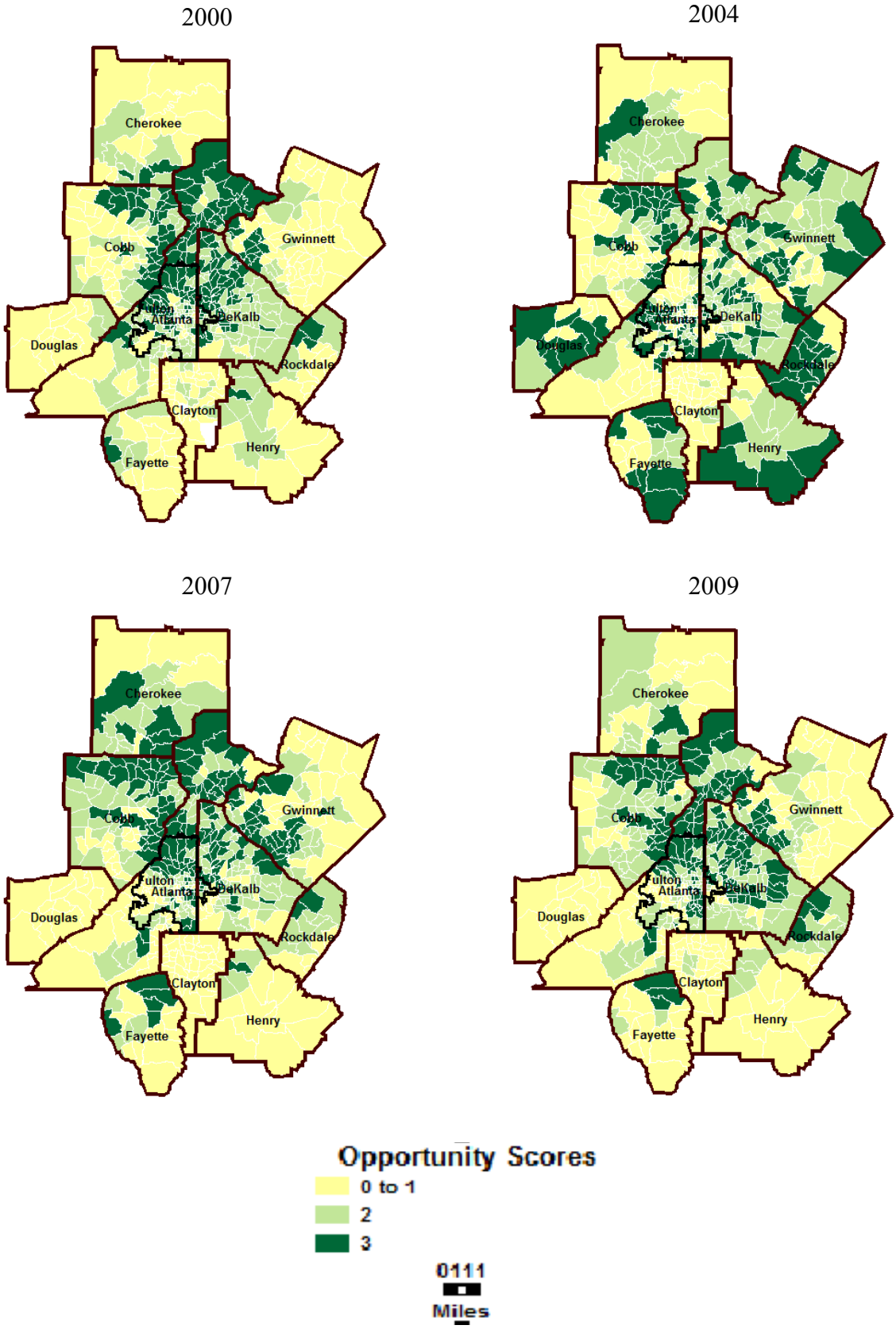
tracts have statistically significant higher scores than their suburban counterparts in all four years at the 0.05 significance level. These results suggest that urban census tracts within the City of Atlanta have stronger opportunity structures than those in the suburbs when taken as aggregate wholes.

Table 13: 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*

*$p<0.05$

Figure 11: Opportunity Scores for 10-County ARC Region in 2000, 2004, 2007 & 2009



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 14. 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 15. 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 of scores in the later years.

Table 14: 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 15: 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

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's results, vouchers are slowly decentralizing in Atlanta- therefore meeting the first goal of housing mobility programs (2010). 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 8).

Juxtaposed against the promise of decentralization is this issue of a re-concentration of vouchers in Atlanta's suburbs. Based on the findings, the neighborhoods in which 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 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 voucher-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. Troublingly, a direct relationship exists between a neighborhood's minority population and vouchers, as depicted by Models 2 and 3 in Table 11. 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- though 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 9, 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, the percentage of families receiving public assistance, and poverty rates, are driving the urban-suburban disparity in CNQI scores (Pendall 2000; Galvez 2000). Urban tracts have significantly lower scores for these types of variables. 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 is enabling 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 suburban transit provider in Clayton County, C-Tran, actually ended service in March 2010. The data also reveal that southern suburban districts had relatively low percentages of students meeting the standards on the 4th grade CRCT exam. 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 (Hanlon 2010; Kruse 2005). 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 (Hanlon 2010, Murphy 2010). 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 are aiding 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 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 were able to meet the demands placed on them by rising poverty and racial change, others were 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 indicate that the difference between urban and suburban opportunity scores was not

significant. While more recent data is necessary to observe trends, the 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 within 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 (1981, 185). Such antagonism can be further applied to different types of suburbs. As these findings suggest, all suburbs do not 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 and argue that:

> "certain 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" (1981, 176).

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 municipalities across the nation, Hanlon finds that inner-ring suburbs also typically "lose the battle for

investment resources" (Hanlon 2010, 48). 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 (2010, 23). 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 (Orfield 2002; Hanlon 2010). 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. 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 neighborhoods, 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 PHA's 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.

Gary Orfield (2002), Hanlon (2012), and Hamilton and Stream (2008) 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 Stream (2008) 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, Orfield (2002) 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 approach 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 (Kruse 2005; Lassiter 2006; Sjoquist 2000). Norris states, "it is simply not in the interests of local jurisdictions to give away tax advantage. Similarly, local governments are not incline to support proposals for such things as regional tax base sharing because nearly everyone sees them as a zero sum game" (2001, 565).

The third policy option builds upon Hillary Clinton's Suburban Core Opportunity Restoration Act (SCORE) which sought to fuel federal aid into distressed suburbs. Hanlon (2010) argues that while this act was not passed, it symbolizes progress and a realization of the troubles of many distressed suburbs (2010). 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 exists for this study:

(1) 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.

(2) 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.

(3) 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 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 market and the transmission of information on the location of vouchers and also identify barriers that they face in meeting HUDs broad goals for the HCV program. Interviews with voucher-recipient families may also expose disparities between family experiences and perceptions in destination neighborhoods and the quantitative scores calculated in this study. Additionally, such interviews may add hard-to-quantify characteristics of neighborhoods such as social networks and cultural inclusion to the story of communities. A longer period of analysis as well as in-depth case studies of each suburban county in the ARC are essential to better informing policy. This study provides a foundation for understanding variations in neighborhood quality, for identifying the types of neighborhoods that voucher-occupied households are located in, and for comparing suburban and urban destination neighborhoods from a quantitative approach.

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