WAS WILLIAM JULIUS WILSON RIGHT?

EXAMINING BLACK RESIDENTIAL OUTCOMES BY INCOME, 1960 & 2000

A Dissertation

by

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ABSTRACT

Is the primacy of race on black residential outcomes not as salient compared to previous decades? This study tests William Julius Wilson's out-migration thesis, a hypothesis indicating that the impact of race in shaping black residential outcomes is diminishing while the role of class is increasing over time. Stated differently, due to the combination of black upward mobility in socioeconomic standing and reductions in the severest forms of exclusionary discrimination, the relative and absolute salience of race in residential segregation is decreasing over time. If Wilson is correct, class would have increasingly important implications for "determining black life chances" (Wilson 1978:150), including residential mobility. To test the out-migration thesis, I use 1960 and 2000 census data where I perform two levels of analyses across 64 metropolitan areas. For the micro-level analysis, locational attainment is modeled to predict if (1) middle income blacks are living in higher income neighborhoods over time, (2) middle income blacks experience more parity contact with whites over time, and (3) middle income blacks experience more average contact with whites over time. Further, regression standardization and decomposition analysis allows for testing whether the role of income in black parity and average contact with whites is increasing over time. For the macro-level analysis, segregation within and between whites and blacks by income is computed at metropolitan-level segregation to determine if (4) middle income blacks are experiencing more contact with whites (at various income levels) across metropolitan areas over time and (5) middle income blacks are experiencing less contact

with poor blacks across metropolitan areas over time. Micro-level results show that middle income blacks are living higher income neighborhoods and experiencing more contact (parity and average) with whites over time. Additionally, the role of income for black parity and average contact with whites increases over time. Macro-level results show that middle income blacks are living in metropolitan areas with more unevenness and less exposure with poor blacks over time. Moreover, middle income blacks are living in metropolitan areas with less unevenness and more exposure with whites (regardless of income) over time.

DEDICATION

To my family, without you this would not have been possible. And to my late father, John Jones and late grandmother, Charlotte Swayze, thank you for teaching me the importance of perseverance.

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1. INTRODUCTION

Race and class play significant roles in black residential outcomes. Contributing race and class factors include white prejudice and avoidance (Charles 2003; Ellen 2000; Quillian 2002), economic differentiation (Jargowsky 1996, 1997, Wilson 1978, 1987, 2011), in-group preference (Bobo and Zubrinsky 1996), extra-legal discrimination (Massey and Denton 1993), and legal discrimination (Farley, Fielding, and Krysan 1997). Excluding the latter, there is a consensus among scholars that these factors continue to play a role in overall white-black segregation today.

With regards to economic differentiation, sociologist William Julius Wilson (1978, 1987) hypothesized the *out-migration thesis*, where he asserts that the impact of race in shaping residential outcomes for blacks is diminishing while the role of income is increasing. Stated differently, institutional interventions (e.g., the Civil Rights Movement) coupled with black social mobility decreases the relative and absolute saliency of race in black residential outcomes. If Wilson's prediction is correct, income has a growing importance on black lives.

Since the advancement of the out-migration thesis, the literature is divided. Some scholars find that middle income blacks are indeed living in better neighborhoods (Adelman 2005; Alba, Logan, and Stults 2000; Jargowsky 1997; Logan 2011; Logan and Stults 2011; Spivak, Bass, and John 2011; Spivak and Monnat 2013). For example, Spivak, Bass and John (2011) find that "high income black households live in neighborhoods that have almost the same number of blacks and whites" (555). Other

scholars argue that middle income blacks are unable to translate SES into "better" neighborhood outcomes (Feagin and Sikes 1994; Massey and Denton 1993; Massey, Gross, and Shibuya 1994; Niemonen 2002; Pattillo-Mccoy 2000b, 2000a; South and Crowder 1998). For instance, Massey and Denton (1993) contend that irrespective matched or unmatched on income, blacks and whites do not reside in the same neighborhood. While Massey and Denton's findings challenge aspects of black upward mobility, it does not directly challenge components of the out-migration thesis, such as middle income blacks are moving into higher income neighborhoods over time.

Where a person lives can be a determinant of their quality of health (physical and mental) education, access to municipal services, and neighborhood safety (Charles 2003; Massey and Denton 1993; Sampson 2009). Among minorities, there is little debate that blacks experience the greatest disparity of access to better neighborhoods (Iceland and Wilkes 2006; Massey and Denton 1993). However, neighborhoods that are often deemed out of reach for blacks are traditionally measured by overall contact with whites. I argue that black residential outcomes can also be examined by race *and* income, because movement from low-income, neighborhoods into neighborhoods with higher socioeconomic standing and resources is an improvement in residential outcomes—a major component of the out-migration thesis. Besides assessing residential outcomes by overall contact with whites, an examination of black residential outcomes by other predictors is needed, particularly how outcomes vary across time.

This dissertation tests William Julius Wilson's out-migration thesis by assessing white-black locational attainment and segregation by income across U.S. metropolitan

areas in 1960 and 2000. Since the out-migration thesis has multilevel implications, I test this thesis at the micro and macro-level in both periods.

For the micro-level analysis, census summary files are disaggregated into microdata files that are used to directly assess how black locational attainment varies by income in 1960 and 2000 over time. First, I examine whether middle income blacks are living in higher income neighborhoods. Second, I measure the extent to which middle income blacks are experiencing neighborhood contact with whites over time. Along with locational attainment analyses, standardization and components analyses are used to determine the impacts of white-black difference in rates of return (i.e. the effect of race), white-black difference in distributions (i.e. the effect of income) and the joint impact of both components have on white-black residential segregation.

For the macro-level analysis, I examine patterns of city-wide segregation and contact within and between whites and blacks grouped by income categories (Iceland and Sharp 2013). For instance, I group whites and blacks by income quintiles and examine exposure (using P^*) and uneveness (using the dissimilarity index (D) and separation index (S)) patterns of middle income blacks from poor blacks and whites at different income levels. Additionally, separate analyses are conducted to examine how white-black segregation varies by measurement and region.

This study makes several substantive contributions to the literature on locational attainment and residential segregation. First, little is known about the degree to which social and economic characteristics affect black neighborhood patterns over time. I extend previous work by examining metropolitan-level residential segregation in two

time periods, where the 1960 data reflect the impact of Jim Crow in the South and *de facto* segregation in the North and the 2000 data represent contemporary patterns. Second, I directly test Wilson's thesis in a more comprehensive way. Previous studies that test Wilson's thesis primarily focused on black residential outcomes relative to whites, failing to acknowledge neighborhood improvement can observed in predominately black neighborhoods. Third, if Wilson's prediction is correct, the primacy of race in black residential outcomes is not as salient compared to earlier decades. In other words, previous racial barriers to entry are more malleable and vary by cities across the nation. Currently, there is research that suggests black upward mobility is associated with some neighborhood integration (see Adelman 2004; Spivak, Bass, and John 2011), however there is a limited amount of research that examines these patterns over time. The order of the dissertation is discussed in the next section.

Chapter 2 focuses on literature pertaining to the out-migration thesis and black residential outcomes. This section is divided into three parts. Section 2.1 I discuss the development of Wilson's black concentrated poverty thesis, components of the thesis, and the out-migration thesis (Wilson 1978, 1987, 2009). Section 2.2 I assess the critiques of the out-migration thesis (Jargowsky 1997; John 1995; Massey and Denton 1993; Massey and Eggers 1990; Niemonen 2002; Pattillo-Mccoy 2000a, 2000b). Section 2.3 I review work that uses other theoretical frameworks relevant to black residential outcomes: spatial assimilation theory (Alba et al. 2000; Massey and Denton 1985, 1993; Spivak et al. 2011) place stratification theory (Charles 2003; Pais, South, and Crowder

2012; Spivak et al. 2011) and in-group preference (Bobo and Zubrinsky 1996; Brown and Chung 2006; Charles 2003; Clark 2002; Fossett 2006; Wen et al. 2009).

Chapter 3 centers on the data and methods used to conduct the analyses, paying particular attention on the historical comparability of census data over time. For instance, the 1960 tabular data does not perfectly align with 2000 data. I discuss ways to reconfigure the variable of interest, race by income and discuss a procedure to maintain geographic boundaries across time. In addition, I review the methods that are used at the micro- and macro-levels of analysis.

Chapter 4 focuses on the results from the micro-level analysis. As mentioned, I assess the locational attainment of blacks by income in 1960 and 2000. I measure locational attainment by "(a) neighborhood mean income, (b) parity contact with whites and (c) average contact with whites" (Fossett 2017:24-34; Fox 2014). This analysis is guided by two research questions. First, do middle income blacks live in higher income neighborhoods over time? Second, do middle income blacks experience more residential contact with whites over time? Going a step further with the attainment regression results, I perform regression standardization and component analysis to assess the impact of white-black means and coefficients have on the neighborhood contact with whites (Fossett 2017; Fox Crowell and Fossett 2016; Jones and Kelley 1984). In other words, I am able to assess how separate and joint components, namely race and income, have in determining overall segregation. Most importantly, results from the components analysis will signal whether Wilson's prediction about the role of income in black residential outcomes is growing over time.

Chapter 5 consists of results from the macro-level analysis in 1960 and 2000. This analysis involves computing white-black segregation by income across the same metropolitan areas in the previous analysis. Segregation is measured by unevenness (dissimilarity and separation indices) and exposure (P^*). This analysis tests two research questions related to the out-migration thesis. First, to what extent are middle income blacks unevenly distributed in areas and experience less exposure to poor blacks in metropolitan areas over time? Second, to what degree are middle income blacks evenly distributed in areas and experience more contact with whites in metropolitan areas over time? In addition, Chapter 5 presents segregation scores by region and by two unevenness measures 1960 and 2000. For the latter, this is an analytical exercise demonstrating the potential methodological implications of solely using one segregation measure for research (Fossett 2017).

In the final section of my dissertation, Chapter 6, I review and discuss the conclusions from chapter 4 and chapter 5. In my discussion, I address the limitations of this study and the direction of future research.

2. LITERATURE REVIEW

2.1 Development of Wilson's Thesis

William Julius Wilson is arguably one of the most praised and criticized figures within the field of Sociology. Over the course of several books, Wilson developed a broad theoretical framework that has been widely used and challenged. Critiques of Wilson's work hit a fever pitch after the publications of *The Declining Significance of Race* (hereafter, DSR) in 1978, *The Truly Disadvantaged* (hereafter, TTD) in 1987, and *When Work Disappears* (hereafter, WWD) in 1996 where he introduces the notion that macro-level and individual-level processes have important implications on black lives, particularly low-income blacks.

In DSR, Wilson discusses the socio-historical relationship between institutions and the economy and how it relates back to U.S. race relations (Wilson 1978, 2011). Focusing on three points in time—pre-industrial/post-antebellum period, industrial period, and modern industrial period, Wilson illustrates how institutions and the economy oppressed and in some cases improved circumstances for blacks (Wilson 1978, 2011). In the pre-industrial/post-antebellum period, Wilson argues that early race relations was structured by a "system of production (e.g., slavery), manifesting into racial inequality" (Wilson 2011:55). In addition, Wilson describes the modern industrial period as decades where previous racial oppression is "reduced" through institutional interventions (i.e. Civil Rights Movement) as well as black social mobility through educational and occupational advancements (Wilson 1978, 2011). As a result,

previous racial oppression felt by *all* blacks is now an economic oppression felt primarily by poor blacks (Wilson 1978). In other words, class (while not discrediting the primacy of race) has a growing importance on black lives over time.

Building on DSR, TTD (1987) and WWD (1996) focuses on how economic and spatial changes increase black concentrated poverty within low-income neighborhoods. Wilson asserts urban restructuring (i.e. economic transition from manufacturing to service sectors) in the city created a skill and spatial mismatch, thereby intensifying black inner-city joblessness (Wilson 1987, 1996, 2009). Since the deindustrialization argument, several empirical studies have generally supported Wilson's position (Bound and Holzer 1993; Gobillon, Selod, and Zenou 2003; Jargowsky 1997; Kasarda 1989; O'Connor, Tilly, and Bobo 2001; Quillian 2003; Simpson 2000; Stoll, Holzer, and Ihlanfeldt 2000). Quillian (2003) confirms Wilson's prediction showing that low-income black neighborhoods are positively associated with higher unemployment rates for working-age men over time.

In addition to the economy, Wilson argues that reductions in legal discrimination coupled with black upward mobility, bifurcated black neighborhoods by social class (Wilson 1987). From Wilson's perspective, middle income blacks moved into "…higher income neighborhoods in other parts of the city and to the suburbs" (Wilson1987:7) while poor blacks remained socially isolated. Linking economic and spatial factors together, Wilson contends that the economic restructuring of the city coupled with a lack of social influence (as a result of middle income blacks moving away from low-income blacks) created a "culture of poverty" for inner-city blacks—joblessness, teenage

pregnancy, crime, welfare dependency, and lower educational attainment (Wilson 1987, 2009).

Since positing the social isolation argument, studies testing Wilson's prediction generally support his position (Fernadez and Harris 1992; Jargowsky 1997; Rankin and Quane 2000; Shihadeh and Flynn 1996). Rankin and Quane (2000) find that black "residents of poorer neighborhoods had fewer friends who were stably employed and college educated while maintaining more friends on public assistance than black residents of middle income neighborhoods" (157). Moreover, Shihadeh and Flynn (1996) report that economic and cultural factors related to social isolation are positive indicators of black robbery and homicide.

In this study, I do not test Wilson's predictions about changes in the urban economy or social isolation; however, there are important parts of his theory for how changes in city environments have disproportionately hurt poor blacks. Instead, I focus on a piece of Wilson's social isolation argument: the out-migration of middle income blacks. As previously mentioned, Wilson suggests that reductions legal discrimination coupled with black social mobility gave middle income blacks the opportunity to migrate out of the inner-city over time (Wilson 1978, 1987). Of note, Wilson does not specify the residential outcome for middle income blacks, however he does suggest that this group experienced "better" outcomes compared to poor blacks (Wilson 1978, 1987). In TTD (1987), Wilson describes previous and current residential outcomes of middle income blacks by the following description:

> Indeed, in the 1940s, 1950s, and as late as the 1960s such communities featured a vertical integration of different segments of urban black population. Lower-class, working-class, and middle class black families all lived more or less in the same communities (albeit in different neighborhoods)…Whereas today's black middle class professional no longer tend to live in ghetto neighborhoods and have moved increasingly into mainstream occupations outside the black community, the black middle class professionals of the 1940s and 1950s (doctors, teachers, lawyers, social workers, ministers) lived in higher income neighborhoods of the ghetto and serviced the black community. Accompanying the black middle class exodus has been a growing movement of stable working-class blacks from the ghetto neighborhoods to higher-income neighborhoods in other parts of the city and to the suburbs (Wilson 1987:7).

In more recent work, *More than Just Race* (2009), Wilson becomes more explicit about the residential outcomes of middle income blacks, indicating that this group "increased their efforts to move from concentrated black poverty areas to more desirable neighborhoods in the metropolitan area, including white neighborhoods" (Wilson 2009:34).

Considering Wilson's use of the phrases "higher income neighborhoods"(Wilson 1987:7), "the changing impact of race versus class for mobility opportunities" (Wilson 1978:167), and "white neighborhoods"(Wilson 2009:34), I developed two versions of the out-migration thesis, a strong version and a weak version. The strong version consists of hypotheses based on Wilson being more explicit about the residential outcomes of middle income blacks, such as improved neighborhood SES and less contact with poor blacks over time. The weaker version posits that middle income blacks are experiencing more contact with whites over time. I develop four components that are strongly and weakly associated with the out-migration thesis. Note that the strong and weak versions are denoted with a "S" and "W":

(1) Over time, middle income blacks are residing in higher income neighborhoods [S]

(2) Over time, middle income blacks are experiencing less contact with poor blacks [S]

(3) Over time, middle income blacks are experiencing more contact with whites (at various income levels) [W]

(4) Over time, the importance of income for black contact with whites increases [W]

2.2 Critics of the Out-Migration Thesis

Critiques of the out-migration thesis have indicated possible flaws with some of its underlying assumptions (Massey 1990; Massey and Denton 1993; Massey et al. 1994; Niemonen 2002; Pattillo-Mccoy 2000b, 2000a; Pattillo 2005). First, researchers question whether the out-migration of middle income blacks is related to black concentrated poverty (Massey and Denton 1993; Pattillo-McCoy 2000a). Second, researchers question the residential outcomes of middle income blacks relative to other blacks and whites (Niemonen 2002; Pattillo-McCoy 2000a).

Massey and Denton (1993) contend that shifting urban economy with racial segregation produced black concentrated poverty. Using neighborhood simulations in four hypothetical cities, the authors show at various degrees of racial and economic segregation, poor blacks still face concentrated poverty (Massey and Denton 1993). In a direct response to Massey and Denton (1993), Jargowsky (1997) offers a different interpretation to Massey and Denton's conclusion:

> Based on this simulation, one could just as well conclude that the effect of racial segregation is to heighten and reinforce the poverty-concentrating effects of economic segregation. The effect could be even larger than the table indicates, since the degree of economic segregation used in the simulation is not as extreme as the simulated level of racial segregation (1997:136).

In addition, Jargowsky and Bane (1990) test the relationship between the out-migration of middle income blacks and concentrated poverty; producing results that run counter to Massey and Denton's (1993) findings. The authors find that out-migration of middle income blacks is associated with low income neighborhood expansion in all four cities. Moreover, Massey and Eggers's (1990) study provides marginal support for the out-migration thesis. Assessing concentrated poverty among minorities, the authors conclude "interclass segregation has virtually no detectable effect whatsoever among blacks" (Massey and Eggers 1990:1183). While Massey and Eggers' regression coefficient for blacks is not statistically significant, Jargowsky (1997) notes that a "t-ratio of 1.71 is marginally significant at a 0.10 level" (134).

Numerous scholars have critiqued Wilson's arguments about the residential outcomes of middle income blacks (Massey and Denton 1993; Niemonen 2002; Pattillo-Mccoy 2000b, 2000a; Pattillo 2005). For instance, Niemonen (2002) contends that compared to other minority groups, middle income blacks are unable to convert SES into co-residency with whites by income. In other words, middle income blacks are not residing near middle income whites. Instead, Niemonen contends middle income blacks are only able to convert their SES into co-residency with poor whites (Niemonen 2002). While Niemonen points are supported by previous research that blacks tend to have inferior residential outcomes compared to other minorities (see Galster 1987:1991;

Galster and Keeney 1988; Logan and Schneider 1984), his findings do not directly assess the out-migration thesis. One could argue that movement from low income black neighborhoods to low income white neighborhoods could be a neighborhood improvement—more access to municipal services, lower crime rate, and lower poverty rate. Further, Wilson is not clear or consistent about whether middle income blacks live with more whites by certain income status. Instead, Wilson states that middle income blacks move into "higher income neighborhoods in other parts of the city and to the suburbs" (Wilson 1978:7). In other words, Wilson focuses on improved conditions for middle income, while critics are testing whether they achieve parity with whites of similar income.

Research by Pattillo-McCoy (2000a) examines the neighborhood outcomes of the black middle class in Chicago. Drawing on various methods (ethnography, historical data, and census data) for the analysis, Pattillo-McCoy points out several flaws with Wilson's out-migration thesis. Pattillo-McCoy argues growth of the black middle class expanded low income neighborhoods, which appears like an out-migration. In other words, middle class blacks are living in close proximity to low income neighborhoods—hence no residential improvement. Although Pattillo-McCoy shows that middle income black neighborhoods in Chicago are "a spillover effect," a more comprehensive study is needed to test whether they experience improved conditions relative to poor blacks in several metropolitan areas, and more so than they did in the past.

2.3 Literature on Black Residential Outcomes

Literature examining black residential outcomes is extremely rich. Works in this area have relied on spatial assimilation, place stratification, and in-group preference (or ethnocentrism) as theoretical frameworks.

2.3.1 Spatial Assimilation Model

Spatial assimilation refers to an individual's ability to "convert socioeconomic status into majority white neighborhoods" (Alba et al. 1999; Alba and Logan 1993; Charles 2003; Charles Zubrinsky 2006; Massey 1985; Massey and Denton 1985:98; Pais et al. 2012). Traditionally used to examine immigrant groups, researchers have acknowledge the limitations of the spatial assimilation model on native-born minorities such as blacks (Alba et al. 1999; Logan and Molotch 1987; Massey and Denton 1993). However, this has not stopped other researchers from using this model to examine residential outcomes of blacks and other minority groups compared to whites (Bobo et al. 2000; Charles Zubrinsky 2006; Iceland, Sharpe, and Steinmetz 2005; Massey and Mullan 1984; Spivak et al. 2011; Spivak and Monnat 2013).

Spatial assimilation model derives from early social distance work by Robert Park, Ernest Burgess, Roderick McKenzie (Park, Burgess, and McKenzie 1925; 1924, 1926, 1950, 1952) and Milton Gordon (1964). The concept of social distance developed

by Park (1924) refers to individual and social characteristics as a determinant of contact (or in this case neighborhood contact). That is, individuals who share similar social characteristics (e.g., race, ethnicity, socioeconomic position, age) should experience greater contact. From Park's perspective, a city is a "mosaic of little social worlds which touch but do not interpenetrate" (Park 1952:58). Notwithstanding the concept of social mobility, Park's social distance work provides a foundation for spatial assimilation.

In addition to social distance, Park (1950) observed the evolution of intergroup relationships through the race relation cycle. The race relation cycle is a social process where a series of steps must occur in order for minorities to integrate with the majority. In the context of housing, it was common for new arrivals to experience the greatest amount of prejudice and discrimination (e.g., firebombing a black household in an all-white neighborhood in the 1960s) compared to later generations. Historical examples of completed or near-completed cycles include early European immigrants (see Lieberson 1980) and Cuban immigrants (see Massey 2002).

In the book *Assimilation in American Life*, Gordon (1964) introduces a multistage assimilation process where minorities adopt characteristics of the majority group over time. Since Park and Gordon, numerous scholars have expanded early assimilation theories: "straight-line assimilation" (Alba and Nee 2003), "segmented assimilation" (Gans 1992; Portes and Rumbaut 1990; Portes and Zhou 1993), "strategic assimilation" (Lacy 2007), and "spatial assimilation" (Massey 1985; Massey and Mullan 1984).

Several studies measure upward mobility and neighborhood outcomes using spatial assimilation as a theoretical framework. Massey and Denton (1985) test whether socioeconomic status improves Anglo contact for blacks, Puerto Ricans and non-Puerto Rican Hispanics in 1970. Overall, Massey and Denton generally find that higher SES increases neighborhood contact with Anglos while decreases contact with other minorities. Among different minority groups, the authors find that blacks are in a deficit compared to all Hispanics. Among Puerto Ricans and non-Puerto Rican Hispanics, the authors find Puerto Ricans are less likely to attain more contact with Anglos, however not to the same extent for blacks.

Alba et al. (1999) examine the degree to which suburbanization patterns of immigrants support or challenge the spatial assimilation model over time. The authors find that in general, immigrant suburbanization is positively associated to socioeconomic status. For Latino and Afro-Caribbean immigrants, the authors find those that are married without children are more likely to live in a suburban neighborhood compared to those that are married with children—a finding that runs counter to other immigrant groups in the study as well as previous research.

2.3.2 Place Stratification Model

The place stratification theory describes individuals and institutions implementing physical space from minorities resulting into racially homogeneous neighborhoods (Charles 2003; Charles Zubrinsky 2006; Massey and Denton 1993; Pais et al. 2012). Place stratification emphasizes that these institutional practices are maintained through redlining, racial steering, and blockbusting (Galster 1988; Massey and Denton 1993). Although legal discrimination has been eliminated, place stratification emphasizes informal neighborhood practices exist and are stronger depending on the group's position in the social hierarchy (Galster 1990, 1992; Iceland and Wilkes 2006; Ondrich, Ross, and Yinger 2001; Pais et al. 2012; Yinger 1998). Several studies test the place stratification theory as it relates to black residential outcomes.

Ondrich, Ross, and Yinger (2001) investigate factors that influence real estate agents to practice racial steering toward minority homebuyers and how these patterns vary by metropolitan areas (Atlanta, Chicago, Los Angeles, and New York). The authors note that patterns of racial steering are positively associated with majority black neighborhoods and these patterns vary by city. For instance, incidents of racial steering in Atlanta are positively related to housing units that are further away from predominately-black neighborhoods—an effect not seen in Chicago, Los Angeles, or New York (Ondrich, Ross, and Yinger 2001).

Kim and Squires (1995) examine characteristics of mortgage lender institutions and whether these characteristics act as determinants of loan rejection for black borrowers in Milwaukee, WI. The authors use data from the Equal Employment Opportunity Commission (EEOC) and Home Mortgage Disclosure Act (HMDA) to measure three predictors of mortgage lending discrimination: "racial composition of the lender's work force, institution type, and size" (Kim and Squires 1995:100). Findings reveal that on average, "black applicants are treated less favorably than white applicants in the home mortgage market" (Kim and Squires 1995:106). Regarding the characteristics of mortgage lender, the authors find that "higher proportion of black professional employees at thrift institutions increases the probability that mortgage application from a black borrower is approved" (Kim and Squires 1995: 110).

Iceland and Wilkes (2006) measure the role of SES (i.e. income, education, occupation, and poverty status) on neighborhood outcomes for blacks, Hispanics, and Asians relative to whites from 1990-2000. Testing their hypotheses using the spatial assimilation and place stratification frameworks, the authors find support for both theories. The authors report that segregation can differ by class (of note, a very small effect for blacks relative to whites); however, white-black segregation is higher relative to other minority-white pairwise comparisons.

2.3.3 In-Group Preference Model

In-group preference refers to neighborhood choice based on wanting to live closer to other group members (Bobo and Zubrinsky 1996; Clark 1986, 1991; Krysan et al. 2009; Thernstrom and Thernstrom 1997). Not to be confused with "out-group avoidance" (Charles Zubrinsky 2006; Ellen 2000; Farley et al. 1994; Frey and Farley 1993; Massey and Denton 1993) or multiethnic neighborhood preferences (Adelman 2005; Krysan and Farley 2002), in-group preference emphasizes that individuals have a desire to live in multiethnic spaces, not resulting from discriminatory feelings from others.

Krysan and colleagues (2009) test whether neighborhood preference in Chicago and Detroit are based on "color blindness" or "race consciousness". If the latter, the authors further explored whether desirability is shaped by wanting to live near racial/ethnic counterparts or avoiding members of the majority. Testing multiple theoretical frameworks, the authors find those who expressed "common fate identity" (as a measure of in-group identity) "were no more or less likely to be influenced by a neighborhood's racial composition" (Krysan et al 2009:15). Moreover, the authors find that "white respondents who generally felt closer to other whites than blacks are greatly influenced by the racial composition of a neighborhood" (Kyrsan et al. 2009:15).

Wen, Lauderdale, and Kandula (2009) test whether "ethnoburbs" (ethnic communities that encompass affluent minorities who prefer neighborhoods of the same racial/ethnic group) are observable among blacks, Asian subgroups, and Hispanic

subgroups across the U.S. over time (1990-2000). Within the ten-year period, the authors note that number of black ethnoburbs has increased (albeit by 4 percent). Although a small percentage, the authors emphasize that 4 percent represents 400 newly established black suburban communities.

3. METHODOLOGY

3.1 Data

The purpose of this chapter is to discuss the data and methods used in this dissertation. This chapter is split into subsections to describe in detail (a) the ways data are being used to perform certain analysis; (b) methods used to identify a copy of the 1960 dataset; (c) techniques used to make the 1960 data comparable to 2000; and (d) procedures used to examine segregation and locational attainment results across geographic boundaries over time. In addition, this chapter concludes with two sections that discuss the specific methods used at the micro- and macro-level.

This dissertation examines black residential outcomes using 1960 and 2000 data. 1960 is selected as the baseline year because Wilson identifies this decade as the start of institutional changes. 2000 is selected because it represents contemporary housing outcomes. Data derive from the 1960 and 2000 U.S. decennial censuses summary file 3. Note that the census survey format and sampling sizes have varied over time. For instance, until 2000 the census survey format consisted of a “short” and “long form”. The short form is a nationally represented survey (100% coverage) where the questionnaire consists of general population questions such as age, sex, race and relationship to head of household. The long form is a questionnaire where a sample of the population answer more detailed questions such as income, ancestry, and education. Twenty-five percent of the population received the long form in 1960. Seventeen percent

of the population received the long-form in 2000. For this study, data from the census long form is used.

Of note, the Census Bureau replaced the long form with the American Community Survey (ACS) in 2010. The ACS is an annual survey that reflects 1%, 3%, and 5% of the U.S. population. For this study, I opted not to use the 2010 ACS data for two reasons. First, recent research suggest that using data with small samples could bias population estimates, potentially having negative implications for segregation findings (Logan et al. 2017; Napierala and Denton 2017). Second, using the 2000 data maintains a comparable sample size to 1960.

3.1.1 Utilizing 1960 and 2000 Data at the Individual-Level

Neighborhood outcomes in a MSA derive from family income data at the census tract for 1960 and 2000. For both years, I disaggregate summary table tabulations of family income data into microdata files. This involves cross-cell tabulation of census tracts by race and income category where counts reflect an "individual" case. For instance, if census tract 4501900C000100 (Charleston County, South Carolina) in 1960 has 300 black households that are in the income category 3,000-$3,999, then a user written program in STATA will create 300 individual records (StataCorp 2015).

The independent variable at the micro-level is family income by race. Note that using the 1960 income by race data introduces the assumption that the income distribution is equal for whites and blacks when in fact it is not. This problem is more

pronounced when comparing blacks and whites in the upper intervals of the income categories. Using data from the 1960 5% Integrated Public Use Micro Series (Ruggles et al. 2105), Tables 1 and 2 shows means, standard deviations, and frequencies of total income for blacks and whites in Birmingham AL and Chicago IL respectively. At the lowest income interval, $10,000-14,999 blacks and whites on average have the same income in both cities. However, as income increases, greater income variation between whites and blacks is present in Birmingham. Moreover, it is noticeable that as income interval rises, smaller shares of blacks accumulate income beyond the $10,000 threshold compared to whites in both cities. Overall, this exercise demonstrates that actual black income is less than the estimated income distribution in the tabular data. In other words, this has the potential for over estimating minority income levels, which could bias locational attainment and segregation results. Despite this limitation, I proceed with caution when interpreting black neighborhood outcomes.

3.1.2 Utilizing 1960 and 2000 Data at the Aggregate-Level

MSAs are the macro unit of analysis. In this dissertation, three analyses are conducted: (1) measuring residential unevenness and exposure within and between whites and blacks by income across metropolitans over time, (2) examining overall white-black segregation across metropolitans over time, and (3) assessing variations in white-black segregation by measurement and regions over time. The first analysis, family income by race (the independent variable), is partitioned into income quintiles to represent 20% of the population (i.e. 1st quintile is equal to the lowest 20th percent in income distribution and so on). The dependent variables are unevenness (dissimilarity and separation) and exposure (P^*) at the MSA. The second analysis, white-black segregation is computed to examine how it varies by measurement (dissimilarity vs. separation) over time. The third analysis, white-black segregation by region is measured over time. Specific regions used in this analysis include states (i.e. Northeast, Midwest, South, and West) and metropolitan areas (i.e. Rustbelt cities).

3.1.3 Utilizing 1960 and 200 Data at the Individual- and Aggregate-level

For both levels of analysis, the study is restricted to 64 MSAs where the black population can fill at least 3 census tracts, 95% of the non-white population is black in 1960, and 95% of the white population is non-Hispanic white in 1960. I use these criteria because I want to use cities where there is a sizable estimated non-Hispanic white and black population. Considering population size is a function of segregation analysis, a small black population could potentially bias segregation and attainment results (Fossett 2017).

3.2 1960 Data Selection

The 1960 census is publicly available through non-census repositories including the Inter-University Consortium for Political and Social Research (hereafter, ICPSR), Social Explorer (hereafter, SE) and the National Historical Geographical Information System (hereafter, NHGIS). ICPSR and SE are comprised of data collected by the National Data Use and Access Laboratories, a company that created micro- and aggregate-data files for the 1960 and 1970 censuses. NHGIS hosts a hybrid version of the 1960 census where the data are drawn from the National Data Use and Access Laboratories, Elizabeth Mullen Bogue files and 1971 data from the Census Bureau. In addition, ICPSR hosts a copy of Elizabeth Mullen Bogue files in their repository, but it

is automatically excluded from the analysis because it does not contain the nonwhite family income table tabulation.

Along with identifying the multiple copies of the 1960 census, resolving any discrepancies across datasets is required. This process involved merging ICPSR, NHGIS, and SE datasets and drawing a random sample to determine if there are dissimilarities within and between datasets. Dataset variations include total number of census tracts, total population counts, and total number of families in income tabulation. Results from this diagnostic exercise revealed that the ICPSR file is missing data on several tracts in New Jersey. In contrast, SE and NHGIS files have data on several MSAs in New Jersey, which by process of elimination removes ICSPR as a potential 1960 dataset. Comparing SE to NHGIS, there are frequent discrepancies between total population counts in the printed Census volumes and the SE file. As a result, NHGIS is selected as the 1960 data source.

3.3 Historical Comparability

Income by race table tabulations has varied over time. For instance, the 1960 census income by race summary table tabulation aggregates blacks, Chinese, American Indians, Alaskan Natives, and Pacific Islanders together to represent a non-white category. In contrast, summary tables are reported by single-race categories in 2000. To offset the described issue with the 1960 data, this analysis uses cities where 95% of the total population is black from the nonwhite population. Example cities that meet this threshold are Atlanta GA, Pittsburgh PA, Chicago IL, and Charleston SC. Example cities that do not meet this requirement are Oklahoma City OK, Los Angeles CA, and Seattle WA. See Figure 1 for a list of cities by region that meet this threshold. Note that the same cities that meet the 1960 requirement are also used in 2000. In addition, multiracials are excluded from this study because individuals in this group have been inconsistently enumerated over time and table tabulations for specific multiple-race category (e.g., black-white multiracials) do not exist.

In addition to blacks, how persons of Hispanic backgrounds are tabulated also varies across censuses. In 1960, white persons with a Spanish surname were only tabulated as “White with Spanish Surname” if they resided in the Southwest (Texas, Arizona, Colorado, California, and New Mexico) (U.S. Census Bureau 1963b). Outside the five Southwestern states, Puerto Ricans are included in this tabulation (U.S. Census Bureau 1963a). To identify individuals, Census used a “manual coding operation where

surnames are compared to a list of Spanish surnames complied the Immigration and Naturalization Service. Surnames that do not appear to have Spanish origins were examined by linguist specialists to determine if its roots were from other Romance languages including French, Portuguese, and Italian" (U.S. Census Bureau 1963b: Identification of persons of Spanish surname). Since 1970, individuals can self-identify as Hispanic, where reported responses will be reflected in a nationally representative sample. The adequacy of how Spanish surname individuals are enumerated in 1960 may complicate this analysis, in part, because this population is not limited to five Southwestern states. For instance, white-black segregation results in Salt Lake City UT may not accurately reflect the non-Hispanic population. To reiterate, this study includes cities where 95% of the total population is non-Hispanic white from the white population.

3.4 Geography

Identifying an appropriate spatial unit of analysis is often discussed in segregation research (Allen and Turner 1995; Cowgill and Cowgill 1951; Duncan and Duncan 1955; Lee, Reardon, et al. 2008). In particular, selecting a micro unit used as proxy neighborhoods. Empirical research have relied on census tracts as a spatial unit to represent neighborhoods (Glaeser and Vigdor 2001; Iceland and Wilkes 2006; Logan, Stults, and Farley 2004; Massey and Denton 1993). Census tracts are small geographic areas with a population ranging from "1,500 to 8,000 (4,000 on average) inhabitants in

the United States and Puerto Rico" (Iceland and Steinmetz 2003:2; U.S. Census Bureau 2012). A common criticism for not using a census tract is that it may mask heterogeneity not observable relative to smaller geography (Allen and Turner 1995; Duncan and Duncan 1955; Iceland, Sharpe, and Steinmetz 2003; Lee, Firebaugh, et al. 2008; Taeuber and Taeuber 1965). Research by Allen and Turner (1995) examine the extent to which census tracts conceal racial and ethnic variation by blocks in Los Angeles County. The authors find that nearly half of the blocks sampled show significant racial/ethnic variation between geographic scales. While criticism of against census tracts is valid, census tracts are the lowest level of geography publicly available in 1960. Prior to 1990, the United States was not fully tracted[1]—thus smaller units did not exist. In this study, census tracts are used as the micro unit of analysis.

There is little debate about the macro unit of analysis used in segregation research. Since early segregation works, researchers have relied on Metropolitan Statistical Areas (MSA) as the aggregate unit. A MSA is a geographic boundary containing at least one urbanized area with a population equaling or exceeding 50,000 inhabitants (U.S. Census Bureau 2016). In addition, 1960 MSA specifications included: "(1) areas that are economically and socially integrated between the outlying counties and central city, (2) areas that are related primarily to the attributes of the contiguous county as a place of work, and (3) areas where 75 percent of the labor force of the county are employed in nonagricultural fields" (U.S. Census Bureau 1960: xi).

[1] In 1960, 136 MSAs were completely tracted and 42 were partially tracted (U.S. Census Bureau 1963c)

3.5 Temporal Segregation Analyses and Geographic Boundary Shifts

Changes in MSA boundary definitions can potentially complicate segregation and attainment analyses over time. For instance, Charleston SC MSA is made up of 1 county (Charleston) in 1960 and 3 counties (Charleston, Berkley, and Dorchester) in 2000. Ignoring additional counties in 2000 may exclude a population socially and economically tied to Charleston. Work by Burr, Galle, and Fossett (1990) investigate this problem by using "fixed" and "decade specific boundaries" to examine black occupational inequality from 1940-1960 (253). The authors define a fixed boundary as a "constant geographical component over time" (Burr, Galle, Fossett 1990:252). For example, in Charleston, a fixed boundary procedure in 2000 would require to retrospectively allocate Charleston, Berkley, and Dorchester Counties to 1960 and vice versa. A drawback with this method is that "over-bounding" areas that are not tied to the urban core at that point in time may bias the interpretation of segregation results over time. Additionally, the U.S. was not completely "tracted" until 1990, thus allocating geographical boundaries from 2000 (65,443 tracts) to 1960 (23,365 tracts) is not possible (U.S. Census Bureau 1963c).

Alternatively, decade specific boundaries reflect "an area's geography at that point in time" (Burr, Galle, and Fossett 1990:253). For example, Charleston County can be used for segregation analysis in 1960 while Charleston, Berkeley, and Dorchester Counties can be used for segregation analysis in 2000. A benefit of this method is that

"geographic boundaries are socially and economically tied to the city" (Burr, Galle, Fossett 1990:254). Moreover, decade specific boundaries can capture metropolitan changes (see Fuguitt, Heaton, and Lichter 1988) compared to fixed boundary definitions. In this study, decade specific boundary definitions are used in 1960 and 2000.

Note that in statistical analyses such as computing the descriptive statistics for the full MSA sample (and separately by region), a handful of MSAs are combined into one in 2000. For instance, Raleigh, NC and Durham, NC are treated as separate MSAs in 1960 and consolidated into Raleigh-Durham-Chapel Hill MSA in 2000. To avoid double counting, some MSAs are combined in both periods.

3.6 Individual-Level Analysis

3.6.1 Description of Analysis

In this section I discuss how I use micro-level data to examine the residential outcomes of middle income blacks. Specifically, I examine how individual and social characteristics predict neighborhood outcomes—a technique commonly referred to as locational attainment (Alba and Logan 1992, 1993). In this analysis, I test Wilson's out-migration thesis by examining the locational attainment of middle income blacks over time. As previously mentioned, Wilson is explicit about certain aspects of residential outcomes of middle income blacks, including neighborhood SES and contact with poor blacks. Yet, Wilson is less explicit about the amount contact middle income black's contact with whites over time. For this analysis, I test the out-migration thesis by two

dependent variables: tract mean income and contact with whites (parity contact and average contact). As described in section 3.1.1, the upper intervals of the race by income category are not same for whites and blacks—complicating intraclass analysis. As a result, I am unable to predict whether middle income blacks are experiencing less contact to poor blacks at the micro-level. Instead, this analysis is performed at the macro-level (see section 3.7 for more detail).

The independent variable of interest is family income by race. Individuals who are at or exceed average family income of their respective city are considered the middle class. I am aware this method crudely identifies one of several elements of what constitutes as the middle class (see Feagin and Sikes 1994; Lacy 2007; Pattillo-Mccoy 2000a), however using income as a measure is a common approach. Before I discuss the research design first, however, I review the hypotheses:

> *Hypothesis 1:* Over time, middle income blacks are living in higher income neighborhoods.
>
> *Hypothesis 2:* Over time, middle income blacks are experiencing more contact with whites (at various income levels).
>
> *Hypothesis 3:* Over time, the importance of income for black contact with whites increases.

3.6.2 Neighborhood SES

Neighborhood SES is operationalized by tract mean income. The independent variable, income by race is presented in the logarithmic form because it is a better linear fit for the relationship. Tract mean income (*y*) reflects aggregate family income in a neighborhood where neighborhood attainment is presented in log dollars. Since the dependent variable is unbounded, I use ordinary least squares for statistical modeling.

3.6.3 Parity Contact with Whites

To measure whether middle income blacks experience more contact with whites over time, I use the "difference of means" approach where "residential outcomes (*y*) additively determine the level of segregation in the city measured by the dissimilarity index (D)" (Fossett 2017:162; Fox 2014:59; Fox-Crowell and Fossett 2016:16). The difference of means of approach consist of a "two group comparison (i.e. white-black) where area proportion white is at or above parity with the city white proportion registers a score of one (1) and zero otherwise (0)" (Fossett 2017:97). The mean attainment score for whites and blacks is calculated and the difference between both yields the segregation score—in this case D (Fossett 2017; Fox 2014). D ranges from 0 to 100, 0 for complete integration and 100 for maximum segregation. Attainment outcomes can be expressed into a "difference of means framework." The equation, shown below is cited

and quoted from (Fossett 2017:equation section; Fox-Crowell and Fossett 2017: equation section):

$$“\ D=\overline{Y}_1-\overline{Y}_2$$

Where:

D is the dissimilarity index score

$\overline{Y}_1$ is the mean score for whites

$\overline{Y}_2$ is the mean score for blacks ”

3.6.4 Average Contact with Whites

The second dependent variable, “average contact with whites” “(y) (see Fossett 2017:34) additively determines the level of segregation as measured by the separation index (S)” (Fossett 2017:166; Fox 2014:59). The separation index, also known as eta squared (η^2), Zoloth’s S, or variance ratio (V) is a measure of unevenness (Duncan and Duncan 1955; Fossett 2017; James and Taeuber 1985; Reardon and Firebaugh 2002; White 1986; Zoloth 1976). Unlike D, S can detect “uneven distribution *and* is sensitive to racial and ethnic polarization” (Fossett 2017:32; Stearns and Logan 1986). Similar to D, S can be restructured into the “difference of means framework” “where contact with whites (*y*) is based on area proportion white” (Fossett 2017:38). The difference between whites and blacks produces a separation score (Fossett 2017). In general, a separation

score below 29 is considered low, 30-44 is moderate, and above 45 is high (Fossett 2017). As shown below, the formula for S is cited and quoted from (Fossett 2017:equation section; Fox-Crowell and Fossett 2017: equation section):

$$“\ S=\overline{Y}_1-\overline{Y}_2$$

Where:

S is the separation index score

$\overline{Y}_1$ is the mean score for whites

$\overline{Y}_2$ is the mean score for blacks ”

3.6.5 Regression Standardization and Components Analyses, and Model Estimation

In this section I discuss how I use regression standardization and component analysis to determine how (a) residential outcome vary by group means and coefficients and (b) the separate and joint components that contribute to white-black segregation. Regression standardization involves white-black coefficients and white-black means on income to compute neighborhood outcomes (Fossett 2017; Fox 2014). In other words, this method generates neighborhood outcomes by manipulating white-black coefficients and means, separately. I use this method to answer two substantive questions. First, what would black neighborhood outcomes look like if they had the same distributions as whites? Second, what would black neighborhood outcomes look like if they could

convert their distributions into more residential contact with whites at the same rate as whites? Of note, this exercise not directly assessing the out-migration thesis, it does however relate to Wilson's race-specific policies in TTD. Under this hypothetical scenario, matching the white rates of return in the black regression model reflects black residential outcomes when discrimination does not exist. Matching whites' distributions in the black regression model represents black residential outcomes if an economic policy was implemented in a city. Findings from the standardization exercise allows for assessing white-black difference in "rates of returns," "difference in "distributions," and "joint impact" have in white-black residential segregation (Fossett 2017; Fox-Crowell and Fossett 2017; Fox 2014).

The first step is to obtain regression results. Once obtained, regression standardization is performed. In the past, scholars often rely on ordinary least squares regression, as cited and quoted from (Fox 2014:69):

"(a) $Y_w = B_{w0} + B_1X_{w1}$

(b) $Y_b = B_{b0} + B_1X_{b1}$

(c) $Y_b = B_{b0} + (B_{b1} * X_{b1}) + (B_{b2} * X_{b2})$

(d) $Y_b = B_{b0} + (B_{b1} * X_{w1}) + (B_{b2} * X_{w2})$

(e) $Y_b = B_{w0} + (B_{w1} * X_{b1}) + (B_{w2} * X_{b2})$

(f) $Y_b = B_{w0} + (B_{w1} * X_{w1}) + (B_{w2} * X_{w2})$"

Where equation (a) is the regression equation for whites, equation (b) is the regression equation for blacks, equation (c) is the expansion of equation (b) for blacks

with black distributions and black rates of return, equation (d) calculates the neighborhood outcomes blacks would have with whites if they had the same distributions as whites, equation (e) calculates neighborhood outcomes for blacks when they are equalized to white rates of return, and equation (f) calculates neighborhood outcomes for black when they are equalized to both whites' distributions and rates of return. The difference between (c) and (f) equals the city segregation score, D or S. For this study, the standardization equation mentioned above is not appropriate to use because neighborhood outcomes are non-linear and non-additive (see fractional regression discussion below).

For linear additive models like ordinary least squares regression, the components analysis involves inserting whites' distributions and rates of return in the black regression equation and vice versa (Jones and Kelley 1984;Fossett 2017; Fox 2014). This convenient option does not hold in the case of non-linear, non-additive neighborhood outcomes ranging from 0-1 (Fossett 2017). Values obtained by manipulating white-black ordinary least squares equation is often very close to the "mean on (*y*)" (Fossett 2017). As a result, values could fall outside of 0-1 bounds and can vary by a large amount (Fossett 2017).

Instead of ordinary least squares to model neighborhood outcomes, I use fractional regression (Kieschnick and McCullough 2003). The logic for using fractional regression is fairly straightforward: non-linear, non-additive segregation scores are bounded by 0 to 1. In the past, researchers have relied on logit transformations where the S-shaped regression curve is bounded by 0 to 1. This option becomes complicated

because it has the potential of violating the linear regression assumption of linearity and additivity, and normality. For example, if nativity, limited English language, and educational attainment all negatively and additively affect parity contact with whites for blacks, then the regression line can be taken out of bound. The logic for using fractional logit regression is as follows: "individuals are assigned scores based on whether or not their neighborhood is "at or above parity" (see Fossett 2017:90) with MSA proportion white (1) or not (0)" (Fossett 2017:97; Fox 2014).

As previously mentioned, the regression standardization and components analysis of fractional regression analyses require a more involved approach than previous studies (see Althauser and Wigler 1972; Jones and Kelley 1984). Following work by Fox-Crowell and Fossett (2017) and Fossett (2017), I calculate the "observed group means" and "standardized group means" for whites and blacks, respectively. Equations for the two observed group means below are cited and quoted from (Fox-Crowell and Fossett 2017: equation section):

" $\bar{Y}_{W_D W_R}$ = The observed white mean (the average of predicted values for whites in the model for whites)

$\bar{Y}_{B_D B_R}$ = The observed black mean (the average of predicted values for blacks in the model for blacks)"

Equations for the two standardized group means below are cited and quoted from (Fox-Crowell and Fossett 2017: equation section):

" $\bar{Y}_{W_D B_R}$ = The black mean standardized to whites' distributions (the average of predicted values for whites in the model for blacks)

$\bar{Y}_{B_D W_R}$ = The black mean standardized to whites' rates (the average of predicted values for blacks in the model for whites)"

The overall level of segregation is derived by the difference of between the observed means for whites and blacks (Fossett 2017). Again, I follow Fox-Crowell and Fossett (2017) and Fossett (2017) studies by using similar equations for obtaining the value of overall white-black segregation and the components below cited and directly quoted from (Fox-Crowell and Fossett 2017: equation section):

"

(D_R)	$\bar{Y}_{B_D W_R} - \bar{Y}_{B_D B_R}$	Rate of return component of segregation
(D_D)	$\bar{Y}_{W_D B_R} - \bar{Y}_{B_D B_R}$	Distributions component of segregation
(D_J)	$D - (D_D + D_R)$	Joint impact component of segregation
(D)	$\bar{Y}_{W_D W_R} - \bar{Y}_{B_D B_R}$	Total difference"

In sum, findings from the standardization and components analyses allow me to directly measure hypothesis 3—whether the role of income is increasing or not for white-black group differences in overall level in segregation over time.

3.7 Aggregate-Level Analysis

3.7.1 Description of Analysis

In this section, I discuss how I measure residential unevenness and exposure patterns within and between whites and blacks across metropolitans over time. Along with assessing change over time, I examine variations of segregation by measure and region over time. Examining unevenness and exposure scores within and between whites and blacks at the metropolitan area addresses the out-migration thesis in the following ways:

(1) Indicates whether middle income blacks are living in metropolitans with more unevenness and less exposure to poor blacks over time.

(2) Shows whether middle income blacks are living in metropolitans with less unevenness and more exposure to whites over time.

3.7.2 Metropolitan Segregation by Race and Income Quintiles

In this analysis, the independent variable is race by income and the dependent variables are unevenness and exposure at the metropolitan-level in 1960 and 2000. Race by income consists of whites and blacks by family income quintiles that represents 20% of the population. The first quintile represents the poorest fifth of the population while

the fifth quintile represents the wealthiest population. Unevenness and exposure measures are computed by race and income quintiles for group comparisons across metropolitan areas over time. In this analysis, the first and second quintiles are considered poor and the remaining quintiles represent the middle class. For both research questions, I measure the unevenness and exposure scores in 1960 and 2000.

To measure the amount of unevenness and exposure middle income blacks have to poor blacks and to whites at the metropolitan-level, I use the dissimilarity index, separation index, and P^* respectively. The dissimilarity index is a widely used measure that represents the segregation dimension of "unevenness" (Massey and Denton 1988, 1993). It measures the proportion of a group that would have to move from one neighborhood to another to restore even distribution in a metropolitan area (Iceland and Scopilliti 2008). Along with the dissimilarity index, the separation index is used to measure unevenness at the metropolitan-level. The resulting formulas for the dissimilarity and separation indices are below and cited and quoted from (Fossett 2017:45, n.d.; Massey and Denton 1988):

"$D = (1/TPQ)\cdot\Sigma t_i(p_i - P)$

$S = (1/TPQ)\cdot\Sigma t_i(p_i - P)^2$"

"Where "T" represents whites (w) and blacks (b) in a metropolitan area. "P" and "Q" are metropolitan proportion white and black (P= W/T and Q= B/T). "t_i" represents whites (w_i) and blacks (b_i) for an area. "i" is the proxy for a neighborhood (e.g., census tract), and $p_i = w_i/t_i$ is proportion white for the neighborhood. The minimum and

maximum value for D and S are 0 and 1, 0 for no segregation and 1 for complete segregation" (Fossett 2017:240).

Group exposure or contact by income quintiles is computed at the metropolitan level. P^* is the segregation dimension of exposure and measures the extent to which "two groups must physically confront one another by virtue of sharing a residential area" that is relative to city group proportions (Lieberson 1980; Massey and Denton 1988:287). Note that unevenness and exposure indexes are related but measure two different things: "exposure measures depend on the relative sizes of the two groups being compared, while unevenness measures do not" (Massey and Denton 1988; U.S. Census Bureau 2000:120). P^* ranges from 0-1 or 0-100, 0 is no exposure and 1 (or 100) is complete exposure. P^* is included in this study because "blacks can be distributed throughout a neighborhood but have minimum exposure to whites at the same time" (Blau 1977; Massey and Denton 1988:287). Moreover, the out-migration thesis seems to relate more with levels of neighborhood exposure than unevenness. The resulting formula for P^* are below and cited from (Lieberson 1980:Equation Section):

$$_{X}P_{y} = \sum\left[\left(\frac{p_i}{P}\right) * \left(\frac{q_i}{t_i}\right)\right]$$

"Where "P" is the number of whites in the metropolitan area. "p_i" and "q"$_i$ are the number of whites and blacks in a neighborhood (i.e. census tract) and is the pairwise population in the same neighborhood" (Lieberson 1980:equation section).

3.7.3 Variations between the D and S at the Metropolitan Area

Prior literature characterizes the relationship between the dissimilarity index and the separation index as related but yet distinct (Fossett 2017; James and Taeuber 1985; Stearns and Logan 1986; White 1986; Zoloth 1976). As mentioned, the dissimilarity index measures unevenness while the separation index measures "unevenness *and* senses ethnically polarized neighborhoods" (Fossett 2017:32, n.d.). Emerging literature argues that relying only on the dissimilarity index has potential implications for segregation analysis (Fossett 2017). In other words, the dissimilarity index may reveal half of the story—which leads to substantive concerns about how we use scores as a measure of social and economic inequalities (Fossett n.d.; Massey and Denton 1993). Most importantly, this may have broader implications for only using dissimilarity index to test the out-migration thesis—considering blacks (regardless of income status) disproportionately live in homogeneous neighborhoods. This study examines white-black metropolitan segregation using the dissimilarity *and* separation indices over time. Following the work of Fossett (2017), metropolitans that register a high score on the dissimilarity and separation indices follow the pattern of "prototypical[2]" segregation (see Fossett 2017:78). Metropolitans that register a high score on the dissimilarity index and

[2] Prototypical segregation refers to "segregation patterns with metropolitan areas with high scores on D (74 and higher) and high scores on S" (45 and higher) (Fossett 2017:78).

a low score on the separation index follow the pattern of "dispersed displacement[3]" (see Fossett 2017:78).

3.7.4 Region

There is considerable regional variation in white-black segregation over several decades (Farley and Frey 1994; Frey 2015; Logan and Stults 2011; Wilkes and Iceland 2004). In the South, white-black segregation has changed over time as a result of social and economic changes. At its highest, whites and blacks did not live in close proximity due legal (e.g., restrictive housing covenants) and extra-legal (e.g., redlining) discrimination. Post-Civil Rights, white-black segregation in the South continues to decline due to ecological changes (Emerson 1994; Farley and Frey 1994; Roof, Valey, and Spain 1976). For instance, Farley and Frey (1994) find that relative minority group size and older metropolitans are both negatively associated with segregation levels for Southern cities. As it relates to the West, several researchers argue that white-black segregation remains low due to large multiethnic populations (Clark 1992; Frey and Farley 1993; Massey and Denton 1993). Some suggest that metropolitan areas with large Asian and Hispanic population "buffer" the white-black divide, thereby reducing overall segregation (Frey and Farley 1996; Glaeser and Vigdor 2001; Iceland 2004). To date, segregation in the Northeast and Midwest remains high. Possible factors that drives this

[3] Disperse displacement refers to "segregation patterns with metropolitan areas with high scores D (74 and higher) and low scores on S (44 and lower)" (Fossett 2017:78).

effect are the decentralization and globalization of manufacturing jobs. Cities such as Detroit, Cleveland, and Pittsburgh were once hubs for economic prosperity (Wilson 2008), yet in late 1970s and 1980s they experienced an economic downturn (U.S. Census Bureau 1998; Wilson 2008). In this study, metropolitan segregation scores are aggregated to region specific areas: Northeast, West, South, and Midwest.

Southern and Midwestern regions are further divided into subareas for additional segregation computation. Subareas in the Southern region include Confederate states, Census South, and Jim Crow states. Confederate states represent states that were slave states during the Civil War. Census south states reflect states that are designated by the Census Bureau as the South. Jim Crow states are states that followed de jure segregation. In the Midwest, metropolitan areas are subdivided into Rustbelt and non-Rustbelt areas. In this study, a metropolitan area is considered a Rustbelt if they are a part of the Census Midwest and if the durable goods industry sector is at or exceeds the national-level. Using data from the U.S. Census State and Metropolitan Area Data (U.S. Census Bureau 1991), percent personal income earrings from manufacturing jobs in the MSA in 1988 are generated. Metropolitan areas that are at or exceed the national level of 21.8 percent are included in the analysis. As previously mentioned, several metropolitan areas experienced an economic downturn during the 1970s and 1980s, which resulted in a decline in the durable goods industry for several cities. Since the dataset captures post-downturn, I also included cities that are historically considered as a Rustbelt but has low percent personal income earrings from the manufacturing, such as Philadelphia and Pittsburgh.

In sum, the primary aims of this analysis are twofold. First, document how white-black segregation changes and how it varies region over time. Second, analyze how white-black segregation varies by traditional (i.e., Northeast, Midwest, South, West) and non-traditional (i.e., Confederate states, Census South states, Jim Crow states) regions over time. Region includes the following states and metropolitans:

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.

Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Confederate South: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia.

Census South: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia, Delaware, District of Columbia, Maryland, West Virginia, Kentucky, and Oklahoma.

Jim Crow South: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia, Delaware, District of Columbia, Maryland, West Virginia, Kentucky, Oklahoma, Kansas, and Missouri.

Rustbelt: Akron OH; Cleveland OH; Dayton OH; Pittsburgh PA; Canton OH; Chicago IL; Columbia OH; Columbus OH; Detroit MI; Flint MI; Gary IN; Harrisburg PA; Philadelphia PA; Toledo OH; Saginaw MI; St. Louis MO; Youngstown OH

4. INDIVIDUAL-LEVEL EMPIRICAL ANALYSIS

The purpose of this chapter is to empirically examine the individual-level residential outcomes of middle income blacks over time. Each section of this chapter focuses on strong and weak components of Wilson's hypothesis: (1) over time, middle income blacks are living in higher income neighborhoods, (2) over time, middle income blacks experience more contact with whites (at various income levels) and (3) over time, the importance of income for black contact with whites increases. The chapter concludes with a summary of findings.

4.1 Higher Income Neighborhoods

Table 3 and Table 4 show the descriptive statistics of tract mean income attainment for whites and blacks by income in 1960 (Table 3) and 2000 (Table 4). Descriptive results are grouped by census regions: Northeast, Midwest, and South. In both periods, neighborhoods in the South comprise most of the cases while the Northeast makes up the least. Among the (unweighted) observations in the analysis, on average whites live in higher income neighborhoods compared in blacks in 1960 and 2000. Focusing on the percent ratios of the means over time, tract mean income decreases from 65.74 percent to 59.12 percent in the Northeast. In the Midwest, percent ratios of tract mean income marginally decreases from 61.66 percent to 61.41 percent over time. In the

South, percent ratios of tract mean income increase from 58.65 percent in 1960 to 67.61 percent in 2000.

Tables 23 and 24 report the results for neighborhood SES for whites and blacks by income in 1960 (Table 23) and 2000 (Table 24). By race, whites live in higher income neighborhoods in both periods. White-black absolutes differences in neighborhood SES are more noticeable in 2000 compared to 1960. On average, white-black differences can be $20,000 or higher in several metropolitan areas such as Chicago (an absolute difference of $29,003), Omaha (an absolute difference of $20,362), Philadelphia (an absolute difference of $27,274), and Atlanta (an absolute difference of $20,842) in 2000. There are mixed results regarding relative comparisons in tract mean income attainment. Several metropolitans experience a decline in white-black relative comparison from 1960 to 2000. Over time, blacks in Chicago are living in tracts with lower mean income (57.0 in 1960 to 54.57 in 2000). Additionally, blacks in several metropolitan areas live in neighborhoods with higher mean income over time, such as blacks Augusta (58.10 in 1960 to 74.57 in 2000).

Figures 2-6 visually depict variations in neighborhood SES by race and income for select metropolitan areas in 1960 and 2000. If Wilson's hypothesis is correct, I expect little variation in neighborhood SES as income increases for blacks in 1960. However as black income increases, I expect that neighborhood SES will be higher in 2000. As anticipated, across all metropolitan areas there is little to no variation in neighborhood SES as black income increases in 1960. Again, this finding is not surprising considering Wilson hypothesized that blacks by all income levels are living in

close proximity to each other in 1960. In 2000, blacks with higher income are living in more affluent neighborhoods compared to the previous period. This is observable by the slight increase of the mean value of neighborhood SES as black income increases. These results are more pronounced in Atlanta and Chicago where middle income blacks are living in more stratified neighborhoods in 2000. Altogether, I find limited but supporting evidence that middle income blacks are living into higher income neighborhoods over time.

4.2 Parity Contact with Whites in 1960 and 2000

Tables 5 and 6 show the descriptive statistics for white-black average parity contact with whites in 1960 (Table 5) and 2000 (Table 6). Similar to the previous set of descriptive statistics, the (unweighted) findings are grouped by census regions. The results show that on average, blacks experience marginal parity contact with whites in 1960 and low-to-moderate parity contact with whites in 2000. Black parity contact with whites significantly increases across regions over time. For instance, black parity contact with whites in the South increased by 0.09 or 9 points over time.

Tables 25 and 26 present average white-black parity contact with whites and overall segregation in 1960 and 2000. Income is controlled for in both periods. The difference of means approach is used and consist of white-black comparisons where "area proportion white is at or above parity with the city white proportion registers a binary score of one (1) and zero otherwise" (0) (Fossett 2017:90-97). The mean score for

each group comparisons is computed where the "differences in average scores additively determine overall segregation" for each city in 1960 and 2000 (Fox 2014:59; Fossett 2017:162). Of note, segregation scores presented in this table and others are predictions and may slightly differ from observed neighborhood outcomes (e.g., Table 37). Means are computed at the individual level and weighted by the household (where households are treated as an individual case) for the group of interest. A household has to live in a metropolitan area with 95 percent of the nonwhite population as black and 95 percent of the white population as non-Hispanic in 1960. The same metropolitan areas that meet these criteria are used in 2000.

As expected, average black parity contact with whites is low across all metropolitan areas in 1960. Monroe is the most extreme case for black average parity contact with whites (0.02) whereas Greensville (0.37) is less extreme in 1960. The 1960 results for Monroe and Greenville can be interpreted as follows: on average, 2 and 37 percent of blacks live in neighborhoods "at or above parity" on percent white, respectively. The black parity contact result for Greenville is interesting considering this is a region with a history of racial hostility. In other words, I would not expect for a community located in the "traditional south" to have moderate black parity contact with whites in 1960 (Loewen 2005; Fossett 2017).

In 2000, black parity contact with whites increases across all metropolitan areas. For example in Raleigh, 33 percent of blacks live in neighborhoods "at or above parity" on percent in 2000—a net difference of 18 percentage points from 1960 to 2000. Not surprising, city-level segregation scores as indicated by the dissimilarity index show that

white-black segregation is higher in 1960 compared to 2000. In addition, sharp declines in white-black segregation are observed across several metropolitan areas from 1960 to 2000. A detailed discussion about city-level segregation is in Chapter 5.

While the main focus in this analysis is on black parity contact with whites, Tables 25 and 26 also show white parity contact with whites in 1960 and 2000. In Tables 25 and 26, whites are exceedingly living in "above parity" neighborhoods in 1960 and 2000. Stated differently, whites are living in homogeneously white neighborhoods in both periods. Over time, moderate declines in white parity contact with whites are seen across most metropolitan areas. Slightly larger declines are observable in Wilmington (12 percentage points), Greenville (14 percentage points), and Norfolk (16 percentage points) over time.

4.3 Average Contact with Whites in 1960 and 2000

Table 7 and 8 present the descriptive statistics results for "average white-black contact" (see Fossett 2017) with whites in 1960 and 2000. Similar to the findings in Tables 4 and 5, on average, blacks experience marginal contact with whites in 1960 and low-to-moderate contact with whites in 2000. As expected, white contact with whites declines over time. Not expected, black contact with whites declines in the Northeast over time.

Tables 27 and 28 contain results for average white-black contact with whites and overall segregation in 1960 and 2000. Similar to the previous analysis, income is

controlled for in both periods. In addition, the difference of means approach is used and the value of the separation index score "represents white-black difference in average contact with whites" (Fossett 2017:34). Compared to the dissimilarity index, the separation index registers average contact with whites (Fossett 2017). The difference between the white and black group means "additively determine the separation index for the metropolitan area" (Fox 2014:59; Fossett 2017:162).

The results in Table 27 document that black contact with whites is low-to-medium across all city comparisons in 1960. The highest level of black group means is seen is Canton (0.62) and Greensville (0.69). The black mean contact value of 0.62 in Canton can be interpreted as follows: on average, 62 percent of the black households experience neighborhood contact with whites in 1960. In the cases where black group means take on a high value, one can argue that blacks are living in predominately whites neighborhoods in 1960. This is finding indicates that the social dynamics for white-black segregation in Canton is very different from the social dynamics in other metropolitan areas such as Detroit. The lowest level of black group mean is seen is Monroe (0.14), Chicago (0.17) and Jacksonville (0.19). The black mean contact value of 0.17 in Chicago means that on average, 17 percent of black households experience neighborhood contact with whites in 1960. This finding is not surprising considering the historic white-black race relations in Chicago. Turning to 2000, the results in Table 28 indicate medium-to-high black contact with whites across city comparisons. The highest level of black contact is seen in San Antonio (0.74) and Canton (0.69). The lowest level of black contact is seen in Detroit (0.17), Gary (0.21), Chicago (0.23) and New York (0.24).

Interestingly, there are a few cases where black group means decline from 1960 to 2000, such as Greenville (0.69 vs. 0.53).

In addition to average black contact with whites, Tables 27 and 28 show average white contact with whites in 1960 and 2000. Average white contact with whites is pronounced in both periods. However, several cases have large declines over time, such as Greenville (a net difference of 0.17) and Norfolk (a net difference of 0.14).

4.4 White-Black Contact with Whites by Income 1960 and 2000

Figures 7-16 presented in this section show white-black parity contact with whites and white-black contact with whites in 1960 and 2000. Using family income by race as an indicator allows for a direct assessment of hypothesis 2: over time middle income blacks are experiencing more contact with whites. Households that have family income that reaches or exceeds the metropolitan average are designated as the middle class. Also note that the figures show results for the following metropolitan areas: Atlanta, Charleston, Chicago, Pittsburgh, and Rochester. Before discussing the results first, however, I review several elements of the figures and hypothesis 2. The figures are composed of white (blue) and blue (red) fractional regression lines per metropolitan areas in 1960 and 2000. The X-axis is logged family income and the Y-axis is parity contact with whites (or contact with whites). If hypothesis 2 is observable, one would expect differing patterns for blacks in 1960 and 2000. In 1960, it is anticipated that income would have little to no effect for black parity and contact with whites. In other

words, the black fractional regression line will be uniformly flat across all income categories. As theorized by Wilson (1987), “in the 1940s, 1950s, and 1960s blacks regardless of income status resided in the inner-city, albeit on different streets” (7). In 2000, it is expected that as income increases, black parity contact with whites increases. In other words, when blacks reach or exceed middle income status, they will experience more contact with whites than other blacks in 2000—thus a steeper regression line for blacks. Over time, the difference between white and black group means (or the space between the white and black regression lines) should be narrower over time. Note that the difference between white-black means “additively determine the white-black dissimilarity and separation indices for the city,” respectively (Fox 2014:59; Fossett 2017:162).

4.4.1 White-Black Parity Contact with Whites by Income 1960 and 2000

As shown in Figures 7 through 11, middle income blacks experience little to slightly more parity contact with whites compared to poor blacks in 1960. I am finding an interesting pattern that blacks that live in cities with high white-black segregation such as Chicago and Pittsburgh experience low parity contact with whites. Focusing on Chicago (Figure 10), I see that as income increases by .50 units on the log scale, black contact with whites marginally increases. Moreover, I find a strikingly different pattern for a handful of metropolitan areas such as Atlanta (Figure 8)—as income increases, blacks experience less parity contact with whites. In other words, poor blacks experience

more contact with whites than middle income blacks. This pattern may reflect an occupational effect where more poor blacks live in census tracts "at or above parity" on percent white because they are employed as domestic labor in white households. In other words, low income blacks live in households that are in close proximity to white employers. This pattern is commonly referred as "backyard segregation" (Demerath and Gilmore 1954; Grigoryeva and Ruef 2015; Johnson 1970; Lieberson 1980; Taeuber and Taeuber 1965). Metropolitan areas where middle income blacks experience less parity contact with whites include Atlanta, Charlotte (not shown), Dallas (not shown), Memphis (not shown) and Waco (not shown). In a limited number of metropolitan areas, middle income blacks experience more parity contact with whites. Comparing the lowest and highest log family income by neighborhood outcomes in Rochester, less than 10 percent of low income blacks live in neighborhoods "at or above parity" on percent white whereas nearly 40 percent of middle income blacks live in neighborhoods "at or above parity" on percent white. This finding suggests that some middle income blacks are living in integrated spaces—a finding not expected in 1960. A similar finding is observable in Hartford (not shown).

In 2000, I find that middle income blacks experience more parity contact with whites across all metropolitan areas. In other words, as income increases, the black regression line shifts upward, signaling middle income blacks are living in neighborhoods "at or above parity" on percent white. Areas with pronounced black parity contact with whites in 2000 include Raleigh (not shown), Charleston, Augusta (not shown), Macon (not shown), and Waco (not shown). In contrast, Chicago, Gary (not

shown), and Detroit (not shown) are areas with minimal change for black parity contact over time. This finding is not surprising since these cities are highly segregated. I also find that areas where middle income blacks experience little parity contact with whites in 1960 are now positively associated with parity contact with whites in 2000.

4.4.2 White-Black Average Contact with Whites by Income 1960 and 2000

Figures 12 through 16 presented in this section show white-black average contact with whites by income in 1960. Locational attainment is measured by neighborhood proportion white. If Wilson's prediction is correct, I would expect that middle income blacks live in neighborhoods with little to no contact with whites in 1960. The difference between predicted outcomes for whites and blacks "additively determines the separation index" (Fox 2014:59; Fossett 2017:162). Once again, three clear patterns emerge. First, a limited number of middle income blacks live in neighborhoods with a higher percentage of whites in a census tract. Second, blacks (regardless of income) live in neighborhoods with a small but uniform percentage of whites in a census tract. Third, as income increases middle income blacks live in neighborhoods with a lower percentage of whites in a census tract in comparison to lower income blacks. Regarding the first pattern, several neighborhoods show that middle income blacks experience more contact with whites compared to low income blacks. This pattern is observable is Rochester, Hartford (not shown), Greenville (not shown), Akron (not shown), and Canton (not shown). Interestingly, low income blacks experience a great deal of contact with whites in these

cities. In other words, blacks (regardless of income) do not experience disparities in residential contact with whites in these areas. However, it is over-simplistic to assume that residential contact with whites reduces economic and social inequities 1960. The takeaway is that some blacks are living in relatively integrated neighborhoods and income raises black average residential contact with whites in a limited number of cities. The second pattern, low black contact with whites is observable across several metropolitan areas. Again, cities with high white-black segregation scores show low contact, including Gary (not shown), Detroit (not shown), and Chicago. Despite the black regression line being relatively flat, the slope of the line slightly rises when black income increases. This finding suggests that even in the most segregated cities, income increases individual-level black contact with whites. The final pattern, reduced black contact with whites is notable across a handful of metropolitan areas. Yet again, cities such as Raleigh (not shown), Atlanta, Charlotte (not shown), and Waco (not shown) demonstrate similar declines for black contact with whites. Again, I would speculate that this may be a result of early occupational spatial arrangements.

In reviewing Figures 12 through 16 for 2000, I find similar results to the analysis of black parity contact with whites in 2000. Once again, middle income blacks experience more contact with whites across all metropolitan areas in 2000. As income rises, the highest level of black average contact with whites can be found in Wilmington (not shown), Austin (not shown), Waco (not shown), and San Antonio (not shown). By far, the lowest level of black average contact with whites (when income rises) is in Gary (not shown), Detroit (not shown), and Chicago. Note that the distance between the white

and black regression lines is narrower in 2000 compared to 1960—signaling that when individual scores are aggregated, white-black segregation is lower over time.

Results from Figures 7-16 visually demonstrate neighborhood outcomes of whites and blacks by income in 1960 and 2000. For both years, neighborhood attainment is measured by parity contact with whites and average contact with whites. Despite two different neighborhood outcomes, the findings are consistent with Wilson's hypothesis. In 1960, middle income blacks are living in neighborhoods where they experience little to no contact with whites. This finding echoes Wilson's prediction that "lower-class, working-class and middle income black families all lived more or less in the same communities…" (Wilson 1978:7) . In 2000, I find that middle income blacks are living in neighborhoods where they experience more contact with whites over time. Again, this finding that supports Wilson's argument that to some extent, middle income blacks have "increased their efforts to move from concentrated black poverty areas to more desirable neighborhoods in the metropolitan area, including white neighborhoods" (Wilson 2009:34).

4.5 Regression Standardization and Components Analyses

Tables 29-36 presented in this section show standardization and components analyses results of black parity contact with whites and black contact with whites in 1960 and 2000. To review, the application of regression standardization involves using white-black coefficients and means on income to compute neighborhood outcomes, separately. Conducting this exercise answers several substantive questions. First, what would black neighborhood outcomes look like if they had the same distributions as whites? Second, what would black neighborhood outcomes look like if they could convert their distributions into more residential contact with whites at the same rate as whites? Components analysis consists of examining how group differences of a particular factor (i.e. group rates of return, group distributions, and joint impact) determine overall segregation.

4.5.1 Standardization on Group Distributions and Group Rates of Return—Dissimilarity Index

Tables 29 and 30 show 1960 and 2000 results of the regression standardization equations. Following the work of Fox-Crowell and Fossett (2017), the results are displayed as follows: "(1) white distributions and white rates of return, (2) black distributions and white rates of return, (3) white distributions and black rates of return and (4) black distributions and black rates of return" (Fox-Crowell and Fossett

2017:Standardization section). Overall segregation is based on the dissimilarity index. I find that inserting white distributions into the black equation increases contact with whites for blacks in 1960 and 2000. For example, black group means in Charleston in 1960 increases from 0.16 to 0.19 when swapping black distributions with white distributions in the fractional regression. However, using white rates in the black equation significantly increases contact with whites for blacks in 1960 and 2000. For instance, black group means in Charleston in 1960 increases from 0.19 to 0.75 when applying white rates in the black fractional regression. By far, the largest change is when applying white rates to the black fractional regression, suggesting that blacks are unable (at the same rate as whites) to convert income into residential outcomes. In every city in both periods, the effect of substituting black rates with white rates is large with the exception of Raleigh in 1960 and Waco, Greenville, Wilmington and Charleston in 2000. It is clear that rates of return are a large contributor of residential disparities for blacks.

4.5.2 Standardization on Group Distributions and Group Rates of Return—Separation Index

In this section I review standardization results where overall segregation is based on the separation index in 1960 and 2000. In Tables 31 and 32, a clear pattern emerges when white distributions and white rates of return are applied separately to the black regression model in both periods. Again, swapping black distributions with white distributions, black group means are raised or remain the same for the majority of cities in 1960 and 2000. For instance, replacing the black distributions to white distributions in Augusta only raises the proportion of black contact with whites from 0.27 to 0.31 in 1960. The same can be seen in 2000, the proportion of blacks that experience contact with whites increases from 0.47 to 0.50. These results imply that even if an economic policy was implemented in a city, blacks are unable to translate matched income into more contact with whites in 1960 and 2000. Yet inserting white rates in the black equation significantly raises black contact with whites in 1960 and 2000. This effect is evident for several cities. However, there are several cities where this effect is not large in 1960 and 2000. In Greenville, black contact with whites (when the black equation is unaffected) is 0.69 in 1960. Manipulating white-black coefficients and means in the Greenville equation slightly raises black contact with whites in 1960. This would suggest that blacks in Greenville have a good deal of residential contact and low segregation scores. It is clear that rates of return are a large contributor to overall segregation patterns based on the separation index. Across time, this effect is still observable.

4.5.3 Components Analyses of Parity Contact with Whites and Average Contact with Whites, 1960 and 2000

For each metropolitan area in both periods, the values of the dissimilarity and separation indices are decomposed to separate and joint contributions. The component analyses for each city based on the dissimilarity index in 1960 and 2000 are presented in Tables 33 and 34. The component analyses for each city based on the separation index in 1960 and 2000 are presented in Tables 35 and 36.

Results for the components analyses for the dissimilarity and separation indices are presented in the following manner (1) "group distributions", (2) "group rates of return", (3) "joint impact", and (4) "total difference" (Fox-Crowell and Fossett 2016; Fox 2014; Fox-Crowell and Fossett 2017:Equation section). It should be noted that the summation of distributions, rates of return, and joint impact equals the segregation score.

Rates of return make up a great deal of the contribution to overall white-black segregation based on the dissimilarity index in 1960 and 2000. For instance, 77 percent of group rates of return account for the segregation score in Chattanooga in 1960. Not surprising, cities with high group rates of return also register high segregation. This is further supported by the large percentage that group rates of return have on overall segregation (or total difference) compared to percentage that group distributions have on overall segregation in 1960 and 2000. In addition, the effect of group rates of return is robust across time. For instance, Chicago, Detroit, and Gary register some of the highest

group rates of return and highest segregation scores in both periods. Over time the magnitude of group rates of return is not as large in 2000 compared to 1960, however, the effect is still large.

With regards to group distributions, contributions to overall segregation are not as large compared to group rates of return in 1960 and 2000. For instance, when whites and blacks in Greensville are matched on group distributions, the effect reduces the segregation score by 7 points. This effect is shown better through percentage of group distributions, where the proportion reflects the amount that income accounts for overall segregation. I find that 17.64 percent of group distributions can be attributed to total group difference in Greensville in 1960. Over time, percentage of group distributions significantly increases—suggesting that income is contributing more to overall segregation over time.

Over time, a white-black difference in group distributions increases across most metropolitan areas. For instance, in Rochester the effect of group distributions reduces the dissimilarity score from 4 points in 1960 to 10 points in 2000—a net change of 6 points. This pronounced pattern is also observable in Greensville. Despite the white-black difference in rates of returns making the largest contribution to overall segregation in both periods, however results for group distributions should not be interpreted as small. Instead, change over time for group distributions suggest that income has a growing impact on black residential outcomes over time—a finding supporting hypothesis 3.

The joint impact is a term that is interpreted as the moderating component, dependent on which term is used first (Fox 2014). For instance, when whites and blacks in 1960 in Raleigh based on the dissimilarity index are matched on group distributions decreases the score by 7 points, the effect of equalizing on rates of return is moderated by 47 points because the two components do not operated independent of each other.

One final exercise is the components analysis of average contact with whites based on the separation index in 1960 and 2000 (see Tables 35 and 36). Again a clear pattern emerges where rates of return make up a great deal of the contribution to overall segregation in 1960 and 2000. The effect of white-black differences for group distributions is small in both periods, however it increases in several metropolitan areas over time.

In short, the regression standardization and components analyses suggest that the largest contribution to overall segregation (based on the dissimilarity and separation indices) is rates of returns in 1960 and 2000. These findings would suggest that race is the largest factor that determines white-black segregation. Despite these findings, distributions and joint impact are not inconsequential. Over time, the magnitude of group distributions on overall segregation doubles and in some cases triples in several metropolitan areas. This finding supports the "weak version" of out-migration thesis; income has an increasing role in black lives over time.

5. AGGREGATE-LEVEL EMPIRICAL ANALYSIS

This chapter examines white-black segregation by income across metropolitan areas in 1960 and 2000. This analysis involves unevenness and exposure computations within and between blacks and whites in both periods. This analysis tests two research questions that directly assess the out-migration thesis. First, are middle income blacks living in metropolitans with more unevenness and less exposure to poor blacks over time? Second, are middle income blacks living in metropolitans with more evenness and more exposure to whites (regardless of income) over time? For the sake of brevity, the results will primarily focus on Atlanta, Charleston, Chicago, and Pittsburgh in 1960 and 2000. This chapter also presents results for white-black segregation by two measures of unevenness (dissimilarity and separation indices) over time and white-black segregation (dissimilarity index) by region over time. This chapter concludes with a summary overview of the main findings.

5.1 White-Black Segregation by Income Quintiles

Tables 9-14 show the descriptive statistics for white-black segregation and exposure by the dissimilarity index, separation index, and P^* in 1960 and 2000. Descriptive results are presented in matrices where a cell represents a quintile comparison. Missing cell data in the chart reflect structural (on the diagonal) or

methodological reasons. Note that results for white-black intragroup comparisons are also presented and highlighted by a square.

Table 9 shows descriptive statistics (means and standard deviations) of dissimilarity index scores for whites and blacks by income quintiles in 1960. On average, segregation is high across all white-black comparisons. When matched and unmatched by quintile groups, white-black segregation scores remain high. Comparing total whites to black income quintiles, segregation scores increase as black income increases. A similar pattern is observable when comparing total blacks to white income quintiles. Among racial groups, dissimilarity scores incrementally increase as income increases. For instance, the dissimilarity score between whites in the 1st quintile and whites in the 2nd quintile is nearly 27 points lower than the dissimilarity score between whites in the 1st quintile and whites in the 5th quintile. A similar pattern is also noticeable for blacks in 1960.

Table 12 presents descriptive statistics of dissimilarity index scores for whites and blacks by income quintiles in 2000. On average, I find that segregation is lower across all income quintiles over time. This is effect is noticeable by the 12-point decrease in segregation between total whites and total blacks from 1960 (Table 9) to 2000 (Table 12). Across most quintile group comparisons, segregation scores incrementally get lower as income increases in 2000. This pattern was not previously observable in 1960. However, among racial groups, black intragroup segregation increases while white intragroup segregation slightly increases across metropolitan areas over time.

Table 10 shows descriptive statistics (means and standard deviations) of separation index scores for whites and blacks by income quintiles comparisons in 1960. On average, separation index scores are moderate-to-high across all white-black comparisons. Unlike the previous descriptive analysis, white-black segregation decreases as black income increases. Within racial groups, the separation index score increases as income increases for blacks and whites respectively.

Table 13 present descriptive statistics of separation index scores for whites and blacks by income quintiles comparisons in 2000. Similar to Table 12, Table 13 reports that on average segregation between whites and blacks decreases while black intragroup segregation increases across metropolitan areas in 2000.

Table 11 and Table 14 show descriptive statistics of relative contact (P^*) by white-black income quintiles in 1960 (Table 11) and 2000 (Table 14). Relative contact "expresses the surplus or deficit contact as a percentage of its maximum possible value under even distribution" (Fossett n.d.: Equation Section). Descriptive results of black exposure to whites by income can be found in the lower left corner of the table quadrant. Note that the upper right quadrant reports white exposure to blacks by income. Also, intragroup comparisons are highlighted by a square.

Comparing blacks by income to total whites, on average, relative contact deficit incrementally increases across all metropolitan areas in 1960. Among whites and blacks by income quintiles, relative contact is in a deficit. For instance, a relative contact deficit score between blacks in the 3rd quintile and whites in the 3rd quintile is -55.4, indicating that 55.4 percent of contact is below what is expected under even distribution across

metropolitan areas (Fossett n.d.). Among blacks, relative contact is in a surplus across metropolitan areas in 1960. This means that contact is above what is expected under even distribution (Fossett n.d.). I find that middle income blacks are experiencing a vast amount of their contact with poor blacks in 1960. For instance, a relative contact surplus score 19.4 of between blacks in the 1st quintile and blacks in the 4th quintile shows that contact is 19.4 percent above what is expected under even distribution across metropolitan areas (Fossett n.d.). In 2000, I observed declines in relative contact across all group comparisons. Regarding total black and total white contact, relative contact is in a deficit, but declining over time. Among whites and blacks by income quintiles, relative contact is also in a deficit but not to the same extent at 1960. Finally, black relative contact with other blacks is still in a surplus but not to same extent as 2000. For instance, the relative contact surplus between blacks in the 1st quintile and blacks in the 5th quintile decreases from 18.6 percent in 1960 to 7.3 percent in 2000.

5.1.1 Black Intragroup Segregation by Income in 1960 and 2000

Table 15 shows dissimilarity results for black intragroup segregation by income in 1960 and 2000. Results indicate that segregation scores are low among blacks regardless of income in 1960. Further results show that segregation scores among two-group comparisons get incrementally higher between households in the highest and lowest income groups across metropolitan areas in 1960. For instance, in Atlanta, the dissimilarity score between blacks in the 5th quintile and blacks in the 1st quintile is

nearly 20 points higher than the dissimilarity score between blacks in the 3rd quintile and blacks in the 1st quintile. A similar pattern is noticeable across most metropolitans but not at the same magnitude. For instance, in Chicago, the dissimilarity score between blacks in the 5th quintile and blacks in the 1st quintile is nearly 7 points higher than the dissimilarity score between blacks in the 4th quintile and blacks in the 1st quintile. This finding is not surprising considering a similar pattern was found in Chapter 4. Moreover, this finding supports Wilson's argument that all blacks (regardless of income) live in close proximity to each other in the 1960s.

In 2000, black intragroup segregation by income increases across most metropolitan areas. For instance, in Atlanta, the dissimilarity score between blacks in the 3rd quintile and blacks in the 1st quintile increased by 9.21 points or 31.90 percentage points over time. Similar findings are observable across other metropolitan areas over time. Overall, these results imply that middle income blacks are less evenly distributed in poor black neighborhoods in metropolitan areas over time.

Table 16 shows separation results for black intragroup segregation by income in 1960 and 2000. Similar to the previous analysis, results demonstrate that segregation is low among all blacks in 1960. Yet, unlike the previous analysis there are not clear patterns of stratification within the black community. For some cities, such as Akron (not shown), Pittsburgh, and Chicago, segregation comparisons by quintiles get higher among blacks in the highest and lowest income groups. In cities such as Charleston, there is little variation between the two-group comparisons. For instance, in Charleston, the separation score of 4.38 between blacks in the 5th quintile and blacks in the 1st

quintile indicates low levels of "displacement that separates the two groups into areas that are polarized by class composition" in 1960 (Fossett 2017:77). I also find that black intragroup segregation increases over time, especially in Atlanta. For instance, the separation score between blacks in the 5th quintile and blacks in the 2nd quintile increased by 14.44 points or 169.01 percentage points over time.

5.1.2 Total Whites-Middle Income Blacks Segregation by Income in 1960 and 2000

Table 17 and Table18 present total whites-middle income blacks segregation results by the dissimilarity index (Table 17) and the separation index (Table 18) in 1960 and 2000. Specifically, income quintile results for middle income blacks (quintile 3rd-5th) by total whites regardless of income. The 1960 dissimilarity index results in Table 17 demonstrate that income is not advantageous to blacks in terms of city segregation. As black income increases, segregation with whites also increases across several metropolitan areas including Atlanta, Charleston, Chicago, and Pittsburgh. Nevertheless, results are consistent with Wilson's argument that middle income blacks are living in predominately black concentrated neighborhoods, which results in higher segregation scores with whites.

In 2000, declines in middle income black-total white segregation are observable across several metropolitan areas. These results signal that middle income blacks are indeed more evenly dispersed with whites over time. For instance, in Charleston, the dissimilarity score between blacks in the 5th quintile and total whites declines by 25.32

points or 37.53 percentage points over time. Even in cities that are highly segregated, I observe decreases in segregation scores over time. For example, in Chicago, the dissimilarity score between blacks in the 5th quintile and total whites decrease by 9.73 points or 11.02 percentage points.

In Table 18, the separation results show differing patterns. First, there are several metropolitan areas where separation scores start high but gradually decline to moderate levels of segregation as black income increases in 1960. Cities such as Atlanta and Chicago display this pattern. Second, there are several metropolitan areas where separation scores start moderate but gradually decline to low levels of segregation as black income increases in 1960. Cities such as Charleston and Pittsburgh demonstrate this pattern. In some metropolitan areas, blacks in the highest income quintile are more evenly distributed with whites (regardless of income) than with other blacks. For instance, blacks in the 5th income quintile in Charleston and Pittsburgh report lower separation scores between total whites than blacks in the 1st quintile (see Table 16) in 1960.

As documented with D, S demonstrates vast declines in segregation between middle income blacks and total whites by income in 2000. For instance, in Charleston, segregation between blacks in the 3rd quintile and total whites decreases by 17.92 points or 60.52 percentage points. In some cases, segregation increases between middle income blacks and total whites over time. Not surprisingly, cases that show increases in segregation are cities that also highly segregated (based on D), such as Chicago and Pittsburgh.

5.1.3 P^* Measures of Exposure for White-Black and Black Intergroup in 1960 and 2000

Tables 19-21 show P^* results for total white and total black contact (Table 19), contact between blacks in the 5th quintile and blacks in the 1st quintile (Table 20), and contact between blacks in the 5th quintile and total whites (Table 21) in Atlanta, Charleston, Chicago, and Pittsburgh in 1960 and 2000. As mentioned, exposure is a function of the demographic makeup of a city and segregation (Massey and Denton 1988; Fossett n.d.; Lieberson 1980). As a result, this analysis will determine whether actual contact is a function of demographics or if it reflects segregation (Fossett n.d.). Results are presented as followed: "(1) expected P^*, (2) observed P^*, (3) simple difference, and (4) relative contact" (Lieberson 1980:Equation section; Fossett n.d.: Equation Section). "Expected P^* is the amount of contact a given group has under even distribution" (Fossett n.d: Equation Section). "Observed P^* is the actual contact for a given group" (Fossett n.d.: Equation Section). "Simple difference is the difference between observed and expected P^*" (Fossett n.d.: Equation Section). "Relative contact expresses surplus or deficit contact as a percentage of its maximum possible value under even distribution" (Fossett n.d.: Equation Section). It is necessary to include additional measures of P^* because cross-city comparisons cannot be made only by observed contact.

If Wilson's hypothesis is correct, one would expect little variation in residential contact for blacks in 1960. In 2000, I expect that middle income blacks should experience more residential exposure with whites and less exposure with poor blacks. If

these hypotheses hold up, relative contact between total whites and total blacks, and relative contact between blacks in the 5th quintile and total whites will be in a deficit in 1960. Moreover, relative contact between blacks in the 5th quintile and blacks in the 1st quintile will be in a surplus in 1960. In 2000, I expect relative contact between total whites and total blacks, and relative contact between blacks in the 5th quintile and total whites will be in a deficit but not to the same extent as 1960. Also, relative contact between blacks in the 5th quintile and blacks in the 1st quintile will be in a deficit in 2000.

Among total white-black contact, Charleston, Mobile (not shown), and Birmingham (not shown) report the largest amount of expected contact in 1960. 30.96 percentage points in Charleston can be interpreted "as the maximum amount of contact blacks will have with whites under even distribution based on population size in the metropolitan area" (Fossett n.d.:Equation Section). Cities that report lower expected values (such as Pittsburgh) reflect lower minority group size (Fossett n.d.). In other words, "all else equal, expected contact will be higher in a city where a group's presence is larger" (Fossett n.d.: Equation Section). By observed contact, I find that results are lower than expected contact. The difference between expected and observed contact, as reported by simple difference show a contact deficit across metropolitan areas. As a result, relative contact shows deficits across metropolitan areas. The largest deficits are seen in Chicago, Atlanta, and Mobile (not shown). The relative contact deficit in Chicago can be understood as the following: "when controlling for the demographic composition of a city, total white-black contact is 80.02 percent below what is expected

under even distribution" (Fossett n.d.: Equation Section). Interestingly, cities with minimum expected and observed contact have much lower relative contact deficit compared to Chicago. This finding suggests that "large contact deficit is a product of large deviations between observed and expected contact" (Fossett n.d.:Equation Section).

In 2000, I find that expected contact increases for several cities (e.g., Atlanta, Chicago, and Pittsburgh) but declines in others (e.g., Charleston). Change in expected contact is the result of increased relative group size over time. Not surprising, observed contact increases across periods but scores do not exceed expected contact among most metropolitan areas. Additionally, relative contact deficit is demonstrated across metropolitan areas. Over time, relative contact deficit decreases across several metropolitan areas. Taking into comparison the 1960 and 2000 relative contact deficit results in Charleston, white-black contact is 26.19 percent below what is expected under even distribution—a decline of 21.13 percent over time. This suggests that all blacks are experiencing more exposure to whites now in comparison to previous years.

Among blacks in the 5th quintile and blacks in the 1st quintile, patterns of residential contact are considerably different. Regarding expected contact, I find that there is a greater share of poor blacks in Charleston compared to Atlanta, Pittsburgh, and Chicago in 1960. What is different from the previous analysis to this one is the amount of observed contact. Not surprising, middle income blacks' observed contact exceeds expected contact across several metropolitan areas. This suggest that "all else equal, segregation, not minority group size is effecting contact" (Fossett n.d.: Equation

Section). This finding is further supported by the relative surplus of contact across several metropolitan areas including Atlanta, Charleston, Chicago, and Pittsburgh. The relative surplus in Chicago can be interpreted as residential contact being 25.48 percent higher than expected under even distribution in 1960.

Results for 2000 show moderate changes in expected contact across metropolitan areas. In some cities, expected contact increased while it decreased in others. Again, this is a function of relative group size (Fossett n.d.). Regarding observed contact, I find that contact is decreasing for several metropolitan areas over time. In other words, middle income blacks are experiencing less observed contact with poor blacks over time. Results for relative contact surplus further supports this finding with lower relative contact scores across time. In Atlanta, relative contact surplus shows that "when adjusting for demographic components, contact between middle income blacks and poor black is 5.18 percent above what is expected under even distribution" (Fossett n.d.: Equation Section). Despite relative contact not directionally upholding my hypothesis for poor blacks, differences between relative contact in 1960 and 2000 provide limited support that middle income blacks experience less exposure to poor blacks over time.

With regards to observed contact, several metropolitans show that blacks in the 5^{th} quintile experience a large amount of contact with total whites including Pittsburgh and Akron (not shown) in 1960. Relative deficit results show that "when you adjust for demographic components, contact is a function of uneven distribution" (Fossett n.d.: Equation Section). Cities with the highest relative deficit include Atlanta and Chicago in

1960. With the exception of Atlanta and Chicago, expected contact remains relative stable over time. For observed contact, I find noticeable increases across metropolitan areas. Over time, the relative contact deficit decreases across metropolitan areas. This suggests that compared to previous years, contact between middle income blacks and total whites is diminishing the gap in expected even distribution (Fossett n.d.). Stated differently, contact is increasing between middle income blacks and total whites over time (Fossett n.d).

Overall the results for 1960 suggest that black income does not have much of an impact on residential contact with whites. As shown in Table 20, middle income blacks disproportionately live with low income blacks as depicted by relative contact surplus. Moreover, middle income blacks exhibit little contact with total whites in 1960 as shown by relative contact deficit. In 2000, I expected relative contact between total whites and total blacks, and relative contact between middle income blacks and total whites be in a deficit but not to the same extent as 1960. I find noticeable decreases in contact between middle income blacks and poor blacks as well as increases in contact between middle income black and total whites over time.

5.2 White-Black Segregation by Dissimilarity and Separation Indices

This section presents observed white-black segregation analyses of two measures of unevenness in 1960 and 2000. This section primarily focuses on the variations between the observed versions of dissimilarity index (Table 37) and separation index (Table 38) over time. With a few exceptions, white-black segregation for the dissimilarity index is very high across metropolitan areas in 1960. Metropolitans with the highest dissimilarity score in 1960 include Chicago (91.26), Cleveland (90.45), Dayton (90.81), and Gary (89.07). Metropolitan areas with the lowest dissimilarity score in 1960 are Greensville (40.30), Tyler (54.47), Macon (55.61) and Raleigh (55.91). A dissimilarity score can be interpreted as follows: a score of 91.26 in Chicago indicates 91.26 percent of blacks or whites would move neighborhoods in order to restore even distribution in the metropolitan area. Consistent with previous research, white-black segregation is the lowest in Southern metropolitan areas in 1960 (Roof et al. 1976; Schnore and Evenson 1966; Taeuber and Taeuber 1965; Van Valey, Roof, and Wilcox 1977). In 2000, white-black segregation declines across all metropolitan areas. Metropolitan areas with the highest dissimilarity scores in 2000 are Detroit (85.28), Gary (82.88), Chicago (79.33), and Cleveland (78.09). Areas with the lowest dissimilarity scores in 2000 include Greensville (33.08), Charleston (44.24), and Durham (44.48). As previously mentioned, gradual to large declines in white-black segregation may reflect ecological and attitudinal changes (Farley and Frey 1994). Metropolitan areas with the

largest declines[4] include Norfolk (31.29) and Orlando (31.94). For Norfolk, a decline in white-black segregation is most likely attributed to a large military community (Farley and Frey 1994). Of note, military personnel tend to live in more integrated neighborhoods, which may have an impact on metropolitan-level segregation (Burk and Espinoza 2012; Farley and Frey 1994; Fischer, Lundquist, and Vachon 2016).

Table 22 presents observed white-black segregation results using the separation index for 1960 and 2000. As mentioned, the separation index is an alternative measure of unevenness and sensitive to homogeneous neighborhoods—a limitation with the dissimilarity index. Similar to the results for dissimilarity, the average separation index score in 1960 is high. The results for the separation index can be interpreted as follows: a score of 47.20 in Charleston shows that, 47.20 percent of blacks or whites would need to move neighborhoods in order to restore even distribution in the metropolitan area. Cities with the highest separation index scores in 1960 are Chicago (80.86), Monroe (77.48), Miami (77.01) and Cleveland (76.32). Metropolitan with the lowest index scores in 1960 are Greenville (19.03), Canton (36.68) and Waco (37.94). In 2000, there are gradual to large declines for the separation index across most metropolitan areas. Cities with high separation indexes in 2000 are Detroit (75.62), Gary (71.76), Chicago (69.01) and Cleveland (66.51). Metropolitan areas with low separation indexes in 2000 are Greensville (17.19), San Antonio (18.10) and Austin (19.97). With an exception of a few cases, the dissimilarity and separation results are consistent with "prototypical segregation" in 1960 and 2000 (Fossett 2017:78).

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[4] Difference between white-black segregation in 1960 and 2000 is an absolute measure

The difference between dissimilarity and separation indices is one of several ways to measure "dispersed displacement" (Fossett 2017). As mentioned, dispersed displacement "reflects the extent to which two related but distinct measures of even distribution (dissimilarity and separation indices) respond differently to group displacement and concentration" (Fossett 2017, n.d.; Fossett 2017:78). An example of dispersed displacement is when the "dissimilarity index is high (74 and above) and the separation index is low (44 and lower)" (Fossett 2017:7). In 1960 and 2000, Canton, Rochester, and San Antonio demonstrate "dispersed displacement". For the case of San Antonio, the dissimilarity index in 1960 reflects a high value of 76.81 for the dissimilarity index but a low value of 39.83 for the separation index. This pattern is also observable in Canton (74.59 vs. 36.68) and Rochester (81.82 vs. 40.93) in 1960 and 2000 (not shown).

In contrast, "prototypical segregation reflects the extent to which related but distinct measures of even distribution respond similarly to group displacement and concentration" (Fossett 2017, n.d.; Fossett 2017:78). The "prototypical" pattern is seen in Chicago in 1960 and 2000. For instance, in Chicago, the dissimilarity index score is 91.26 while the separation index is 80.86. Results from Tables 37 and 38 demonstrate that when D and S are aligned ("high-D and high-S" see Fossett 2017:78; Fox 2014:104) and D and S are not aligned ("high-D and low-S" see Fossett 2017:78; Fox 2014:104). For testing the out-migration thesis, both the dissimilarity and separation indices are used.

5.3 White-Black Segregation by Region

Table 22 presents observed white-black segregation across regions in 1960 and 2000. Regions are defined by states and metropolitan areas. Note that the metropolitans used in this analysis are not restricted to the selection criteria as specified in section 3.2.2. Instead, all metropolitans and states that are associated with the defined region are included (e.g., 165 U.S. metropolitan areas in 1960 and 333 metropolitan areas in 2000). Segregation is measured using the dissimilarity index.

Table 22 shows that overall white-black segregation decreases from 74.97 in 1960 to 63.08 in 2000, a net change of 11.89 points or 15.9 percentage points. By region, the largest decline over time is the West (29.5 percent decrease), followed by the South (18.0 percent decrease), the Midwest (11.8 percent decrease), and the Northeast (3.6 percent decrease). This regional pattern is consistent with previous literature (Farley and Frey 1994; Frey and Farley 1993). Focusing on Southern regions, Table 22 shows that overall white-black segregation decreases from 73.72 points in 1960 to 60.34 points in 2000, a net change of 13.38 points or 18.1 percentage points. Over time, the Confederate South marginally has the largest declines in white-black segregation (18.9 percent decrease) compared to Census South (18.0 percent decrease) and Jim Crow South (17.6 percent decrease).

Table 22 also present results for Rustbelt and non-Rustbelt metropolitan areas in 1960 and 2000. Over time, white-black segregation in Rustbelt MSAs increase from 74.41 points in 1960 to 75.51 points in 2000, a net increase of 1.1 points or 1.5

percentage points. In contrast, white-black segregation in non-Rustbelt MSAs decrease from 73.03 in 1960 to 61.31 in 2000, a net change of 11.72 or 16.0 percentage points.

6. DISCUSSION AND CONCLUSION

The central purpose of the research presented in Chapters 4 and 5 is to document and further understand black residential outcomes in 1960 and 2000. Chapter 4 focuses on racial differences in individual locational attainment where neighborhood outcomes are assessed by mean tract income and contact with whites. Predicted outcomes for contact with whites are used to assess how segregation varies between whites and blacks through regression standardization and components analysis. Chapter 5 examines segregation within and between whites and blacks by income at the metropolitan level in 1960 and 2000. Analysis of measurement and regional variations are also conducted. Overall, results support weak and strong versions of Wilson's out-migration thesis. In other words, I find support for all of my hypotheses: (1) over time, middle income blacks are living in higher income neighborhoods, (2) over time, middle income blacks are experiencing more contact with whites (at various income levels), (3) over time, the importance of income for black contact with whites increases (4) over time, middle income blacks are living in metropolitans with more unevenness and less exposure to poor blacks, and (5) over time middle income blacks are living in metropolitans with less unevenness and more exposure to whites (regardless of income).

Results presented in Chapter 4 showed that across all metropolitan areas in 1960, blacks (regardless of income) lived in low income neighborhoods. Although very little neighborhood income stratification is present in 1960 (Figures 2-6), this finding echoes Wilson's argument that, "lower-class, working-class and middle income black families

all lived more or less in the same communities…" (Wilson 1978:7). Over time, the results indicate significant neighborhood SES stratification across all metropolitan areas—a finding that directionally supports one component of the out-migration thesis. Results presented in Chapter 4 also showed that parity contact with whites (not accounting for income) is low across metropolitan areas in 1960. As expected, contact with whites increases for blacks in 2000. For example in Raleigh, 33 percent of blacks live in neighborhoods "at or above parity" on percent in 2000—a net difference of 18 percentage points from 1960 to 2000. When accounting for income, neighborhood stratification is noticeable among blacks in both periods. In 1960, contact with whites is low-to-reduced for blacks as income increases. Among cases, there are several cities where parity contact with whites decreases as income increases for blacks in 1960. This pattern seems to be driven by an occupational effect where low income blacks are experiencing more contact with whites because they are employed as domestic workers. In 2000, contact with whites positively increases across all areas for middle income blacks. One noticeable difference between the two periods is less variation in patterns of neighborhood outcomes in 2000. However, I do observe that cities with high segregation in both years produce low but slightly higher parity contact with whites as black income increases. This lends support to the place stratification framework, where race (not socioeconomic) has a large effect on residential attainment. In the analyses examining average contact with whites, I document low-to-medium black contact (S) with whites in 1960 and medium-to-high black contact with whites in 2000. In several cities, white and black group means increases, yielding a lower value for the separation index over time.

This suggests that blacks are living in less homogeneous neighborhoods now compared to previous years. In addition, I find group rates of return are the largest contributor to white-black segregation in both periods. Moreover, the effect of group distributions increases over time.

Overall, the results presented in Chapter 4 provide support for several components of the out-migration thesis. Middle income blacks are living in higher income neighborhoods over time. Moreover, middle income blacks are experiencing more contact with whites over time. Of note, race is the largest and persistent contributor to overall segregation in both periods. Despite this, the magnitude of group distributions increases over time—indicating that income is becoming increasingly important in overall segregation in the present compared to the past. These findings support the out-migration thesis at the micro-level.

Chapter 5 further explores black neighborhood outcomes at the metropolitan-level in 1960 and 2000. It focused on whether (1) over time middle income blacks are living in metropolitans with more unevenness and less exposure to poor blacks and (2) over time middle income blacks are living in metropolitans with less unevenness and more exposure to whites (regardless of income). Moreover, an analysis of measurement and regional variations are examined.

I find that across the majority of metropolitan areas, middle income blacks are evenly distributed (highly integrated) among poor blacks in 1960. Additionally, middle income blacks are unevenly distributed (highly segregated) in white neighborhoods across metropolitans in 1960. In 2000, I find that middle income blacks' segregation

with poor blacks is increasing over time. In addition, results signal that levels of unevenness with whites (matched and unmatched by income) at the metropolitan level are declining over time. In other words, middle income blacks are living in areas that are more integrated compared to previous years. Regarding exposure, I tested multiple measures of P^* in 1960 and 2000. From 1960 to 2000, I find diminishing relative contact deficits among total whites and total blacks, and middle income blacks and total whites over time. These findings suggest that overall blacks and middle income blacks are experiencing more contact with whites in 2000. Additionally, I find declining relative contact surplus among middle income blacks and poor blacks over time—this suggest that middle income blacks are experiencing less contact with poor blacks over time. In sum, segregation and exposure results support the out-migration thesis at the macro-level.

With regards to measurement variation between the dissimilarity and separation indices, I find very little opposition between D and S across metropolitan areas. However there are a handful of cities where "dispersed displacement" is noticeable in both periods (Fossett 2017:78). For instance, in San Antonio the dissimilarity index in 1960 reflects a very high level of segregation (76.81). A value of 76.81 for the dissimilarity index indicates that uneven distribution is high. A low value of 39.83 for the separation index suggests groups are evenly distributed. The differences between dissimilarity and separation indices are large, indicating, "disperse displacement" (Fossett 2017:78). Some metropolitans fall into the category of "dispersed displacement, where dissimilarity results do not reveal the full extent of residential outcomes" (Fossett

2017:78). Overall, analyses suggest that dissimilarity and separation results for metropolitan areas are fairly consistent. However opposition between the dissimilarity and separation indices still exists among a few cities.

The final analysis, regional trends in white-black segregation show patterns that are consistent with literature. First, segregation is higher in 1960 compared to 2000. This is not surprising considering race relations in the 1960s relative to today. The region with the largest net change is the West (22.37) while the area with the smallest net change is the Northeast (2.57) over time. By states, the Midwest showed the highest degree of overall segregation in both periods. As previously mentioned, the West produced some of the lowest segregation scores in 1960 and 2000. Partitioning the South into three sub-regions, I find very little variation between areas in both periods. I anticipated that Jim Crow South would show higher overall segregation compared to Confederate South and Census South. Marginally, this effect is observed in both periods. Examined by Rustbelt and non-Rustbelt cities, overall segregation increases in the Rustbelt while segregation decreases by 11.72 points over time. Although this part of the analysis does not directly assess the out-migration thesis, these findings are a function of Wilson's inner-city concentrated poverty argument, in turn, has implications for the out-migration thesis (Wilson 2008). A high degree of segregation in the Midwest and the Northeast lends support to the argument that blacks (regardless of income) are not out-migrating into better neighborhoods over time.

In sum, the results from Chapter 5 provide support for several components of the out-migration thesis. First, middle class blacks are living in metropolitans with more

unevenness and less exposure to poor blacks over time. Second, middle income blacks are living in metropolitans with less unevenness and more exposure to whites (regardless of income) over time.

The analyses presented in this dissertation provide several contributions to the residential segregation and locational attainment literatures. Using 1960 census data allowed for analyses to directly test the out-migration thesis at the start of institutional changes. Results from the 1960 analysis are compared to 2000, providing a framework that allowed for historical comparative framework that has not been fully explored in prior research. Moreover, this dissertation conducted two levels of analysis, individual and metropolitan level. Finding from the individual-level analysis provided clarity on the position of middle income blacks in terms of neighborhood SES, parity and average contact with whites over time. For instance, the white-black disparity in neighborhood attainment for middle income blacks is large in 1960 but diminishes over time. Although findings align with prior literature that among minorities—blacks experience the greatest disparity in neighborhood outcomes (Alba et al. 2000; Logan and Alba 1993; Massey and Denton 1993), results shown in this dissertation still provide evidence that despite income not being at the same magnitude as race, it is becoming more relevant to contemporary black neighborhood outcomes. Results from the metropolitan-level analysis are generally consistent with the literature on segregation within and between blacks and whites by income, regional and measurement variation. Regarding white-black segregation by income, results show that middle income blacks are less segregated from whites than poor blacks and experience higher levels of residential unevenness and

lower levels of residential exposure to poor blacks over time. Even in moderate-to-highly segregated metropolitan areas, the level of unevenness and exposure to poor blacks are substantially lower and higher compared to previous years, respectively.

This dissertation is not without limits. First, this analysis could be more robust if black aggregate income data was less crude. As mentioned, this analysis treats white-black purchasing power as similar when in fact they are not. As a result, the analysis over exaggerates black neighborhood attainment and segregation. To improve the analysis would require access to restricted data such as the Federal Statistical Research Data Centers (RDC). Future analyses will use restricted data to refine estimates on black locational attainment and segregation in 1960 and 2000.

Second, cities used this analysis are disproportionately skewed to Southern and Midwestern areas as a result of sample selection. Unfortunately, results do not reflect the nation as whole. Similar to first limitation, this analysis can be improved by using RDC data. RDC data will allow for an analysis of more MSAs as well as refined race data.

Third, it would be useful to have publicly available data with more socioeconomic and demographic variables for blacks in 1960. As mentioned, there are only a few race by socioeconomic status and demographic variables publicly available in 1960. It would be useful to examine how educational attainment, homeownership, marital status, age, and family structure (i.e., single mother household) determine locational attainment. And a multivariate regression analysis at the metropolitan-level where the same variables are used as predictors of white-black segregation would be interesting. Future analyses will include these variables through a RDC.

Fourth, these analyses could be strengthened if I could track individuals across time longitudinally. This dissertation examines residential outcomes of blacks by income status in two points in time. Tracking individuals over time will fully address whether individuals are indeed moving into "better" neighborhoods over time. This type of analysis is possible through the publicly available Panel Study of Income Dynamics (PSID) data, however there is a limited sample size. Additionally, linking individuals over time is possible through restricted RDC data if the project is deemed feasible by census. In future analysis, I plan to explore this latter option if the proposed project is deemed feasible. Lastly, examining black residential outcomes fully across time (1960-2000) would strengthen this analysis. Expanding the data points would capture significant periods in black residential outcomes such as the rise of black suburbanization in the 1970s and 1980s. For future analysis, I plan to include additional time points using publicly available data.

There are several ways that this research could be extended. While the focus of Chapter 4 examined neighborhood outcomes by neighborhood mean income and contact with whites, there are other dependent variables worth investigating. Analyses could examine neighborhood outcomes by neighborhood education level, crime rate, property value, and homeownership. Including other dependent variables would provide a stronger examination of the tenets of the out-migration thesis. Another extension is to examine the locational attainment of other groups while using similar methodologies in this dissertation. Previous research suggest that foreign-born blacks, particularly Caribbean black immigrants are more evenly distributed than U.S.-born blacks (Crowder

1999). Similar to Chapter 4, this analysis would utilize the "difference of means approach", regression standardization, and components analysis. Studying the neighborhood outcomes of foreign-born blacks could shed more light on theories related to assimilation.

Overall, the primary aims of this dissertation are twofold. First was to measure and document the neighborhood outcomes of middle income blacks at the individual- and metropolitan-level. Second was to understand the differences in black neighborhood outcomes over time. Results show support for the out-migration thesis. First, middle income blacks experience more contact with whites over time. Second, middle income blacks are living in neighborhoods with higher SES over time. Third, the importance of income for black contact with whites increases over time. Fourth, middle income blacks are living in metropolitans with more unevenness and less exposure to poor blacks. Fifth, middle income blacks are living in metropolitans with less unevenness and more exposure to whites (regardless of income).

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APPENDIX-A

Table 1 Means, Standard Deviations and Frequencies of Total Family Income by Income Intervals in Birmingham, AL, 1960

	Whites			Blacks		
Income Intervals	Means	Standard Deviations	Frequencies	Means	Standard Deviations	Frequencies
$9,000- 10,000	9,417	(292)	951	9,474	(315)	136
$10,000-14,999	11,846	(1332)	2193	11,892	(1334)	211
$15,000-24,999	18,475	(2575)	979	17,942	(1969)	29
$10,000 and up	15,156	(5628)	3473	12,623	(2434)	240
$25,000 and up	28,478	(6163)	301	--	--	0

Source: 1960 5% Integrated Public Use Microdata Series

Table 2 Means, Standard Deviations and Frequencies of Total Family Income by Income Intervals in Chicago, IL, 1960

	Whites			Blacks		
Income Intervals	Means	Standard Deviations	Frequencies	Means	Standard Deviations	Frequencies
$9,000-10,000	9,414	(303)	20,811	9,441	(288)	1,592
$10,000-14,999	11,900	(1360)	51,586	11,789	(1341)	3,454
$15,000-24,999	18,227	(2637)	18,871	17,917	(2659)	662
$10,000 and up	14,858	(5448)	77,299	13,115	(3756)	4,205
$25,000 and up	27,868	(5978)	6,842	28,841	(7112)	89

Source: 1960 5% Integrated Public Use Microdata Series

Table 3 Descriptive Statistics of Tract Mean Income Attainment for Whites and Blacks by Income, 1960[1]

		Whites					Blacks					
Regions	N's	Mean	Standard Deviation	10th Percentile	50th Percentile	90th Percentile	Mean	Standard Deviation	10th Percentile	50th Percentile	90th Percentile	Percent Ratios
Northeast	6	$6,390	(625)	$5,759	$6,549	$7,117	$4,201	(169)	$4,044	$4,183	$4,418	65.74
Midwest	16	$6,403	(704)	$5,887	$6,457	$7,059	$3,948	(459)	$3,534	$3,988	$4,378	61.66
South	42	$5,318	(801)	$4,459	$5,190	$6,173	$3,119	(467)	$2,707	$3,086	$3,518	58.65
Total	64											

[1]As a result of the selection criteria, metropolitans in the West are not included in this study.

Source: 1960 National Historical Geographic Information Systems Data

Table 4 Descriptive Statistics of Tract Mean Income Attainment for Whites and Blacks by Income, 2000[1]

		Whites					Blacks					
Regions	N's	Mean	Standard Deviation	10th Percentile	50th Percentile	90th Percentile	Mean	Standard Deviation	10th Percentile	50th Percentile	90th Percentile	Percent Ratios
Northeast	6	$53,383	(5879)	$48,054	$51,880	$60,860	$31,559	(3060)	$28,873	$30,352	$34,692	59.12
Midwest	16	$51,509	(5574)	$44,319	$52,601	$57,006	$31,633	(3043)	$28,040	$32,686	$34,281	61.41
South	42	$49,720	(6789)	$43,077	$48,594	$59,312	$33,616	(4945)	$27,721	$33,632	$38,592	67.61
Total	64											

[1]As a result of the selection criteria, metropolitans in the West are not included in this study.

Source: 2000 decennial Census

Table 5 Descriptive Statistics for D and Black-White Average Parity Contact with Whites, 1960[1]

		Whites					Blacks					
Regions	N's	Mean	Standard Deviation	10th Percentile	50th Percentile	90th Percentile	Mean	Standard Deviation	10th Percentile	50th Percentile	90th Percentile	Difference of Means
Northeast	6	0.89	(0.02)	0.86	0.88	0.91	0.11	(0.02)	0.08	0.10	0.15	0.78
Midwest	16	0.91	(0.05)	0.84	0.92	0.95	0.06	(0.02)	0.03	0.07	0.09	0.85
South	42	0.87	(0.05)	0.80	0.88	0.92	0.13	(0.06)	0.07	0.12	0.20	0.74
Total	64	0.89	(0.04)	0.83	0.89	0.93	0.10	(0.03)	0.06	0.10	0.14	0.79

[1]As a result of the selection criteria, metropolitans in the West are not included in this study.

Source: 1960 National Historical Geographic Information Systems Data

Table 6 Descriptive Statistics for D and White-Black Average Parity Contact with Whites, 2000[1]

		Whites					Blacks					
Regions	N's	Mean	Standard Deviation	10th Percentile	50th Percentile	90th Percentile	Mean	Standard Deviation	10th Percentile	50th Percentile	90th Percentile	Difference of Means
Northeast	6	0.88	(0.02)	0.86	0.89	0.91	0.15	(0.13)	0.11	0.16	0.17	0.73
Midwest	16	0.90	(0.03)	0.86	0.89	0.93	0.14	(0.13)	0.09	0.14	0.20	0.76
South	42	0.82	(0.05)	0.73	0.83	0.86	0.22	(0.12)	0.15	0.22	0.29	0.60
Total	64	0.87	(0.03)	0.82	0.87	0.90	0.17	(0.13)	0.12	0.17	0.22	0.70

[1]As a result of the selection criteria, metropolitans in the West are not included in this study.

Source: 2000 decennial census

Table 7 Descriptive Statistics for S and White-Black Average Contact with Whites, 1960[1]

		Whites					Blacks					
Regions	N's	Mean	Standard Deviation	10th Percentile	50th Percentile	90th Percentile	Mean	Standard Deviation	10th Percentile	50th Percentile	90th Percentile	Difference of Means
Northeast	6	0.97	(0.01)	0.95	0.97	0.98	0.49	(0.14)	0.38	0.54	0.66	0.47
Midwest	16	0.97	(0.02)	0.95	0.96	0.98	0.35	(0.13)	0.21	0.33	0.54	0.62
South	42	0.92	(0.04)	0.87	0.93	0.96	0.34	(0.11)	0.24	0.31	0.50	0.57
Total	64	0.95	(0.02)	0.92	0.95	0.97	0.39	(0.13)	0.28	0.39	0.57	0.55

[1]As a result of the selection criteria, metropolitans in the West are not included in this study

Source: 1960 National Historical Geographic Information Systems Data

Table 8 Descriptive Statistics for S and White-Black Average Contact with Whites, 2000[1]

		Whites					Blacks					
Regions	N's	Mean	Standard Deviation	10th Percentile	50th Percentile	90th Percentile	Mean	Standard Deviation	10th Percentile	50th Percentile	90th Percentile	Difference of Means
Northeast	6	0.94	(0.03)	0.91	0.95	0.96	0.42	(0.13)	0.28	0.49	0.56	0.41
Midwest	16	0.95	(0.05)	0.93	0.95	0.96	0.39	(0.13)	0.22	0.39	0.52	0.56
South	42	0.87	(0.06)	0.79	0.88	0.93	0.46	(0.12)	0.32	0.46	0.61	0.52
Total	64	0.92	(0.05)	0.88	0.93	0.95	0.42	(0.13)	0.27	0.45	0.56	0.50

[1]As a result of the selection criteria, metropolitans in the West are not included in this study

Source: 2000 decennial census

Table 9 Descriptive Statistics (Means and Standard Deviations) of Dissimilarity Index Scores for Whites and Blacks by Income Quintiles, 1960

	White Quintile 2	White Quintile 3	White Quintile 4	White Quintile 5	Black Total	Black Quintile 1	Black Quintile 2	Black Quintile 3	Black Quintile 4	Black Quintile 5
White Total					76.3	77	76.8	77.4	78.3	79
					(9.4)	(9.4)	(9.5)	(9.1)	(8.7)	(7.3)
White Quintile 1	14.6	24	31	41.4	70.9	71	71.7	73.1	74.3	76.1
	(2.5)	(4.2)	(5.2)	(6.7)	(9.8)	(10.3)	(9.7)	(9.2)	(8.9)	(7.6)
White Quintile 2		14.2	23.1	36.4	73.4	73.9	73.9	74.8	75.9	77.3
		(2.8)	(4.6)	(6.2)	(10.1)	(10.4)	(10.1)	(9.6)	(9.3)	(7.8)
White Quintile 3			12.6	29.4	76.3	77.1	76.8	77.3	78.2	79.2
			(2.6)	(5.2)	(9.9)	(10)	(10)	(9.6)	(9.3)	(7.7)
White Quintile 4				21.3	78.9	79.8	79.4	79.7	80.6	80.9
				(4)	(9.4)	(9.3)	(9.6)	(9.2)	(8.8)	(7.5)
White Quintile 5					82.4	83.3	82.9	82.9	83.5	83.6
					(7.9)	(7.8)	(8)	(8.1)	(7.7)	(6.6)
Black Quintile 1							16.1	24.3	30.1	37
							(4.1)	(5.9)	(6.2)	(8)
Black Quintile 2								14.5	22.1	29.8
								(3.9)	(4.8)	(6.6)
Black Quintile 3									17	26
									(4.7)	(6.2)
Black Quintile 4										23.4
										(6.3)

Source: 1960 National Historical Geographic Information Systems Data

Table 10 Descriptive Statistics (Means and Standard Deviations) of Separation Index Scores for Whites and Blacks by Income Quintiles, 1960

	White Quintile 2	White Quintile 3	White Quintile 4	White Quintile 5	Black Total	Black Quintile 1	Black Quintile 2	Black Quintile 3	Black Quintile 4	Black Quintile 5
White Total					56.2	49.2	42.9	35.5	28.6	23.3
					(12)	(13.3)	(14)	(13.9)	(13.3)	(12.7)
White Quintile 1	3.5	8.7	13.7	22.5	56.7	55.5	52.8	49.3	44.5	39.5
	(1.1)	(2.7)	(4.1)	(6.2)	(12.9)	(12)	(12.2)	(13)	(14.3)	(15)
White Quintile 2		3.3	8.1	18.4	60.7	59.3	55.7	51	45.5	40
		(1.2)	(2.8)	(5.3)	(12.7)	(12.2)	(12.2)	(13)	(14.1)	(14.8)
White Quintile 3			2.7	12.8	65.2	63.7	59.7	54.3	48.2	42.2
			(1)	(3.9)	(12.1)	(11.9)	(11.9)	(12.6)	(13.8)	(14.4)
White Quintile 4				7.2	69	67.5	63.6	57.9	51.7	45.5
				(2.4)	(11.5)	(11.5)	(11.8)	(12.5)	(13.5)	(13.9)
White Quintile 5					73.6	72.1	68.3	62.6	56.7	50.7
					(10.1)	(10.2)	(11.1)	(12.2)	(13.5)	(14.2)
Black Quintile 1							4.6	8	9	10.4
							(1.8)	(3)	(4.1)	(4.7)
Black Quintile 2								4	6.5	8.9
								(2.1)	(3)	(4.3)
Black Quintile 3									5.8	9.8
									(2.9)	(4.3)
Black Quintile 4										10.5
										(4.8)

Source: 1960 National Historical Geographic Information Systems Data

Table 11 Descriptive Statistics (Means and Standard Deviations) of Relative Contact (*P) Scores for Whites and Blacks by Income Quintiles, 1960**

	White Total	White Quintile 1	White Quintile 2	White Quintile 3	White Quintile 4	White Quintile 5	Black Total	Black Quintile 1	Black Quintile 2	Black Quintile 3	Black Quintile 4	Black Quintile 5
White Total	56.2	0.8	1.5	2.3	3	3.7	-56.2	-56.8	-56.1	-55.6	-55.3	-54.5
	(12)	(0.)6	(0.7)	(1.2)	(1.9)	(2.3)	(12)	(12.5)	(12.2)	(12.2)	(12.4)	(12.8)
White Quintile 1	32.7	5.4	3.7	1.2	-4.1	-14.2	-32.7	-30.6	-33.2	-35.8	-36.7	-37.9
	(17.1)	(1.8)	(1.2)	(1.8)	(5.4)	(8.7)	(17.1)	(17.8)	(16.9)	(17.1)	(17.2)	(17.6)
White Quintile 2	45.2	2.9	3.8	2.9	0.8	-9	-45.2	-45.2	-44.9	-45.6	-45.9	-46
	(14.8)	(0.9)	(1.1)	(1.4)	(2.6)	(6.9)	(14.8)	(16.1)	(14.7)	(14.2)	(14)	(15.2)
White Quintile 3	56.7	0.6	2.3	3.9	3.5	-0.3	-56.7	-57.9	-56.3	-55.4	-54.9	-54.5
	(12.8)	(1.2)	(0.9)	(1.5)	(1.7)	(3.1)	(12.8)	(13.7)	(12.8)	(12.6)	(12.7)	(13)
White Quintile 4	64.3	-4.4	0.4	3.1	5.1	4.5	-64.3	-65.9	-64.2	-62.6	-61.8	-60.3
	(11.8)	(5.1)	(2.2)	(1.3)	(2)	(2.2)	(11.8)	(12.3)	(11.9)	(12.1)	(12)	(12.1)
White Quintile 5	72	-14.3	-9.1	-0.5	4.1	14	-72	-73.6	-72	-70.3	-69.1	-66.4
	(10.3)	(8.5)	(6.7)	(2.8)	(1.9)	(4)	(10.3)	(10.3)	(10.7)	(11.4)	(11.5)	(11.4)
Black Total	-56.2	-32.6	-45.2	-56.7	-64.3	-72	56.2	22.6	13.9	7	3.8	2.1
	(12)	(17.3)	(14.8)	(12.8)	(11.8)	(10.3)	(12)	(5.7)	(3.3)	(1.9)	(1.5)	(1)
Black Quintile 1	-56.8	-30.5	-45.2	-57.9	-65.9	-73.6	56.8	24.9	13.6	6.4	3.3	1.8
	(12.5)	(18)	(16.1)	(13.7)	(12.3)	(10.3)	(12.5)	(6.7)	(3.3)	(1.9)	(1.4)	(0.9)
Black Quintile 2	-56.1	-33	-44.9	-56.3	-64.2	-72	56.1	21.9	14.4	7.1	3.8	2.1
	(12.2)	(17.2)	(14.7)	(12.8)	(11.9)	(10.7)	(12.2)	(5.3)	(3.5)	(1.9)	(1.5)	(1)
Black Quintile 3	-55.6	-35.7	-45.6	-55.4	-62.6	-70.3	55.6	20.2	14.1	7.8	4.2	2.3
	(12.2)	(17.3)	(14.2)	(12.6)	(12.1)	(11.4)	(12.2)	(4.7)	(3.6)	(2.1)	(1.6)	(1.1)
Black Quintile 4	-55.3	-36.6	-45.9	-54.9	-61.8	-69.1	55.3	19.4	13.9	7.7	4.7	2.6
	(12.4)	(17.4)	(14)	(12.70	(12)	(11.5)	(12.4)	(4.7)	(3.6)	(2.2)	(1.7)	(1.2)
Black Quintile 5	-54.5	-37.9	-46	-54.5	-60.3	-66.4	54.5	18.6	13.6	7.7	4.6	3.1
	(12.8)	(17.7)	(15.2)	(13)	(12.1)	(11.4)	(12.8)	(4.6)	(3.6)	(2.3)	(1.8)	(1.4)

Source: 1960 National Historical Geographic Information Systems Data

Table 12 Descriptive Statistics (Means and Standard Deviations) of Dissimilarity Index Scores for Whites and Blacks by Income Quintiles, 2000

	White Quintile 2	White Quintile 3	White Quintile 4	White Quintile 5	Black Total	Black Quintile 1	Black Quintile 2	Black Quintile 3	Black Quintile 4	Black Quintile 5
White Total					64.3	72.1	67.1	64	61.5	58.8
					(11.2)	(9.9)	(11)	(11.5)	(11.8)	(11.8)
White Quintile 1	16.6	22.6	30.7	44.8	59.7	65.7	61.9	60.5	60.3	61.6
	(2.9)	(3.8)	(4.4)	(5.8)	(11.8)	(10.8)	(11.7)	(11.9)	(11.6)	(11.4)
White Quintile 2		14.1	22.5	38.5	61.4	68.9	63.7	61.1	60.1	60.5
		(2.5)	(3.1)	(5.1)	(12.5)	(11.1)	(12.4)	(12.7)	(12.5)	(11.9)
White Quintile 3			14.3	31.8	63.8	71.8	66.5	63.1	60.9	59.7
			(1.9)	(4.5)	(11.8)	(10.4)	(11.4)	(12)	(12.2)	(11.9)
White Quintile 4				22.8	67	75	69.9	66.1	62.9	59.8
					(10.9)	(9.5)	(10.6)	(11.3)	(11.8)	(11.7)
White Quintile 5					72.4	79.7	75.2	72	68.5	63
					(8.9)	(8.2)	(8.9)	(9.1)	(9.9)	(10.3)
Black Quintile 1							23.8	32.9	40.6	48.3
							(4.3)	(5.6)	(6.3)	(7.8)
Black Quintile 2								22.8	30.2	39.5
								(5)	(5.1)	(6.8)
Black Quintile 3									23.5	33.9
									(4.8)	(6.2)
Black Quintile 4										27.9
										(5.9)

Source: 2000 decennial census

Table 13 Descriptive Statistics (Means and Standard Deviations) of Separation Index Scores for Whites and Blacks by Income Quintiles, 2000

	White Quintile 2	White Quintile 3	White Quintile 4	White Quintile 5	Black Total	Black Quintile 1	Black Quintile 2	Black Quintile 3	Black Quintile 4	Black Quintile 5
White Total					46.6	48.9	36.9	30	25	20.3
					(13.7)	(13.7)	(14.7)	(14.6)	(13.8)	(13.1)
White Quintile 1	4.7	8.1	13.6	25.4	41.5	50.8	43.9	40	37.8	35.7
	(1.7)	(2.5)	(3.5)	(5.5)	(15.1)	(13.4)	(13.9)	(14.3)	(14.2)	(14.3)
White Quintile 2		3.5	7.8	20.1	45.2	55.2	46.2	40.7	37	33.8
		(1.3)	(2)	(4.3)	(15.4)	(13.5)	(14.4)	(14.6)	(14.4)	(14.5)
White Quintile 3			3.4	14.4	48.4	59	49.7	43.3	38.5	34
			(1)	(3.4)	(14.9)	(12.9)	(13.8)	(14.3)	(14.4)	(14.4)
White Quintile 4				8	52.5	63.3	53.9	47.1	41.4	35.6
				(2.3)	(14.1)	(12.2)	(13.3)	(14.1)	(14.4)	(14.4)
White Quintile 5					59.8	68.9	59.9	53.2	46.8	39
					(12)	(10.8)	(12)	(12.9)	(13.6)	(14)
Black Quintile 1							9.6	15.8	21.6	28.6
							(3.1)	(4.7)	(6.2)	(8.1)
Black Quintile 2								9.5	14.7	22.4
								(4.3)	(4.9)	(7)
Black Quintile 3									10.3	18.3
									(4)	(6.2)
Black Quintile 4										13.9
										(5.5)

Source: 2000 decennial census

Table 14 Descriptive Statistics (Means and Standard Deviations) of Relative Contact (*P) Scores for Whites and Blacks by Income Quintiles, 2000**

	White Total	White Quintile 1	White Quintile 2	White Quintile 3	White Quintile 4	White Quintile 5	Black Total	Black Quintile 1	Black Quintile 2	Black Quintile 3	Black Quintile 4	Black Quintile 5
White Total	37.7	0.8	1.8	2.5	3.2	4.6	-47	-55.5	-48.3	-42.6	-37.2	-30.7
	(11)	(0.6)	(1)	(1.3)	(1.7)	(2.8)	(13.9)	(13.6)	(14.2)	(14.5)	(14.6)	(14)
White Quintile 1	21.5	4.3	3.4	2.2	-1.4	-14.1	-29.3	-30.1	-28.3	-27.9	-29.4	-32.4
	(12.4)	(1.4)	(1.2)	(1.3)	(4)	(8.9)	(16.5)	(18.1)	(16.9)	(16.1)	(15.4)	(14.7)
White Quintile 2	30.3	2.4	3.8	2.9	1.8	-6.1	-38.8	-45.2	-37.9	-33.8	-32.3	-33
	(12.4)	(0.8)	(1.2)	(1.4)	(1.7)	(6.4)	(16.1)	(16.5)	(17.1)	(16.4)	(15.3)	(14.3)
White Quintile 3	36.4	1.3	2.5	3.7	3.2	0.9	-45.3	-54.4	-46.1	-39.5	-34.6	-31.4
	(12)	(0.6)	(1)	(1.4)	(1.7)	(3.1)	(15.2)	(14.7)	(15.3)	(15.9)	(15.6)	(14.8)
White Quintile 4	42.1	-1.9	1.3	2.9	4.8	5.3	-51.8	-62.9	-54.1	-46	-38.2	-29.8
	(11.7)	(3.5)	(1.2)	(1.4)	(1.8)	(2.2)	(14.2)	(12.8)	(13.9)	(15.3)	(16)	(15.7)
White Quintile 5	48.9	-14.2	-6.3	0.4	4.4	14.6	-60	-71.5	-63.5	-56.5	-46.6	-28.3
	(10)	(8.8)	(6.1)	(2.6)	(1.6)	(3.8)	(11.8)	(10.6)	(11.8)	(12.5)	(13.8)	(15.9)
Black Total	-47	-29.3	-38.8	-45.3	-51.8	-60	42	16.4	7.9	5.1	3.5	2.2
	(13.9)	(16.6)	(16.1)	(15.2)	(14.2)	(11.8)	(13.5)	(5.3)	(2.5)	(1.7)	(1.4)	(1.1)
Black Quintile 1	-55.5	-30	-45.2	-54.4	-62.9	-71.5	48.9	22.9	8.8	4.9	2.9	1.7
	(13.6)	(18.4)	(16.5)	(14.7)	(12.8)	(10.6)	(13.6)	(6.2)	(2.4)	(1.5)	(1.1)	(1)
Black Quintile 2	-48.3	-28.2	-37.9	-46.1	-54.1	-63.5	42.8	15.9	9.1	5.3	3.5	2.1
	(14.2)	(17)	(17.1)	(15.3)	(13.9)	(11.8)	(13.8)	(5.1)	(2.7)	(1.8)	(1.4)	(1.1)
Black Quintile 3	-42.6	-27.8	-33.8	-39.5	-46	-56.5	38.2	12.4	7.3	5.9	3.8	2.4
	(14.5)	(16.2)	(16.4)	(15.9)	(15.3)	(12.5)	(13.8)	(4.9)	(2.6)	(2)	(1.6)	(1.3)
Black Quintile 4	-37.2	-29.4	-32.3	-34.6	-38.2	-46.6	33.9	9.7	6.3	5	4.5	2.7
	(14.6)	(15.5)	(15.3)	(15.6)	(16)	(13.8)	(13.6)	(4.4)	(2.5)	(2)	(1.9)	(1.5)
Black Quintile 5	-30.6	-32.4	-33	-31.3	-29.8	-28.2	28.7	7.3	5	4.2	3.7	3.5
	(14.4)	(14.7)	(14.3)	(14.8)	(15.8)	(16)	(13.2)	(3.9)	(2.3)	(1.9)	(2)	(1.8)

Source: 2000 decennial census

Table 15 Black Intragroup Segregation by Income (Quintile1-Quntile5) by D, 1960 and 2000

	1960		2000			
Metropolitan by Quintiles	Quintile 1	Quintile 2	Quintile 1	Quintile 2	Percent Change for Quintile 1	Percent Change for Quintile 2
Atlanta, GA						
Quintile 3	28.87	16.85	38.08	19.86	31.90	17.86
Quintile 4	38.00	25.91	46.30	30.17	21.84	16.44
Quintile 5	48.51	36.56	54.57	41.01	12.49	12.17
Charleston, SC						
Quintile 3	24.3	12.4	27.08	19.29	11.44	55.56
Quintile 4	28.43	17.42	31.18	23.70	9.67	36.05
Quintile 5	29.07	27.71	36.59	27.66	25.87	-0.18
Chicago, IL						
Quintile 3	27.59	14.22	36.14	21.21	30.99	49.16
Quintile 4	33.91	20.88	43.48	28.32	28.22	35.63
Quintile 5	40.48	27.87	51.13	38.55	26.31	38.32
Pittsburgh, PA						
Quintile 3	31.05	21.92	38.04	29.26	22.51	33.49
Quintile 4	35.89	30.18	45.36	37.14	26.39	23.06
Quintile 5	44.34	38.19	55.93	46.21	26.14	21.00

Sources: 1960 National Historical Geographic Information Systems Data and 2000 decennial census

Table 16 Black Intragroup Segregation by Income (Quintile1-Quntile5) by S, 1960 and 2000

	1960		2000			
Metropolitans by Quintiles	Quintile 1	Quintile 2	Quintile 1	Quintile 2	Percent Change for Quintile 1	Percent Change for Quintile 2
Atlanta, GA						
Quintile 3	10.15	4.05	19.23	6.63	89.46	63.70
Quintile 4	12.09	6.49	26.31	13.14	117.62	102.47
Quintile 5	12.61	8.73	33.04	23.17	162.01	165.41
Charleston, SC						
Quintile 3	7.83	2.74	10.82	5.80	38.19	111.68
Quintile 4	6.65	3.67	11.21	8.07	68.57	119.89
Quintile 5	4.38	3.89	12.72	10.02	190.41	157.58
Chicago, IL						
Quintile 3	10.12	4.10	17.17	8.75	69.66	113.41
Quintile 4	12.94	7.27	22.97	13.17	77.51	81.16
Quintile 5	16.92	11.19	29.20	21.33	72.58	90.62
Pittsburgh, PA						
Quintile 3	11.62	8.45	19.32	16.64	66.27	96.92
Quintile 4	13.21	12.94	25.71	23.08	94.63	78.36
Quintile 5	16.05	16.75	33.68	31.13	109.84	85.85

Sources: 1960 National Historical Geographic Information Systems Data and 2000 decennial census

Table 17 Total Whites-Middle Income Blacks (Quintile 3-5) Segregation by D, 1960 and 2000

	1960	2000		
Metropolitans by Quintiles	Whites	Whites	Absolute Difference	Percent Change
Atlanta, GA				
Quintile 3	80.98	65.62	15.36	-18.97
Quintile 4	84.03	62.86	21.17	-25.19
Quintile 5	85.86	58.06	27.80	-32.38
Charleston, SC				
Quintile 3	62.83	40.47	22.36	-35.59
Quintile 4	63.09	37.33	25.76	-40.83
Quintile 5	67.46	42.14	25.32	-37.53
Chicago, IL				
Quintile 3	89.78	82.20	7.58	-8.44
Quintile 4	89.26	80.62	8.64	-9.68
Quintile 5	88.26	78.53	9.73	-11.02
Pittsburgh, PA				
Quintile 3	76.04	72.33	3.71	-4.88
Quintile 4	77.00	69.53	7.47	-9.70
Quintile 5	80.86	72.56	8.30	-10.26

Sources: 1960 National Historical Geographic Information Systems Data and 2000 decennial census

Table 18 Total Whites-Middle Income Blacks (Quintile 3-5) Segregation by S, 1960 and 2000

	1960	2000		
Metropolitans by Quintiles	Whites	Whites	Absolute Difference	Percent Change
Atlanta, GA				
Quintile 3	51.83	39.09	12.74	-24.58
Quintile 4	48.76	36.78	11.98	-24.57
Quintile 5	47.92	31.32	16.60	-34.64
Charleston, SC				
Quintile 3	29.61	11.69	17.92	-60.52
Quintile 4	22.35	8.27	14.08	-63.00
Quintile 5	15.41	9.19	6.22	-40.36
Chicago, IL				
Quintile 3	60.36	61.24	0.88	1.46
Quintile 4	55.82	56.17	0.35	0.63
Quintile 5	52.36	47.17	5.19	-9.91
Pittsburgh, PA				
Quintile 3	22.20	27.47	5.27	23.74
Quintile 4	19.80	20.30	0.50	2.53
Quintile 5	15.59	19.61	4.02	25.79

Sources: 1960 National Historical Geographic Information Systems Data and 2000 decennial census

Table 19 (*P) Measures of Exposure for Total Whites to Total Blacks in Select Metropolitan Areas in 1960 and 2000**

	Atlanta	Charleston	Chicago	Pittsburgh
1960				
Expected Contact	19.54	30.96	12.64	5.91
Observed Contact	6.43	16.31	2.53	3.36
Simple Difference	-13.1	-14.65	-10.12	-2.55
Relative Contact Surplus/Deficit	-67.07	-47.32	-80.02	-43.09
2000				
Expected Contact	27.08	29.11	18.79	7.27
Observed Contact	12.66	21.49	4.96	3.78
Simple Difference	-14.42	-7.62	-13.83	-3.49
Relative Contact Surplus/Deficit	-53.26	-26.19	-73.59	-48.04

Source: 1960 National Historical Geographic Information Systems Data and 2000 decennial census

Table 20 (*P) Measures of Exposure for Middle Income Blacks (Quintile 5) to Poor Blacks (Quintile 1) in Select Metropolitan Areas in 1960 and 2000**

	Atlanta	Charleston	Chicago	Pittsburgh
1960				
Expected Contact	9.31	13.87	5.87	2.7
Observed Contact	29.75	26.98	29.86	19.13
Simple Difference	20.44	13.11	23.99	16.38
Relative Contact Surplus/Deficit	22.54	15.22	25.48	16.85
2000				
Expected Contact	9.12	11.56	7.34	3.31
Observed Contact	13.82	15.65	19.54	15.69
Simple Difference	4.70	4.08	12.20	12.38
Relative Contact Surplus/Deficit	5.18	4.62	13.16	12.80

Sources: 1960 National Historical Geographic Information Systems Data and 2000 decennial census

Table 21 (*P) Measures of Exposure for Middle Income Blacks (Quintile 5) to Total Whites in Select Metropolitan Areas in 1960 and 2000**

	Atlanta	Charleston	Chicago	Pittsburgh
1960				
Expected Contact	80.46	69.04	87.36	94.09
Observed Contact	20.97	37.11	21.98	53.67
Simple Difference	-59.49	-31.93	-65.38	-40.42
Relative Contact Surplus/Deficit	-73.93	-46.25	-74.84	-42.95
2000				
Expected Contact	63.72	66.48	60.61	90.58
Observed Contact	38.52	54.77	27.70	56.69
Simple Difference	-25.19	-11.72	-32.91	-33.89
Relative Contact Surplus/Deficit	-39.54	-17.63	-54.30	-37.41

Sources: 1960 National Historical Geographic Information Systems Data and 2000 decennial census

Table 22 Regions and Trends in White-Black Segregation for States and Metropolitan Statistical Areas, 1960 and 2000

Region	N's	1960 Index	2000 Index	Average Difference	% Change
States					
Northeast	9	70.69	68.12	-2.57	-3.6
Midwest	12	79.93	70.53	-9.4	-11.8
South	17	73.53	60.31	-13.22	-18.0
West	13	75.73	53.36	-22.37	-29.5
Total	51	74.97	63.08	-11.89	-15.9
Southern Region					
Confederate South	11	73.03	59.21	-13.82	-18.9
Census South	17	73.53	60.31	-13.22	-18.0
Jim Crow South	19	74.62	61.51	-13.11	-17.6
Total	-	73.72	60.34	-13.38	-18.1
MSAs					
Rustbelt	18	74.41	75.51	+1.1	+1.5
Non-Rustbelt	165_a | 333_b	73.03	61.31	-11.72	-16.0
Total	-	73.72	68.41	-5.31	-7.2

[a] Total number of MSAs in 1960

[b] Total number of MSAs in 2000

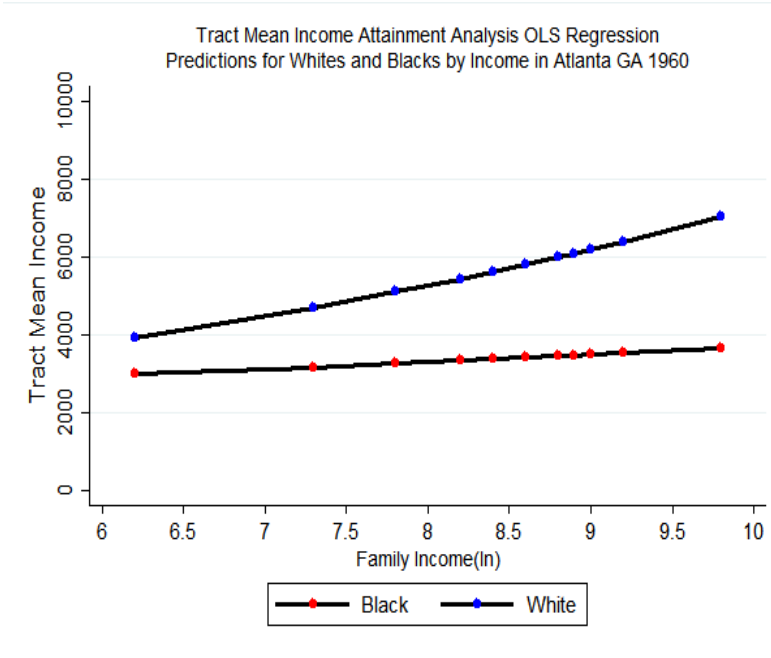
Sources: 1960 National Historical Geographic Information Systems Data and 2000 decennial census

APPENDIX-B

Figure 1 Metropolitan Areas that Meet the Selection Criteria in 1960

South	Midwest	Northeast
Atlanta GA	Akron OH	Harrisburg PA
Augusta GA	Canton OH	Hartford CT
Austin TX	Chicago IL	New York NY
Baltimore MD	Cincinnati OH	Philadelphia PA
Baton Rouge LA	Cleveland OH	Pittsburgh PA
Beaumont TX	Columbus OH	Rochester NY
Birmingham AL	Dayton OH	
Charleston SC	Detroit MI	
Charlotte NC	Gary IN	
Chattanooga TN	Indianapolis IN	
Columbus, GA	Kansas City MO	
Dallas TX	Omaha NE	
Fort Worth TX	Saginaw MI	
Galveston TX	St.Louis MO	
Greensboro NC	Toledo OH	
Greensville SC	Youngstown OH	
Houston TX		
Jacksonville FL		
Knoxville TN		
Lexington KY		
Little Rock AR		
Louisville KY		
Macon GA		
Memphis TN		
Miami FL		
Mobile AL		
Monroe LA		
Montgomery AL		
Nashville TN		
New Orleans LA		
Norfolk VA		
Orlando FL		
Raleigh NC		
Richmond VA		
San Antonio TX		
Savannah GA		
Shreveport LA		
Tampa FL		
Tyler TX		
Waco TX		
Washington DC		
Wilmington NC		

Figure 2 Tract Mean Income Attainment Analysis OLS Regression for Whites and Blacks by Income in Atlanta, GA 1960 and 2000



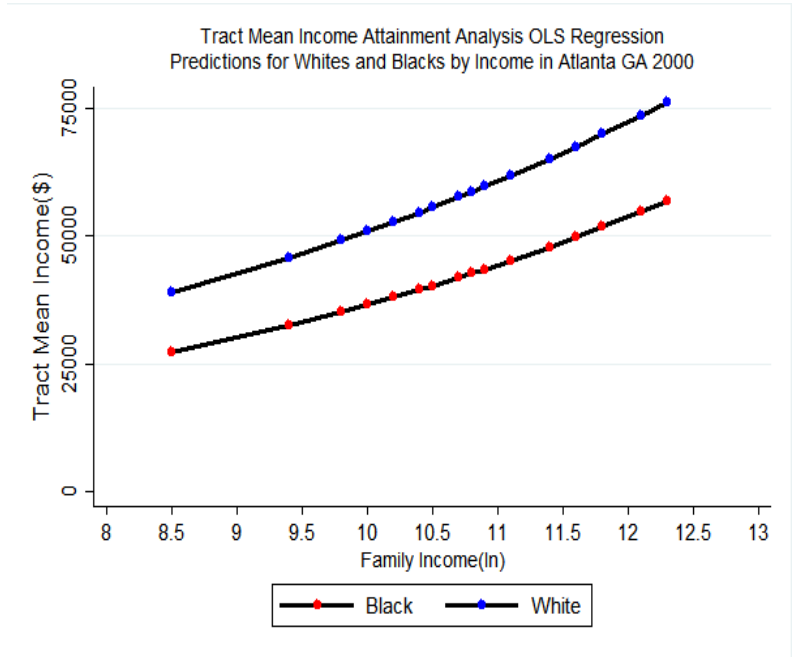
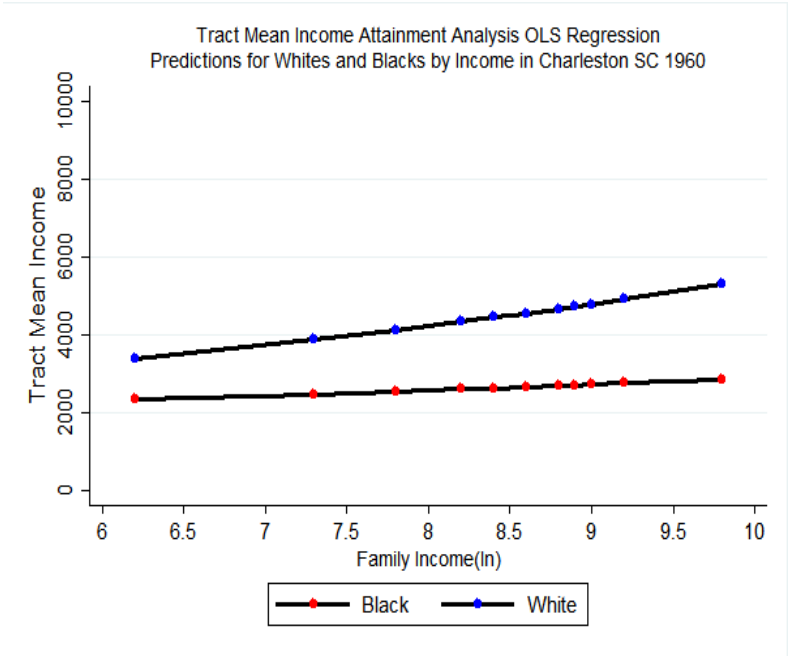


Figure 3 Tract Mean Income Attainment Analysis OLS Regression for Whites and Blacks by Income in Charleston, SC 1960 and 2000



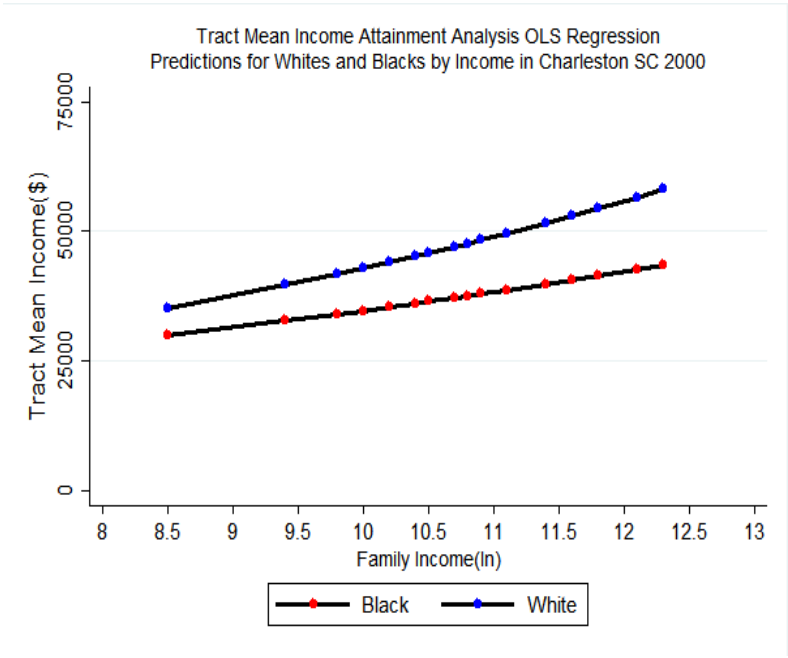


Figure 4 Tract Mean Income Attainment Analysis OLS Regression for Whites and Blacks by Income in Chicago, IL 1960 and 2000

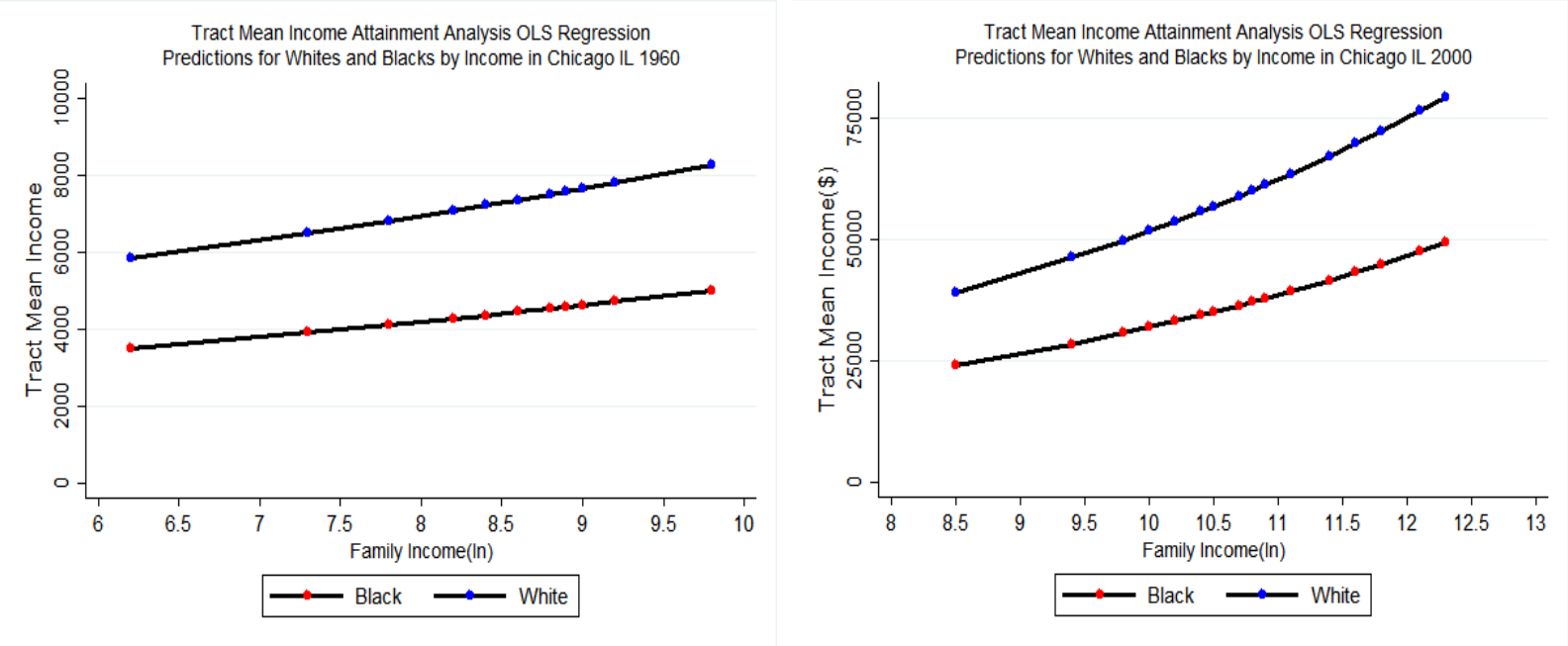


Figure 5 Tract Mean Income Attainment Analysis OLS Regression for Whites and Blacks by Income in Pittsburgh, PA 1960 and 2000

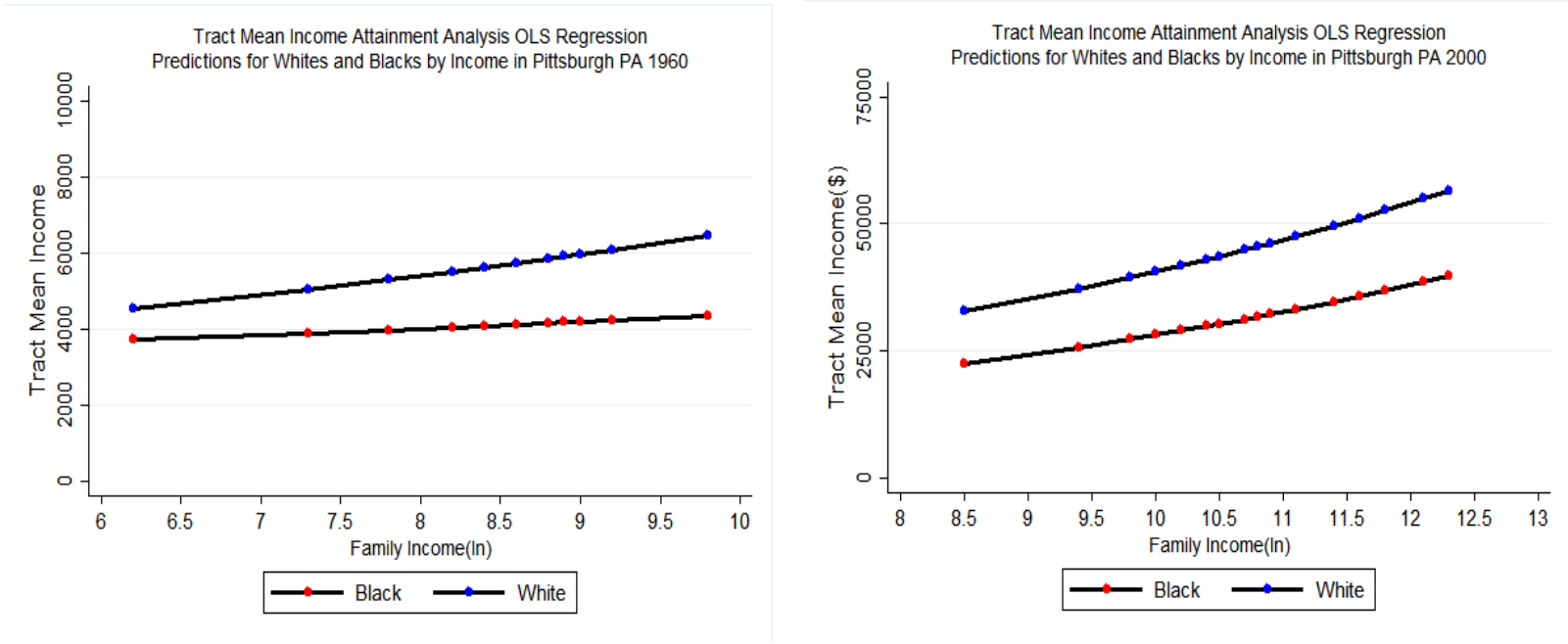


Figure 6 Tract Mean Income Attainment Analysis OLS Regression for Whites and Blacks by Income in Rochester, NY 1960 and 2000

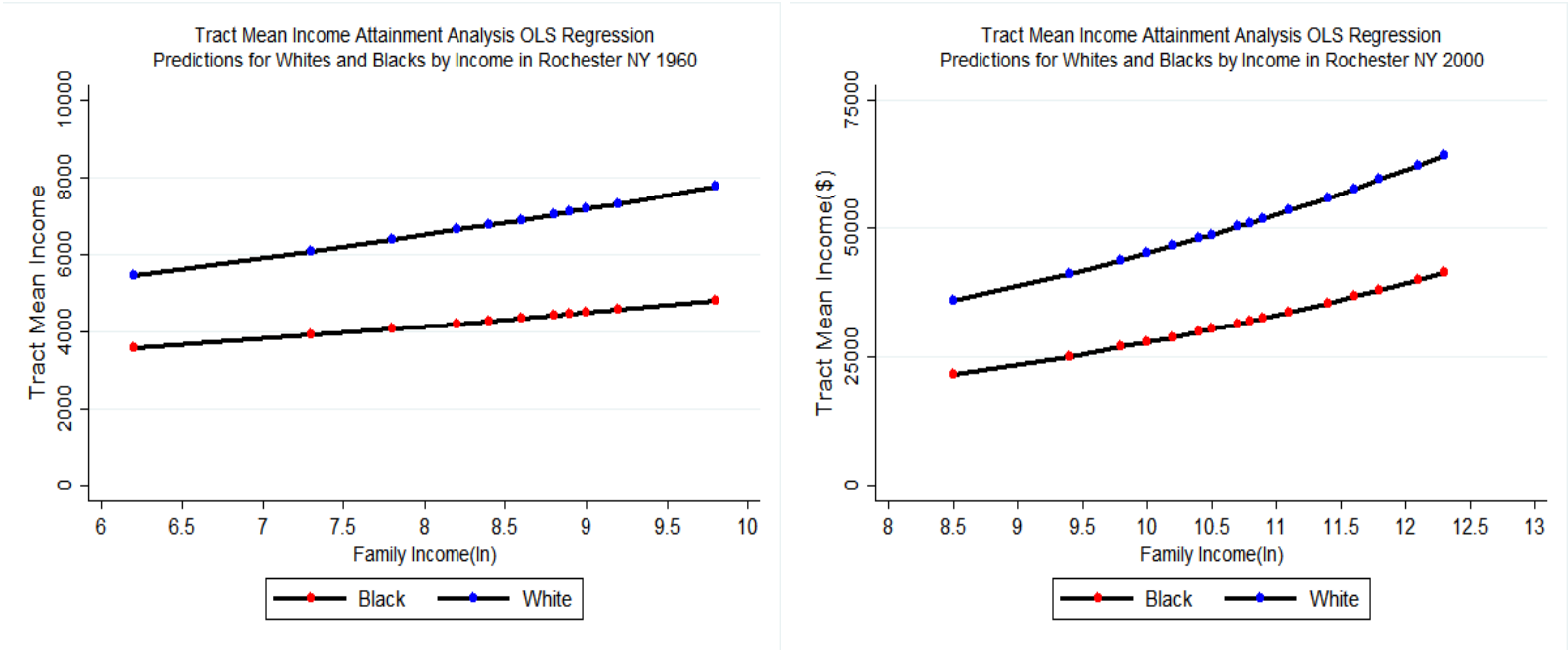


Figure 7 Dissimilarity Index (D) Attainment Analysis Fractional Regression White-Black Comparisons for Atlanta, GA 1960 and 2000

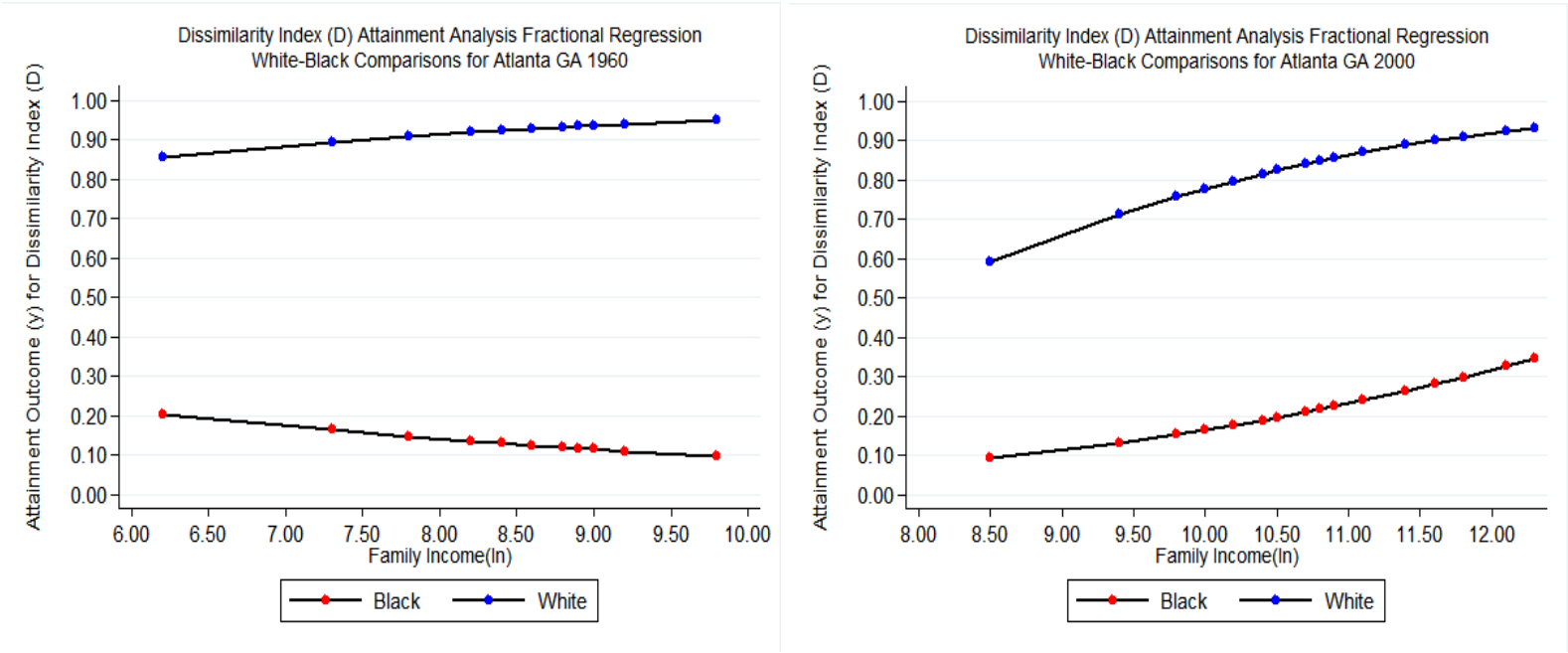
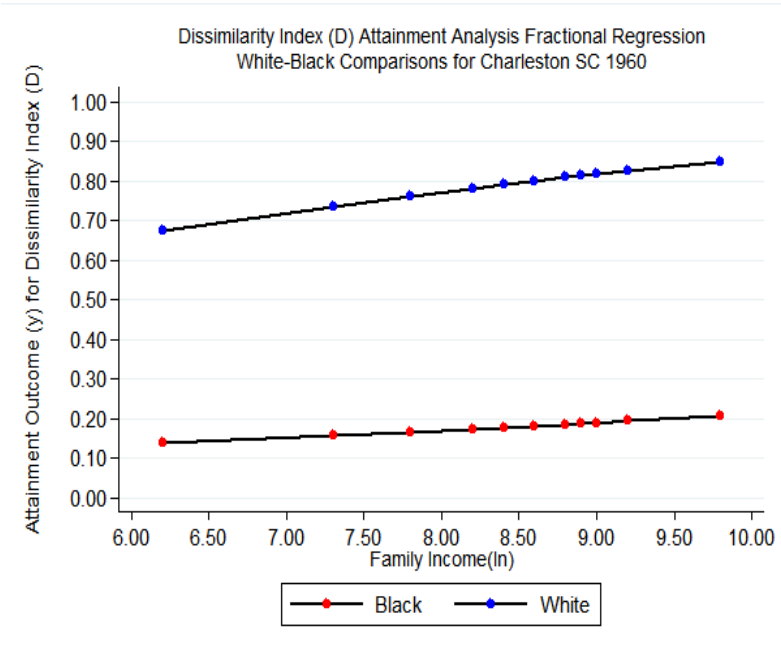


Figure 8 Dissimilarity Index (D) Attainment Analysis Fractional Regression White-Black Comparisons for Charleston, SC 1960 and 2000



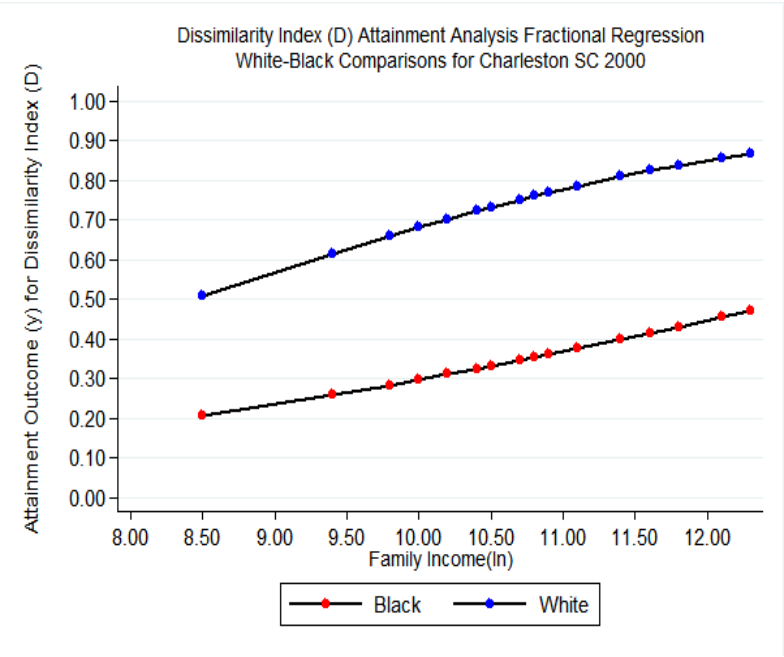
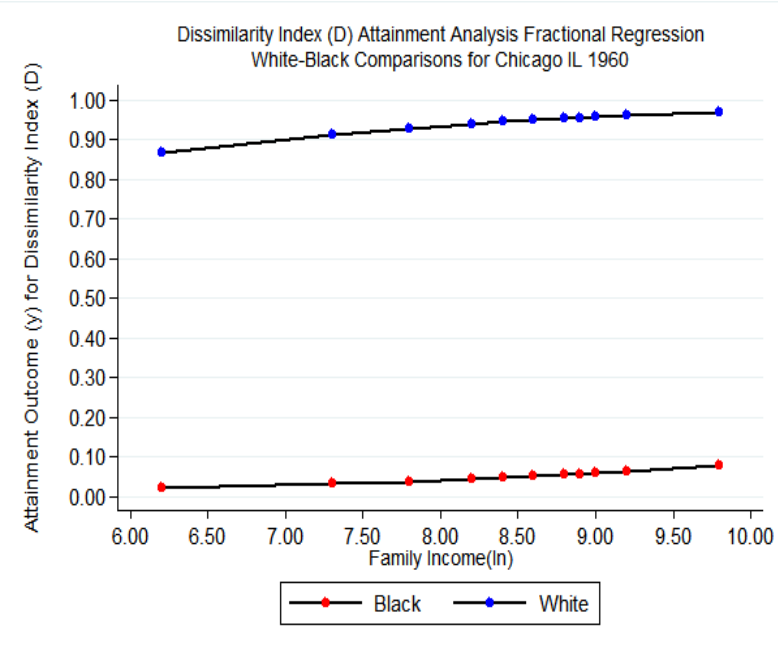


Figure 9 Dissimilarity Index (D) Attainment Analysis Fractional Regression White-Black Comparisons for Chicago, IL 1960 and 2000



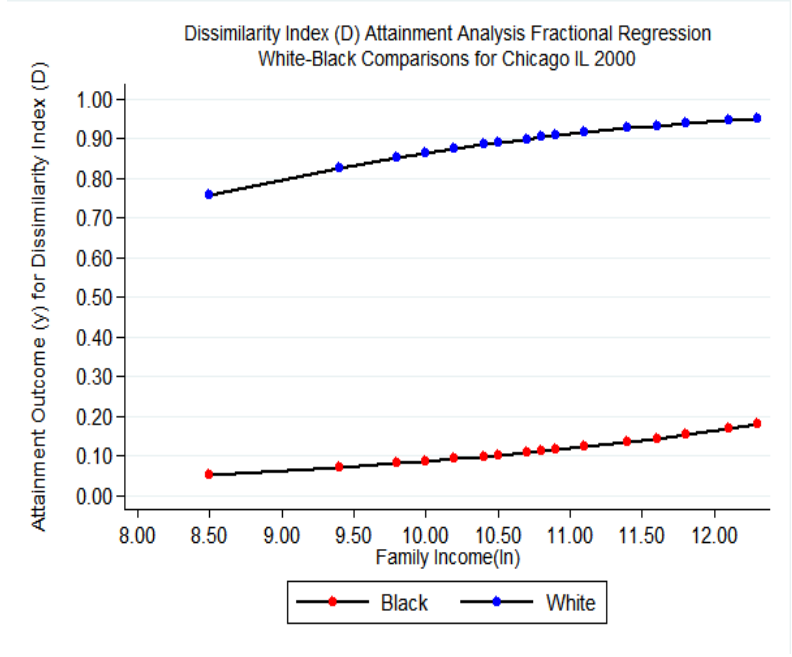


Figure 10 Dissimilarity Index (D) Attainment Analysis Fractional Regression White-Black Comparisons for Pittsburgh, PA 1960 and 2000

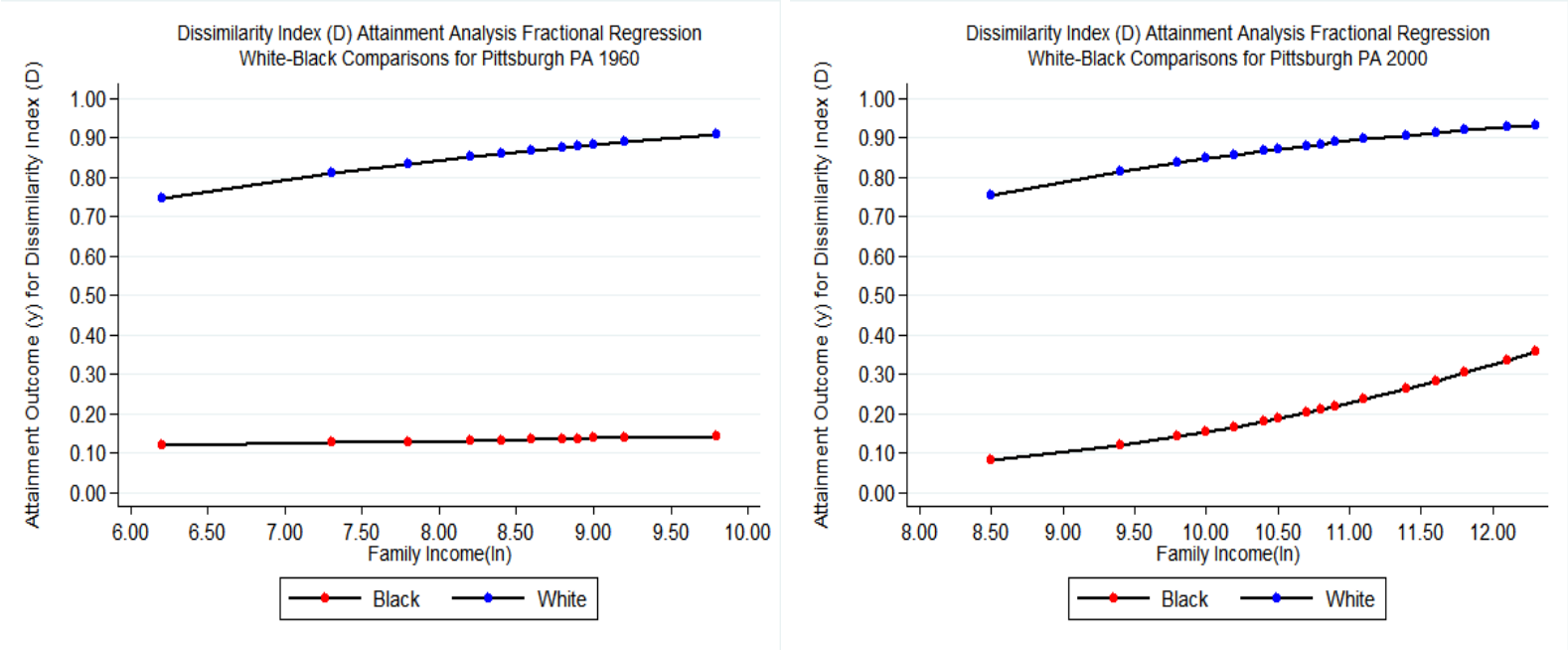
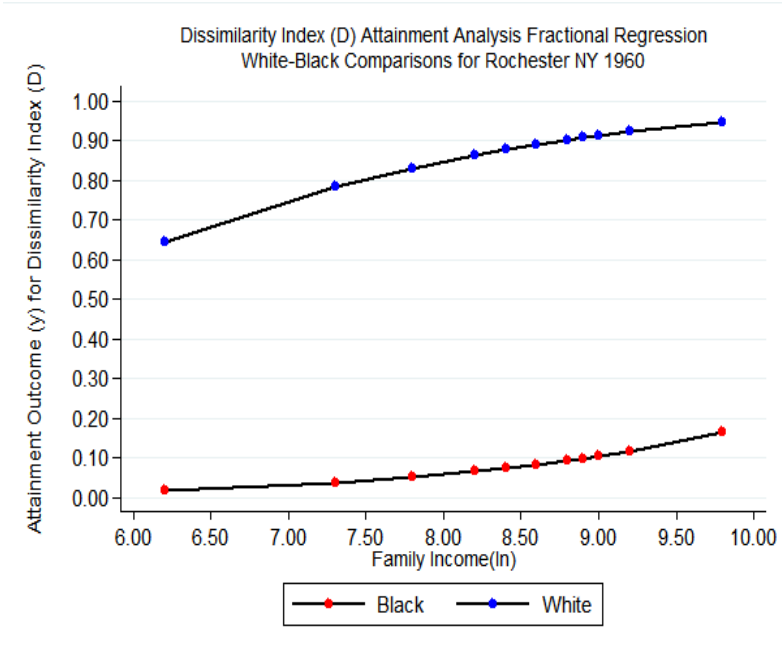


Figure 11 Dissimilarity Index (D) Attainment Analysis Fractional Regression White-Black Comparisons for Rochester, NY 1960 and 2000



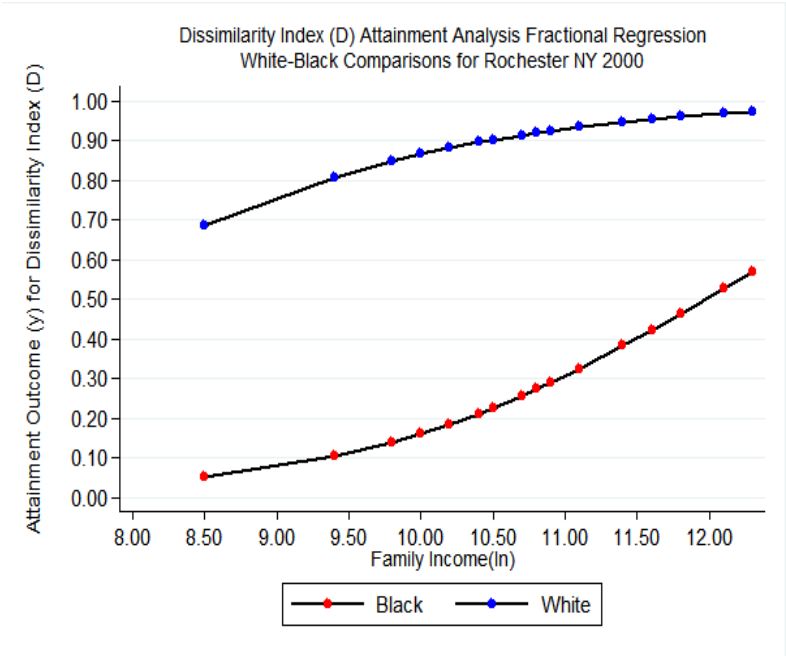


Figure 12 Separation Index (S) Attainment Analysis Fractional Regression White-Black Comparisons for Atlanta, GA 1960 and 2000

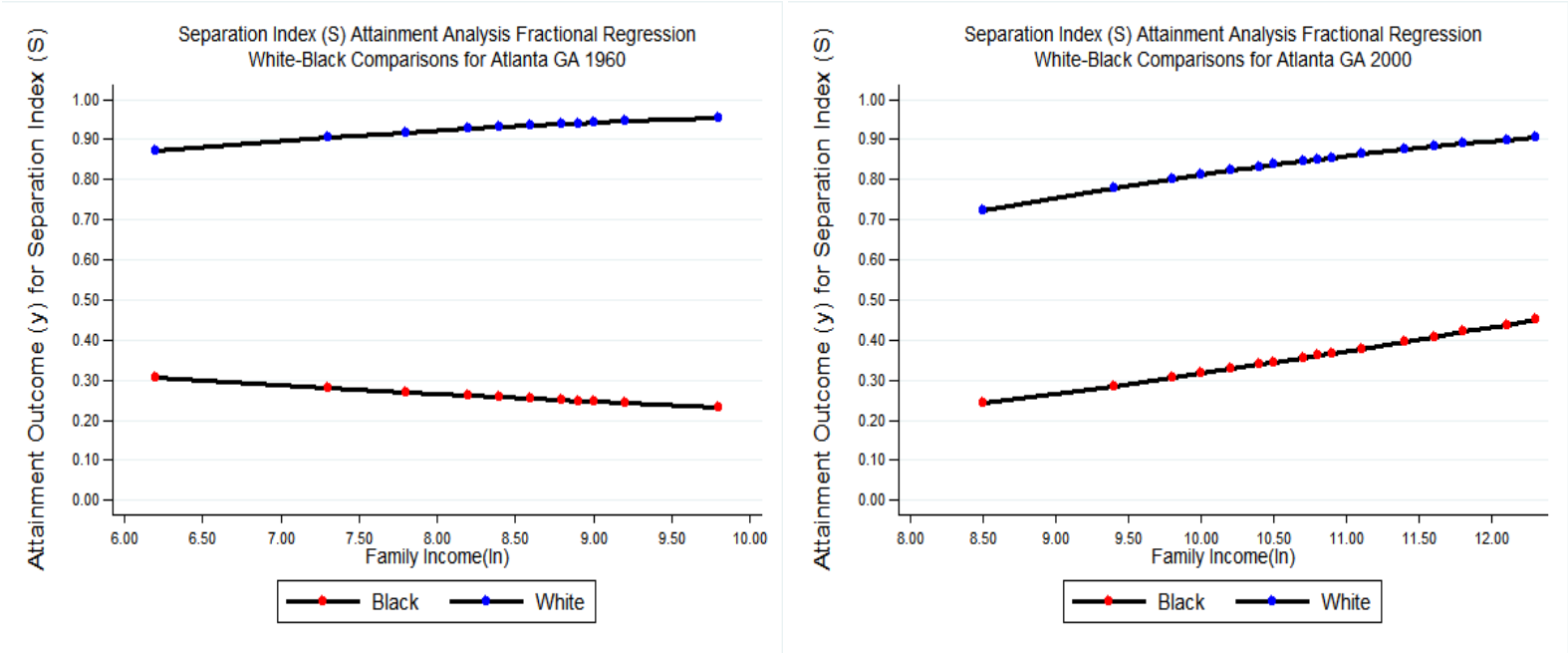


Figure 13 Separation Index (S) Attainment Analysis Fractional Regression White-Black Comparisons for Charleston, SC 1960 and 2000

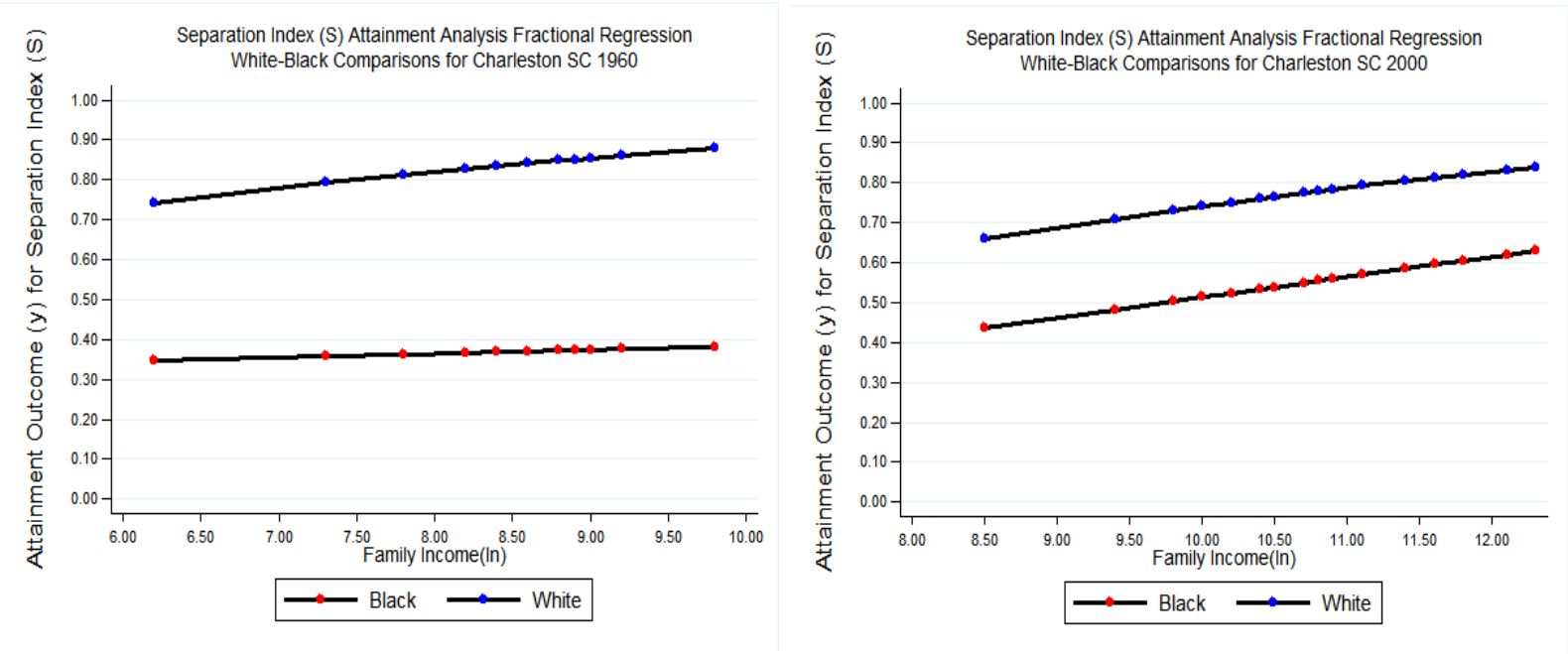


Figure 14 Fractional Separation Index (S) Attainment Analysis Fractional Regression White-Black Comparisons for Chicago, IL 1960 and 2000

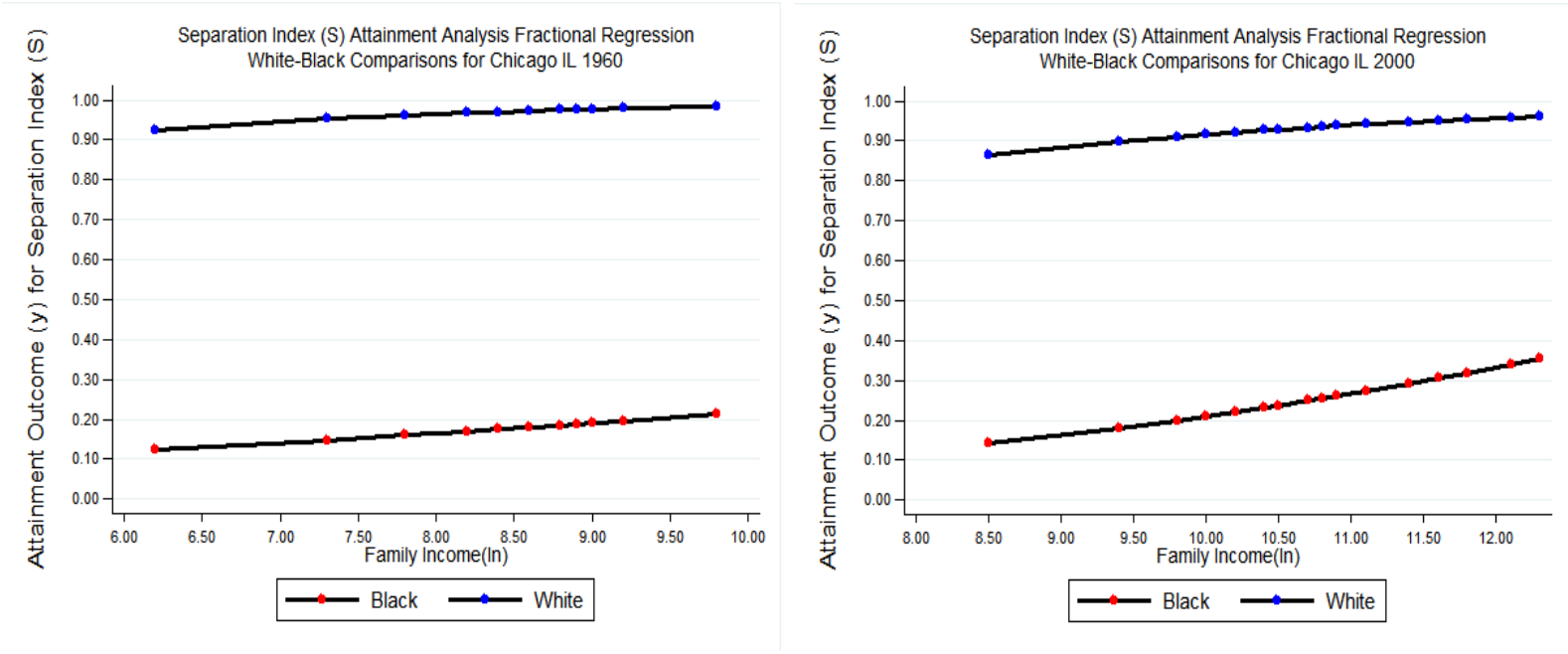


Figure 15 Separation Index (S) Attainment Analysis Fractional Regression White-Black Comparisons for Pittsburgh, PA 1960 and 2000

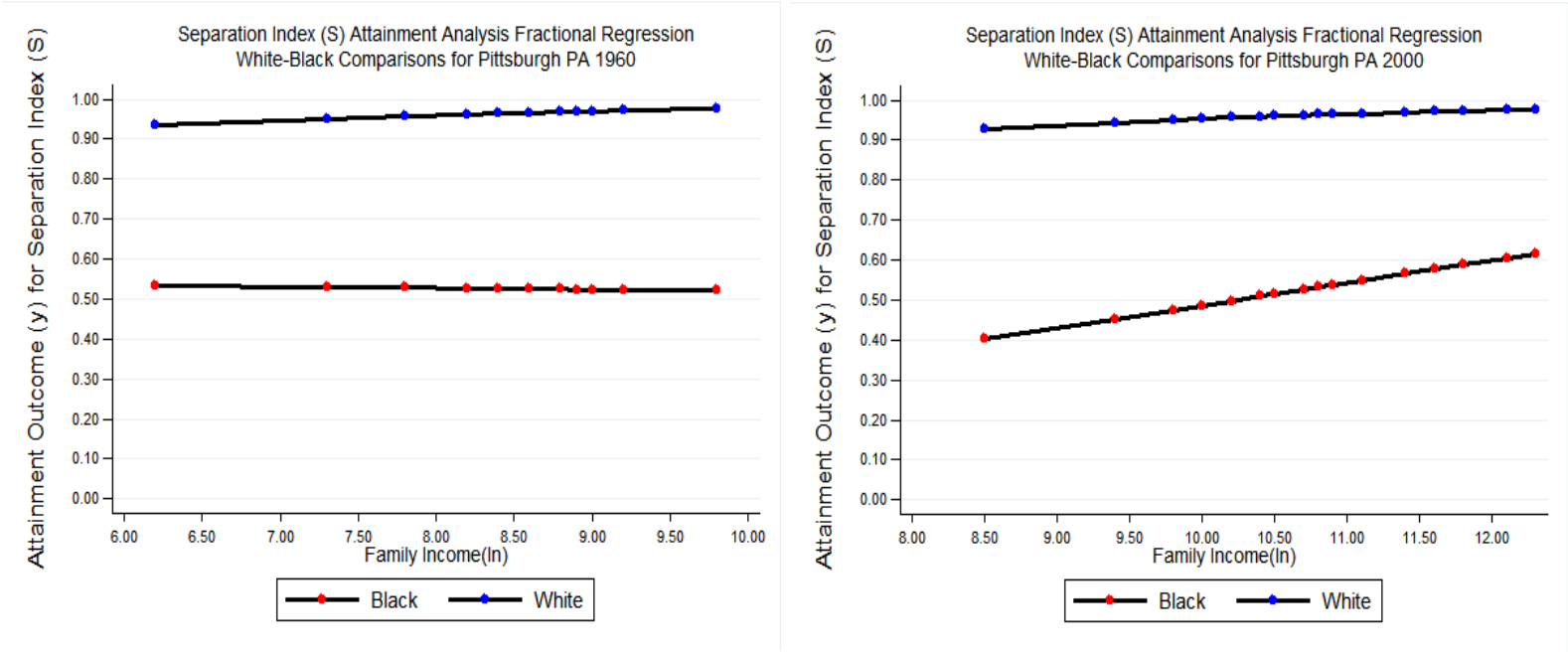
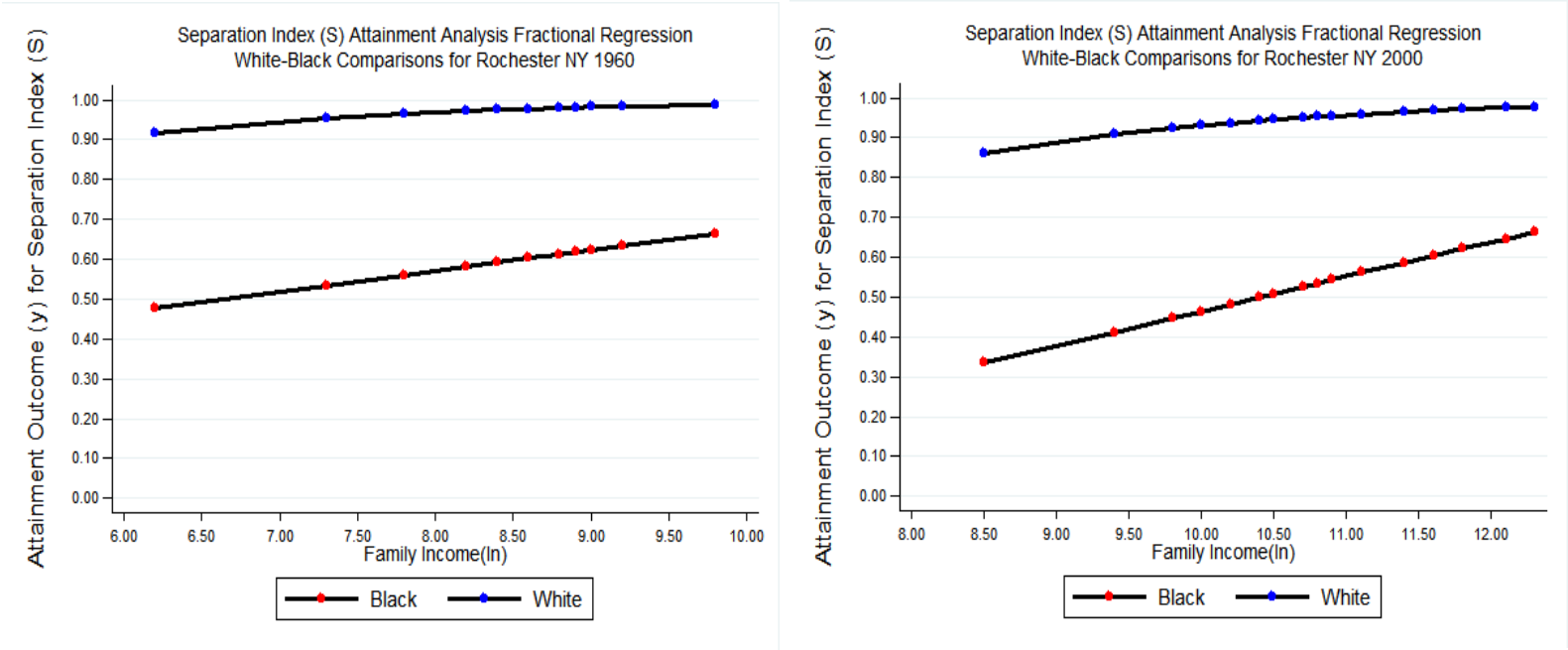


Figure 16 Separation Index (S) Attainment Analysis Fractional Regression White-Black Comparisons for Rochester, NY 1960 and 2000



APPENDIX-C

Table 23 Group Means on Tract Mean Income Attainment for Whites and Blacks by Income, 1960

Metropolitan	State	Black Avg. Tract Income (X)	White Avg. Tract Income (Y)	Absolute Difference of |X-Y|	Relative Percentage Difference
Akron	OH	$4,622	$6,657	$2,036	69.43
Atlanta	GA	$3,288	$5,968	$2,680	55.09
Augusta	GA	$2,614	$4,500	$1,886	58.10
Austin	TX	$3,122	$4,919	$1,798	63.46
Baltimore	MD	$4,037	$6,411	$2,374	62.97
Baton Rogue	LA	$3,530	$6,114	$2,584	57.73
Beaumont	TX	$3,103	$5,880	$2,777	52.78
Birmingham	AL	$3,215	$5,190	$1,975	61.95
Canton	OH	$4,365	$5,937	$1,572	73.53
Charleston	SC	$2,510	$4,552	$2,042	55.14
Charlotte	NC	$3,150	$5,937	$2,787	53.05
Chattanooga	TN	$2,712	$4,871	$2,159	55.68
Chicago	IL	$4,345	$7,614	$3,268	57.07
Cincinnati	OH	$3,632	$6,488	$2,856	55.98
Cleveland	OH	$4,179	$7,203	$3,024	58.02
Columbus	GA	$2,627	$4,329	$1,703	60.68
Columbus	OH	$3,988	$6,370	$2,382	62.61
Dayton	OH	$4,070	$6,821	$2,750	59.68
Detroit	MI	$3,806	$6,963	$3,157	54.66
Dallas	TX	$3,120	$6,013	$2,893	51.89
Fort Worth	TX	$2,991	$5,417	$2,426	55.22
Galveston	TX	$3,335	$5,096	$1,762	65.43
Gary	IN	$4,399	$6,659	$2,260	66.06
Greensboro	NC	$3,386	$5,403	$2,018	62.66
Greensville	SC	$3,543	$4,392	$849	80.67
Harrisburg	PA	$4,183	$5,710	$1,527	73.26
Hartford	CT	$4,472	$7,159	$2,688	62.46
Houston	TX	$3,339	$6,189	$2,850	53.95
Indianapolis	IN	$4,236	$6,713	$2,477	63.10
Jacksonville	FL	$2,929	$4,784	$1,855	61.23
Kansas City	MO	$3,754	$6,457	$2,703	58.14
Knoxville	TN	$2,709	$4,052	$1,343	66.86
Lexington	KY	$2,913	$5,202	$2,289	56.00
Little Rock	AR	$2,996	$4,852	$1,856	61.75

Table 23 Group Means on Tract Mean Income Attainment for Whites and Blacks by Income, 1960

Metropolitan	State	Black Avg. Tract Income (X)	White Avg. Tract Income (Y)	Absolute Difference of |X-Y|	Relative Percentage Difference
Louisville	KY	$3,296	$5,630	$2,334	58.54
Macon	GA	$3,050	$5,120	$2,070	59.57
Memphis	TN	$2,852	$5,197	$2,345	54.87
Miami	FL	$3,261	$5,078	$1,817	64.23
Mobile	AL	$3,098	$5,722	$2,623	54.15
Monroe	LA	$2,221	$5,146	$2,925	43.15
Montgomery	AL	$2,490	$5,447	$2,957	45.71
Nashville	TN	$2,791	$5,393	$2,601	51.76
New Orleans	LA	$3,249	$5,469	$2,219	59.42
New York	NY	$4,383	$6,640	$2,256	66.02
Norfolk	VA	$3,009	$4,713	$1,704	63.85
Omaha	NE	$3,842	$6,127	$2,285	62.70
Orlando	FL	$3,086	$5,283	$2,197	58.41
Philadelphia	PA	$4,082	$6,549	$2,467	62.33
Pittsburgh	PA	$4,031	$5,794	$1,762	69.58
Raleigh	NC	$2,847	$4,819	$1,972	59.08
Richmond	VA	$3,365	$6,464	$3,099	52.06
Rochester	NY	$4,209	$7,090	$2,882	59.36
Saginaw	MI	$3,971	$5,813	$1,842	68.31
St. Louis	MO	$3,389	$6,301	$2,912	53.78
San Antonio	TX	$3,472	$4,450	$978	78.02
Savannah	GA	$2,825	$5,153	$2,328	54.82
Shreveport	LA	$2,735	$5,173	$2,438	52.88
Tampa	FL	$2,900	$4,231	$1,331	68.54
Toledo	OH	$3,878	$6,395	$2,517	60.64
Tyler	TX	$2,855	$4,579	$1,724	62.35
Waco	TX	$2,707	$4,415	$1,708	61.31
Washington	DC	$4,922	$8,323	$3,401	59.14
Wilmington	NC	$4,178	$7,047	$2,869	59.28
Youngstown	OH	$4,021	$6,010	$1,989	66.90

Source: 1960 National Historical Geographic Information Systems Data

Table 24 Group Means on Tract Mean Income Attainment for Whites and Blacks by Income, 2000

Metropolitan	State	Black Avg. Tract Income (X)	White Avg. Tract Income (Y)	Absolute Difference of |X-Y|	Relative Percentage Difference
Akron	OH	$32,580	$50,712	$18,132	64.25
Atlanta	GA	$40,908	$61,750	$20,842	66.25
Augusta	GA	$33,632	$45,103	$11,471	74.57
Austin	TX	$40,571	$58,929	$18,358	68.85
Baltimore	MD	$37,140	$61,108	$23,968	60.78
Baton Rouge	LA	$30,938	$48,735	$17,797	63.48
Beaumont	TX	$27,714	$42,561	$14,847	65.12
Birmingham	AL	$29,321	$51,301	$21,980	57.15
Canton	OH	$31,201	$44,849	$13,648	69.57
Charleston	SC	$35,284	$48,223	$12,939	73.17
Charlotte	NC	$38,686	$53,661	$14,975	72.09
Chattanooga	TN	$30,085	$43,468	$13,383	69.21
Chicago	IL	$34,838	$63,841	$29,003	54.57
Cincinnati	OH	$33,238	$52,923	$19,685	62.80
Cleveland	OH	$29,521	$52,601	$23,080	56.12
Columbus	GA	$29,871	$43,526	$13,655	68.63
Columbus	OH	$33,911	$53,503	$19,592	63.38
Dayton	OH	$32,749	$49,011	$16,262	66.82
Detroit	MI	$33,030	$59,817	$26,787	55.22
Dallas	TX	$38,219	$57,766	$19,547	66.16
Fort Worth	TX	$37,387	$53,196	$15,809	70.28
Galveston	TX	$33,482	$50,146	$16,664	66.77
Gary	IN	$29,711	$52,241	$22,530	56.87
Greensboro	NC	$35,460	$48,652	$13,192	72.88
Greensville	SC	$35,228	$44,317	$9,089	79.49
Harrisburg	PA	$32,896	$49,847	$16,951	65.99
Hartford	CT	$37,387	$62,147	$24,760	60.16
Houston	TX	$34,411	$53,809	$19,398	63.95
Indianapolis	IN	$37,188	$53,368	$16,180	69.68
Jacksonville	FL	$34,502	$49,968	$15,466	69.05
Kansas City	MO	$33,675	$55,132	$21,457	61.08
Knoxville	TN	$29,799	$43,126	$13,327	69.10
Lexington	KY	$34,169	$45,971	$11,802	74.33
Little Rock	AR	$32,140	$46,641	$14,501	68.91
Louisville	KY	$29,360	$48,529	$19,169	60.50
Macon	GA	$31,412	$47,702	$16,290	65.85
Memphis	TN	$30,854	$54,438	$23,584	56.68

Table 24 Group Means on Tract Mean Income Attainment for Whites and Blacks by Income, 2000

Metropolitan	State	Black Avg. Tract Income (X)	White Avg. Tract Income (Y)	Absolute Difference of |X-Y|	Relative Percentage Difference
Miami	FL	$28,450	$40,334	$11,884	70.54
Mobile	AL	$26,820	$42,978	$16,158	62.40
Monroe	LA	$23,064	$43,504	$20,440	53.02
Montgomery	AL	$32,050	$48,594	$16,544	65.95
Nashville	TN	$34,256	$52,248	$17,992	65.56
New Orleans	LA	$27,749	$46,876	$19,127	59.20
New Orleans	NY	$29,842	$53,806	$23,964	55.46
Norfolk	VA	$35,519	$50,807	$15,288	69.91
Omaha	NE	$32,995	$53,357	$20,362	61.84
Orlando	FL	$35,608	$47,431	$11,823	75.07
Philadelphia	PA	$32,729	$60,003	$27,274	54.55
Pittsburgh	PA	$28,752	$45,366	$16,614	63.38
Raleigh	NC	$42,607	$59,652	$17,045	71.43
Richmond	VA	$36,862	$59,408	$22,546	62.05
Rochester	NY	$28,955	$51,880	$22,925	55.81
Saginaw	MI	$24,972	$46,586	$21,614	53.60
St. Louis	MO	$32,686	$54,113	$21,427	60.40
San Antonio	TX	$37,222	$43,761	$6,539	85.06
Savannah	GA	$31,737	$49,899	$18,162	63.60
Shreveport	LA	$27,034	$43,065	$16,031	62.77
Tampa	FL	$32,236	$44,484	$12,248	72.47
Toledo	OH	$29,001	$48,091	$19,090	60.30
Tyler	TX	$32,586	$44,373	$11,787	73.44
Waco	TX	$26,600	$42,000	$15,400	63.33
Washington	DC	$50,395	$74,650	$24,255	67.51
Wilmington	NC	$33,040	$45,354	$12,314	72.85
Youngstown	OH	$26,599	$41,982	$15,383	63.36

Source: 2000 decennial census

Table 25 White-Black Average Parity Contact (D) with Whites and Overall Segregation Scores, 1960

		Dissimilarity Contact		
Metropolitan	State	Whites	Blacks	Index Score
Akron	OH	0.86	0.08	0.79
Atlanta	GA	0.93	0.14	0.79
Augusta	GA	0.84	0.11	0.73
Austin	TX	0.77	0.10	0.67
Baltimore	MD	0.92	0.10	0.82
Baton Rouge	LA	0.85	0.16	0.70
Beaumont	TX	0.87	0.07	0.80
Birmingham	AL	0.80	0.14	0.65
Canton	OH	0.85	0.08	0.76
Charleston	SC	0.80	0.16	0.64
Charlotte	NC	0.91	0.13	0.78
Chattanooga	TN	0.91	0.12	0.79
Chicago	IL	0.96	0.05	0.91
Cincinnati	OH	0.92	0.07	0.86
Cleveland	OH	0.95	0.03	0.91
Columbus	GA	0.81	0.10	0.71
Columbus	OH	0.88	0.09	0.79
Dayton	OH	0.96	0.03	0.92
Detroit	MI	0.92	0.03	0.89
Dallas	TX	0.91	0.09	0.82
Fort Worth	TX	0.92	0.07	0.86
Galveston	TX	0.87	0.21	0.66
Gary	IN	0.93	0.03	0.90
Greensboro	NC	0.90	0.20	0.70
Greensville	SC	0.80	0.37	0.43
Harrisburg	PA	0.87	0.10	0.77
Hartford	CT	0.92	0.11	0.80
Houston	TX	0.91	0.10	0.81
Indianapolis	IN	0.90	0.07	0.83
Jacksonville	FL	0.89	0.10	0.79
Kansas City	MO	0.92	0.08	0.84
Knoxville	TN	0.89	0.13	0.77
Lexington	KY	0.87	0.12	0.75
Little Rock	AR	0.84	0.20	0.64

Table 25 White-Black Average Parity Contact (D) with Whites and Overall Segregation Scores, 1960

		Dissimilarity Contact		
Metropolitan	State	Whites	Blacks	Index Score
Louisville	KY	0.90	0.10	0.80
Macon	GA	0.83	0.22	0.61
Memphis	TN	0.83	0.10	0.73
Miami	FL	0.95	0.05	0.90
Mobile	AL	0.88	0.14	0.74
Monroe	LA	0.91	0.02	0.89
Montgomery	AL	0.86	0.11	0.75
Nashville	TN	0.90	0.09	0.81
New Orleans	LA	0.86	0.19	0.67
New York	NY	0.88	0.11	0.77
Norfolk	VA	0.93	0.14	0.78
Omaha	NE	0.95	0.06	0.88
Orlando	FL	0.90	0.03	0.87
Philadelphia	PA	0.90	0.09	0.81
Pittsburgh	PA	0.87	0.13	0.74
Raleigh	NC	0.75	0.15	0.59
Richmond	VA	0.91	0.12	0.79
Rochester	NY	0.91	0.06	0.84
Saginaw	MI	0.89	0.08	0.81
St. Louis	MO	0.93	0.07	0.86
San Antonio	TX	0.88	0.08	0.79
Savannah	GA	0.87	0.15	0.72
Shreveport	LA	0.86	0.12	0.74
Tampa	FL	0.90	0.06	0.85
Toledo	OH	0.90	0.06	0.84
Tyler	TX	0.78	0.20	0.58
Waco	TX	0.85	0.18	0.67
Washington	DC	0.91	0.10	0.81
Wilmington	NC	0.82	0.07	0.75
Youngstown	OH	0.82	0.06	0.76

Results rounded to the nearest hundredth
Source: 1960 National Historical Geographic Information Systems Data

Table 26 White-Black Average Parity Contact with Whites and Overall Segregation Scores, 2000

		Dissimilarity Contact		
Metropolitan	State	Whites	Blacks	Index Score
Akron	OH	0.89	0.18	0.70
Atlanta	GA	0.87	0.20	0.67
Augusta	GA	0.75	0.27	0.48
Austin	TX	0.79	0.25	0.54
Baltimore	MD	0.86	0.15	0.71
Baton Rouge	LA	0.84	0.18	0.66
Beaumont	TX	0.86	0.12	0.73
Birmingham	AL	0.90	0.15	0.74
Canton	OH	0.87	0.24	0.63
Charleston	SC	0.76	0.30	0.46
Charlotte	NC	0.81	0.26	0.55
Chattanooga	TN	0.90	0.17	0.73
Chicago	IL	0.91	0.10	0.82
Cincinnati	OH	0.88	0.10	0.78
Cleveland	OH	0.91	0.10	0.81
Columbus	GA	0.85	0.25	0.60
Columbus	OH	0.84	0.16	0.68
Dayton	OH	0.92	0.17	0.75
Detroit	MI	0.95	0.07	0.88
Dallas	TX	0.84	0.23	0.61
Fort Worth	TX	0.82	0.19	0.62
Galveston	TX	0.80	0.19	0.61
Gary	IN	0.94	0.09	0.85
Greensboro	NC	0.81	0.22	0.59
Greensville	SC	0.66	0.31	0.35
Harrisburg	PA	0.89	0.13	0.76
Hartford	CT	0.86	0.17	0.69
Houston	TX	0.84	0.19	0.65
Indianapolis	IN	0.87	0.12	0.75
Jacksonville	FL	0.79	0.22	0.57
Kansas City	MO	0.90	0.16	0.73
Knoxville	TN	0.82	0.19	0.63
Lexington	KY	0.77	0.25	0.52
Little Rock	AR	0.85	0.22	0.63

Table 26 White-Black Average Parity Contact with Whites and Overall Segregation Scores, 2000

		Dissimilarity Contact		
Metropolitan	State	Whites	Blacks	Index Score
Louisville	KY	0.89	0.20	0.68
Macon	GA	0.84	0.29	0.55
Memphis	TN	0.85	0.15	0.70
Miami	FL	0.87	0.13	0.74
Mobile	AL	0.84	0.22	0.63
Monroe	LA	0.86	0.13	0.73
Montgomery	AL	0.83	0.24	0.59
Nashville	TN	0.81	0.22	0.60
New Orleans	LA	0.86	0.15	0.70
New York	NY	0.89	0.09	0.80
Norfolk	VA	0.77	0.27	0.49
Omaha	NE	0.88	0.18	0.70
Orlando	FL	0.84	0.28	0.55
Philadelphia	PA	0.90	0.14	0.76
Pittsburgh	PA	0.88	0.16	0.72
Raleigh	NC	0.80	0.33	0.47
Richmond	VA	0.82	0.22	0.60
Rochester	NY	0.92	0.18	0.74
Saginaw	MI	0.93	0.12	0.80
St. Louis	MO	0.89	0.13	0.76
San Antonio	TX	0.77	0.28	0.50
Savannah	GA	0.83	0.22	0.61
Shreveport	LA	0.83	0.25	0.58
Tampa	FL	0.85	0.20	0.65
Toledo	OH	0.88	0.14	0.74
Tyler	TX	0.83	0.31	0.52
Waco	TX	0.76	0.22	0.54
Washington	DC	0.85	0.21	0.64
Wilmington	NC	0.70	0.21	0.49
Youngstown	OH	0.91	0.14	0.76

Results rounded to the nearest hundredth

Source: 2000 decennial census

Table 27 White-Black Average Contact with Whites and Overall Segregation Scores, 1960

		Separation Contact		
Metropolitan	State	Whites	Blacks	Index Score
Akron	OH	0.96	0.53	0.43
Atlanta	GA	0.94	0.27	0.67
Augusta	GA	0.88	0.27	0.62
Austin	TX	0.94	0.47	0.47
Baltimore	MD	0.94	0.26	0.68
Baton Rouge	LA	0.87	0.34	0.54
Beaumont	TX	0.93	0.29	0.64
Birmingham	AL	0.85	0.36	0.49
Canton	OH	0.97	0.62	0.36
Charleston	SC	0.84	0.36	0.48
Charlotte	NC	0.94	0.27	0.67
Chattanooga	TN	0.94	0.27	0.68
Chicago	IL	0.98	0.17	0.80
Cincinnati	OH	0.96	0.26	0.70
Cleveland	OH	0.97	0.21	0.77
Columbus	GA	0.88	0.35	0.53
Columbus	OH	0.96	0.41	0.54
Dayton	OH	0.97	0.21	0.76
Detroit	MI	0.96	0.28	0.68
Dallas	TX	0.96	0.30	0.67
Fort Worth	TX	0.97	0.27	0.70
Galveston	TX	0.89	0.45	0.44
Gary	IN	0.97	0.20	0.76
Greensboro	NC	0.92	0.36	0.56
Greensville	SC	0.88	0.69	0.19
Harrisburg	PA	0.97	0.58	0.39
Hartford	CT	0.98	0.54	0.44
Houston	TX	0.94	0.27	0.67
Indianapolis	IN	0.95	0.33	0.62
Jacksonville	FL	0.90	0.19	0.71
Kansas City	MO	0.96	0.31	0.65
Knoxville	TN	0.93	0.38	0.55
Lexington	KY	0.93	0.50	0.44
Little Rock	AR	0.90	0.49	0.41

Table 27 White-Black Average Contact with Whites and Overall Segregation Scores, 1960

		Separation Contact		
Metropolitan	State	Whites	Blacks	Index Score
Louisville	KY	0.96	0.39	0.57
Macon	GA	0.84	0.38	0.46
Memphis	TN	0.87	0.29	0.59
Miami	FL	0.97	0.21	0.77
Mobile	AL	0.89	0.30	0.58
Monroe	LA	0.93	0.14	0.79
Montgomery	AL	0.88	0.25	0.63
Nashville	TN	0.95	0.31	0.64
New Orleans	LA	0.87	0.35	0.52
New York	NY	0.96	0.42	0.54
Norfolk	VA	0.93	0.24	0.69
Omaha	NE	0.98	0.41	0.57
Orlando	FL	0.96	0.34	0.62
Philadelphia	PA	0.95	0.32	0.63
Pittsburgh	PA	0.97	0.53	0.44
Raleigh	NC	0.88	0.44	0.44
Richmond	VA	0.93	0.25	0.67
Rochester	NY	0.98	0.58	0.40
Saginaw	MI	0.96	0.45	0.51
St. Louis	MO	0.97	0.26	0.70
San Antonio	TX	0.96	0.54	0.42
Savannah	GA	0.88	0.28	0.60
Shreveport	LA	0.88	0.29	0.59
Tampa	FL	0.96	0.38	0.58
Toledo	OH	0.97	0.36	0.61
Tyler	TX	0.87	0.46	0.42
Waco	TX	0.92	0.50	0.42
Washington	DC	0.93	0.26	0.67
Wilmington	NC	0.95	0.50	0.45
Youngstown	OH	0.94	0.54	0.40

Results rounded to the nearest hundredth

Source: 1960 National Historical Geographic Information Systems Data

Table 28 White-Black Average Contact with Whites and Overall Segregation Scores, 2000

		Separation Contact		
Metropolitans	States	Whites	Blacks	Index Score
Akron	OH	0.95	0.50	0.45
Atlanta	GA	0.86	0.35	0.52
Augusta	GA	0.77	0.47	0.29
Austin	TX	0.93	0.70	0.23
Baltimore	MD	0.89	0.31	0.57
Baton Rouge	LA	0.85	0.34	0.51
Beaumont	TX	0.89	0.34	0.56
Birmingham	AL	0.89	0.28	0.62
Canton	OH	0.96	0.69	0.27
Charleston	SC	0.78	0.52	0.26
Charlotte	NC	0.87	0.53	0.34
Chattanooga	TN	0.94	0.41	0.52
Chicago	IL	0.94	0.23	0.71
Cincinnati	OH	0.95	0.39	0.56
Cleveland	OH	0.95	0.25	0.70
Columbus	GA	0.76	0.35	0.42
Columbus	OH	0.93	0.48	0.45
Dayton	OH	0.94	0.39	0.55
Detroit	MI	0.95	0.17	0.79
Dallas	TX	0.90	0.50	0.40
Fort Worth	TX	0.92	0.57	0.35
Galveston	TX	0.90	0.54	0.36
Gary	IN	0.95	0.21	0.75
Greensboro	NC	0.88	0.49	0.39
Greensville	SC	0.71	0.53	0.18
Harrisburg	PA	0.96	0.52	0.45
Hartford	CT	0.95	0.51	0.44
Houston	TX	0.89	0.43	0.45
Indianapolis	IN	0.94	0.42	0.51
Jacksonville	FL	0.88	0.47	0.41
Kansas City	MO	0.94	0.43	0.52
Knoxville	TN	0.97	0.63	0.33
Lexington	KY	0.93	0.67	0.26
Little Rock	AR	0.88	0.46	0.42

Table 28 White-Black Average Contact with Whites and Overall Segregation Scores, 2000

		Separation Contact		
Metropolitans	States	Whites	Blacks	Index Score
Louisville	KY	0.94	0.44	0.50
Macon	GA	0.77	0.42	0.35
Memphis	TN	0.81	0.26	0.56
Miami	FL	0.91	0.35	0.56
Mobile	AL	0.87	0.37	0.50
Monroe	LA	0.89	0.25	0.63
Montgomery	AL	0.80	0.36	0.44
Nashville	TN	0.91	0.52	0.39
New Orleans	LA	0.84	0.26	0.58
New York	NY	0.89	0.24	0.65
Norfolk	VA	0.79	0.46	0.34
Omaha	NE	0.96	0.55	0.41
Orlando	FL	0.91	0.59	0.32
Philadelphia	PA	0.93	0.31	0.62
Pittsburgh	PA	0.96	0.49	0.47
Raleigh	NC	0.84	0.55	0.29
Richmond	VA	0.83	0.40	0.43
Rochester	NY	0.95	0.48	0.48
Saginaw	MI	0.97	0.35	0.61
St. Louis	MO	0.93	0.33	0.61
San Antonio	TX	0.93	0.74	0.19
Savannah	GA	0.82	0.36	0.45
Shreveport	LA	0.80	0.38	0.43
Tampa	FL	0.94	0.55	0.40
Toledo	OH	0.94	0.41	0.53
Tyler	TX	0.87	0.56	0.31
Waco	TX	0.89	0.58	0.30
Washington	DC	0.86	0.35	0.50
Wilmington	NC	0.89	0.61	0.28
Youngstown	OH	0.96	0.47	0.49

Results rounded to the nearest hundredth

Source: 2000 decennial census

Table 29 Standardization on Group Distributions and Group Rates of Return of Predicted Group Means on D for Whites and Blacks, 1960

Metropolitan	State	WD/WR[1]	BD/WR[2]	WD/BR[3]	BD/BR[4]
Akron	OH	0.86	0.84	0.09	0.08
Atlanta	GA	0.93	0.91	0.12	0.14
Augusta	GA	0.84	0.85	0.15	0.11
Austin	TX	0.77	0.74	0.09	0.10
Baltimore	MD	0.92	0.90	0.10	0.10
Baton Rouge	LA	0.85	0.80	0.16	0.16
Beaumont	TX	0.86	0.80	0.07	0.07
Birmingham	AL	0.79	0.74	0.13	0.14
Canton	OH	0.84	0.80	0.11	0.09
Charleston	SC	0.80	0.75	0.19	0.16
Charlotte	NC	0.90	0.85	0.12	0.13
Chattanooga	TN	0.91	0.89	0.11	0.12
Chicago	IL	0.95	0.94	0.06	0.05
Cincinnati	OH	0.92	0.89	0.08	0.07
Cleveland	OH	0.94	0.92	0.04	0.03
Columbus	GA	0.81	0.79	0.13	0.10
Columbus	OH	0.87	0.83	0.09	0.09
Dayton	OH	0.95	0.94	0.04	0.03
Detroit	MI	0.91	0.86	0.04	0.03
Dallas	TX	0.90	0.85	0.07	0.09
Fort Worth	TX	0.92	0.89	0.07	0.07
Galveston	TX	0.87	0.84	0.23	0.21
Gary	IN	0.93	0.92	0.03	0.03
Greensboro	NC	0.89	0.85	0.19	0.20
Greensville	SC	0.80	0.78	0.45	0.38
Harrisburg	PA	0.87	0.86	0.12	0.10
Hartford	CT	0.91	0.87	0.18	0.12
Houston	TX	0.90	0.86	0.10	0.10
Indianapolis	IN	0.89	0.86	0.08	0.07
Jacksonville	FL	0.88	0.85	0.10	0.10
Kansas City	MO	0.91	0.87	0.08	0.08
Knoxville	TN	0.89	0.86	0.12	0.13
Lexington	KY	0.85	0.77	0.13	0.12
Little Rock	AR	0.84	0.80	0.23	0.20
Louisville	KY	0.89	0.84	0.10	0.10
Macon	GA	0.82	0.73	0.23	0.22
Memphis	TN	0.82	0.74	0.08	0.10
Miami	FL	0.95	0.94	0.05	0.05

Table 29 Standardization on Group Distributions and Group Rates of Return of Predicted Group Means on D for Whites and Blacks, 1960

Metropolitan	State	WD/WR[1]	BD/WR[2]	WD/BR[3]	BD/BR[4]
Mobile	AL	0.87	0.82	0.15	0.14
Monroe	LA	0.90	0.83	0.02	0.02
Montgomery	AL	0.86	0.79	0.12	0.11
Nashville	TN	0.88	0.80	0.09	0.09
New Orleans	LA	0.85	0.80	0.20	0.19
New York	NY	0.87	0.82	0.12	0.11
Norfolk	VA	0.92	0.91	0.14	0.14
Omaha	NE	0.94	0.92	0.07	0.06
Orlando	FL	0.90	0.88	0.04	0.03
Philadelphia	PA	0.90	0.87	0.11	0.10
Pittsburgh	PA	0.87	0.84	0.14	0.13
Raleigh	NC	0.73	0.62	0.19	0.15
Richmond	VA	0.90	0.85	0.15	0.12
Rochester	NY	0.90	0.84	0.11	0.07
Saginaw	MI	0.89	0.87	0.08	0.08
St. Louis	MO	0.93	0.90	0.07	0.07
San Antonio	TX	0.87	0.86	0.09	0.08
Savannah	GA	0.86	0.81	0.15	0.15
Shreveport	LA	0.85	0.80	0.11	0.12
Tampa	FL	0.90	0.89	0.06	0.06
Toledo	OH	0.90	0.87	0.06	0.06
Tyler	TX	0.77	0.71	0.19	0.20
Waco	TX	0.83	0.75	0.15	0.18
Washington	DC	0.90	0.86	0.10	0.10
Wilmington	NC	0.81	0.74	0.08	0.07
Youngstown	OH	0.81	0.77	0.06	0.06

[1]White Distributions, White Rates

[2]Black Distributions, White Rates

[3] White Distributions, Black Rates

[4] Black Distributions, Black Rates

Results rounded to the nearest hundredth

Source: 1960 National Historical Geographic Information Systems Data

Table 30 Standardization of Group Distributions and Group Rates of Return of Predicted Group Means on D for Whites and Blacks, 2000

Metropolitan	State	WD/WR[1]	BD/WR[2]	WD/BR[3]	BD/BR[4]
Akron	OH	0.88	0.84	0.25	0.19
Atlanta	GA	0.86	0.81	0.24	0.20
Augusta	GA	0.75	0.71	0.32	0.28
Austin	TX	0.78	0.71	0.34	0.27
Baltimore	MD	0.86	0.82	0.21	0.16
Baton Rouge	LA	0.84	0.81	0.23	0.18
Beaumont	TX	0.86	0.84	0.16	0.13
Birmingham	AL	0.89	0.86	0.20	0.16
Canton	OH	0.86	0.81	0.33	0.25
Charleston	SC	0.76	0.69	0.37	0.31
Charlotte	NC	0.80	0.77	0.29	0.26
Chattanooga	TN	0.90	0.89	0.21	0.18
Chicago	IL	0.91	0.88	0.13	0.10
Cincinnati	OH	0.88	0.86	0.14	0.11
Cleveland	OH	0.90	0.87	0.13	0.10
Columbus	GA	0.84	0.78	0.29	0.25
Columbus	OH	0.84	0.80	0.23	0.18
Dayton	OH	0.91	0.89	0.22	0.18
Detroit	MI	0.95	0.92	0.11	0.08
Dallas	TX	0.83	0.79	0.30	0.24
Fort Worth	TX	0.81	0.78	0.24	0.20
Galveston	TX	0.79	0.71	0.27	0.20
Gary	IN	0.94	0.92	0.12	0.09
Greensboro	NC	0.81	0.78	0.26	0.23
Greensville	SC	0.66	0.60	0.36	0.32
Harrisburg	PA	0.88	0.87	0.18	0.14
Hartford	CT	0.85	0.80	0.22	0.18
Houston	TX	0.83	0.79	0.24	0.20
Indianapolis	IN	0.87	0.86	0.15	0.13
Jacksonville	FL	0.78	0.74	0.27	0.23
Kansas City	MO	0.89	0.85	0.23	0.18
Knoxville	TN	0.82	0.80	0.25	0.20
Lexington	KY	0.77	0.73	0.30	0.26
Little Rock	AR	0.85	0.80	0.27	0.22
Louisville	KY	0.88	0.84	0.28	0.22
Macon	GA	0.83	0.75	0.37	0.30
Memphis	TN	0.84	0.78	0.19	0.15
Miami	FL	0.86	0.85	0.15	0.13

Table 30 Standardization of Group Distributions and Group Rates of Return of Predicted Group Means on D for Whites and Blacks, 2000

Metropolitan	State	WD/WR[1]	BD/WR[2]	WD/BR[3]	BD/BR[4]
Mobile	AL	0.84	0.82	0.27	0.22
Monroe	LA	0.86	0.82	0.18	0.14
Montgomery	AL	0.83	0.79	0.29	0.24
Nashville	TN	0.81	0.77	0.27	0.22
New Orleans	LA	0.86	0.84	0.19	0.16
New York	NY	0.87	0.82	0.12	0.10
Norfolk	VA	0.76	0.70	0.33	0.28
Omaha	NE	0.87	0.83	0.26	0.19
Orlando	FL	0.83	0.81	0.35	0.29
Philadelphia	PA	0.89	0.85	0.21	0.15
Pittsburgh	PA	0.88	0.85	0.21	0.17
Raleigh	NC	0.79	0.74	0.37	0.33
Richmond	VA	0.81	0.75	0.30	0.23
Rochester	NY	0.91	0.86	0.31	0.20
Saginaw	MI	0.92	0.89	0.19	0.14
St. Louis	MO	0.89	0.86	0.16	0.13
San Antonio	TX	0.77	0.77	0.30	0.28
Savannah	GA	0.82	0.78	0.31	0.24
Shreveport	LA	0.82	0.76	0.29	0.25
Tampa	FL	0.85	0.83	0.26	0.21
Toledo	OH	0.87	0.82	0.16	0.14
Tyler	TX	0.81	0.76	0.33	0.31
Waco	TX	0.74	0.64	0.31	0.23
Washington	DC	0.85	0.81	0.24	0.21
Wilmington	NC	0.70	0.65	0.25	0.21
Youngstown	OH	0.90	0.87	0.18	0.15

[1]White Distributions, White Rates

[2]Black Distributions, White Rates

[3] White Distributions, Black Rates

[4] Black Distributions, Black Rates

Results rounded to the nearest hundredth

Source: 2000 decennial census

Table 31Standardization on Group Distributions and Group Rates of Return of Predicted Group Means on S for Whites and Blacks, 1960

Metropolitan	State	WD/WR[1]	BD/WR[2]	WD/BR[3]	BD/BR[4]
Akron	OH	0.96	0.95	0.56	0.53
Atlanta	GA	0.94	0.92	0.25	0.27
Augusta	GA	0.88	0.88	0.31	0.27
Austin	TX	0.94	0.93	0.48	0.47
Baltimore	MD	0.94	0.93	0.27	0.26
Baton Rouge	LA	0.87	0.85	0.34	0.34
Beaumont	TX	0.93	0.90	0.29	0.29
Birmingham	AL	0.85	0.82	0.34	0.36
Canton	OH	0.97	0.96	0.64	0.62
Charleston	SC	0.84	0.80	0.38	0.36
Charlotte	NC	0.93	0.90	0.23	0.27
Chattanooga	TN	0.94	0.93	0.28	0.27
Chicago	IL	0.97	0.97	0.19	0.17
Cincinnati	OH	0.96	0.95	0.31	0.27
Cleveland	OH	0.97	0.96	0.23	0.21
Columbus	GA	0.88	0.86	0.39	0.35
Columbus	OH	0.95	0.94	0.42	0.41
Dayton	OH	0.97	0.96	0.23	0.21
Detroit	MI	0.96	0.94	0.29	0.28
Dallas	TX	0.96	0.94	0.26	0.30
Fort Worth	TX	0.97	0.96	0.28	0.27
Galveston	TX	0.89	0.88	0.48	0.45
Gary	IN	0.97	0.96	0.22	0.20
Greensboro	NC	0.92	0.90	0.36	0.36
Greensville	SC	0.88	0.87	0.71	0.69
Harrisburg	PA	0.97	0.96	0.60	0.58
Hartford	CT	0.98	0.97	0.60	0.53
Houston	TX	0.94	0.91	0.29	0.27
Indianapolis	IN	0.95	0.94	0.35	0.33
Jacksonville	FL	0.89	0.88	0.18	0.19
Kansas City	MO	0.96	0.94	0.32	0.31
Knoxville	TN	0.93	0.91	0.39	0.38
Lexington	KY	0.92	0.87	0.48	0.50
Little Rock	AR	0.89	0.87	0.52	0.49
Louisville	KY	0.96	0.94	0.42	0.39
Macon	GA	0.84	0.79	0.37	0.38
Memphis	TN	0.87	0.82	0.27	0.29
Miami	FL	0.97	0.97	0.21	0.21

Table 31Standardization on Group Distributions and Group Rates of Return of Predicted Group Means on S for Whites and Blacks, 1960

Metropolitan	State	WD/WR[1]	BD/WR[2]	WD/BR[3]	BD/BR[4]
Mobile	AL	0.88	0.84	0.32	0.30
Monroe	LA	0.92	0.86	0.12	0.14
Montgomery	AL	0.88	0.81	0.23	0.25
Nashville	TN	0.94	0.91	0.32	0.31
New Orleans	LA	0.87	0.84	0.37	0.35
New York	NY	0.95	0.94	0.42	0.42
Norfolk	VA	0.93	0.92	0.24	0.24
Omaha	NE	0.98	0.97	0.42	0.41
Orlando	FL	0.96	0.94	0.35	0.34
Philadelphia	PA	0.94	0.93	0.35	0.32
Pittsburgh	PA	0.97	0.96	0.53	0.53
Raleigh	NC	0.88	0.84	0.38	0.44
Richmond	VA	0.93	0.90	0.30	0.26
Rochester	NY	0.98	0.97	0.62	0.58
Saginaw	MI	0.96	0.95	0.46	0.45
St. Louis	MO	0.96	0.95	0.29	0.26
San Antonio	TX	0.96	0.96	0.53	0.54
Savannah	GA	0.87	0.83	0.29	0.28
Shreveport	LA	0.88	0.84	0.24	0.29
Tampa	FL	0.96	0.96	0.39	0.38
Toledo	OH	0.97	0.96	0.36	0.36
Tyler	TX	0.87	0.83	0.42	0.46
Waco	TX	0.91	0.87	0.44	0.50
Washington	DC	0.93	0.90	0.28	0.26
Wilmington	NC	0.94	0.92	0.51	0.50
Youngstown	OH	0.94	0.92	0.55	0.54

[1]White Distributions, White Rates

[2]Black Distributions, White Rates

[3] White Distributions, Black Rates

[4] Black Distributions, Black Rates

Results rounded to the nearest hundredth

Source: 1960 National Historical Geographic Information Systems Data

Table 32 Standardization on Group Distributions and Group Rates of Return of Predicted Group Mean on S for Whites and Blacks, 2000

Metropolitan	State	WD/WR[1]	BD/WR[2]	WD/BR[3]	BD/BR[4]
Akron	OH	0.94	0.93	0.52	0.50
Atlanta	GA	0.86	0.83	0.38	0.35
Augusta	GA	0.76	0.74	0.50	0.47
Austin	TX	0.93	0.91	0.73	0.70
Baltimore	MD	0.88	0.87	0.38	0.32
Baton Rouge	LA	0.85	0.84	0.40	0.35
Beaumont	TX	0.89	0.88	0.37	0.34
Birmingham	AL	0.89	0.87	0.33	0.28
Canton	OH	0.95	0.94	0.71	0.69
Charleston	SC	0.78	0.75	0.56	0.52
Charlotte	NC	0.87	0.85	0.56	0.53
Chattanooga	TN	0.94	0.93	0.46	0.41
Chicago	IL	0.94	0.92	0.28	0.23
Cincinnati	OH	0.95	0.94	0.45	0.39
Cleveland	OH	0.94	0.93	0.30	0.26
Columbus	GA	0.76	0.73	0.37	0.35
Columbus	OH	0.93	0.91	0.53	0.48
Dayton	OH	0.94	0.93	0.42	0.39
Detroit	MI	0.95	0.94	0.20	0.17
Dallas	TX	0.89	0.88	0.54	0.50
Fort Worth	TX	0.92	0.91	0.62	0.57
Galveston	TX	0.90	0.87	0.58	0.54
Gary	IN	0.95	0.93	0.24	0.21
Greensboro	NC	0.88	0.87	0.53	0.49
Greensville	SC	0.71	0.69	0.56	0.53
Harrisburg	PA	0.96	0.96	0.56	0.52
Hartford	CT	0.95	0.93	0.56	0.51
Houston	TX	0.88	0.86	0.47	0.43
Indianapolis	IN	0.93	0.93	0.45	0.42
Jacksonville	FL	0.87	0.86	0.50	0.47
Kansas City	MO	0.94	0.92	0.48	0.43
Knoxville	TN	0.96	0.96	0.67	0.63
Lexington	KY	0.93	0.92	0.69	0.67
Little	AR	0.88	0.87	0.50	0.46
Louisville	KY	0.93	0.92	0.50	0.44
Macon	GA	0.76	0.72	0.47	0.42
Memphis	TN	0.81	0.76	0.31	0.26
Miami	FL	0.91	0.90	0.37	0.35
Mobile	AL	0.87	0.86	0.43	0.37

Table 32 Standardization on Group Distributions and Group Rates of Return of Predicted Group Mean on S for Whites and Blacks, 2000

Metropolitan	State	WD/WR[1]	BD/WR[2]	WD/BR[3]	BD/BR[4]
Monroe	LA	0.89	0.87	0.31	0.26
Montgomery	AL	0.80	0.78	0.41	0.36
Nashville	TN	0.91	0.89	0.58	0.52
New Orleans	LA	0.84	0.82	0.30	0.27
New York	NY	0.88	0.85	0.25	0.24
Norfolk	VA	0.79	0.76	0.51	0.46
Omaha	NE	0.95	0.94	0.61	0.55
Orlando	FL	0.91	0.90	0.63	0.59
Philadelphia	PA	0.92	0.90	0.37	0.31
Pittsburgh	PA	0.96	0.95	0.53	0.49
Raleigh	NC	0.83	0.81	0.59	0.55
Richmond	VA	0.83	0.79	0.47	0.41
Rochester	NY	0.95	0.93	0.55	0.48
Saginaw	MI	0.96	0.95	0.42	0.36
St. Louis	MO	0.93	0.92	0.37	0.33
San Antonio	TX	0.93	0.93	0.76	0.74
Savannah	GA	0.81	0.79	0.42	0.37
Shreveport	LA	0.80	0.76	0.41	0.38
Tampa	FL	0.94	0.94	0.59	0.55
Toledo	OH	0.94	0.92	0.43	0.41
Tyler	TX	0.87	0.85	0.58	0.56
Waco	TX	0.88	0.85	0.64	0.58
Washington	DC	0.85	0.83	0.39	0.36
Wilmington	NC	0.89	0.88	0.66	0.61
Youngstown	OH	0.95	0.94	0.50	0.47

[1]White Distributions, White Rates

[2]Black Distributions, White Rates

[3] White Distributions, Black Rates

[4] Black Distributions, Black Rates

Results rounded to the nearest hundredth

Source: 2000 decennial census

Table 33 Components Analysis for Dissimilarity Index, 1960

Metropolitan	State	Group Distributions	Group Rates of Return	Joint Impact	Total Difference	Percentage of Group Distributions	Percentage of Group Rates of Return
Akron	OH	0.01	0.76	0.02	0.78	0.96	97.10
Atlanta	GA	-0.03	0.76	0.05	0.78	-3.69	97.17
Augusta	GA	0.04	0.74	-0.05	0.73	5.35	101.07
Austin	TX	-0.01	0.64	0.04	0.67	-1.62	94.98
Baltimore	MD	0.00	0.80	0.02	0.82	0.27	97.20
Baton Rouge	LA	0.00	0.64	0.05	0.69	0.32	93.02
Beaumont	TX	0.00	0.73	0.07	0.79	-0.27	91.43
Birmingham	AL	-0.01	0.60	0.06	0.65	-1.81	92.41
Canton	OH	0.02	0.71	0.02	0.75	2.57	94.38
Charleston	SC	0.03	0.59	0.02	0.63	4.35	92.70
Charlotte	NC	-0.01	0.71	0.07	0.77	-1.68	92.70
Chattanooga	TN	-0.01	0.77	0.03	0.79	-0.78	97.51
Chicago	IL	0.01	0.89	0.00	0.90	1.50	98.20
Cincinnati	OH	0.01	0.82	0.02	0.85	1.49	96.29
Cleveland	OH	0.00	0.88	0.02	0.91	0.50	97.25
Columbus	GA	0.03	0.69	-0.01	0.71	4.38	97.00
Columbus	OH	0.00	0.74	0.04	0.78	0.09	94.91
Dayton	OH	0.00	0.90	0.01	0.92	0.23	98.15
Detroit	MI	0.00	0.83	0.04	0.88	0.41	94.73
Dallas	TX	-0.02	0.76	0.07	0.81	-2.53	93.94
Fort Worth	TX	0.00	0.82	0.03	0.85	-0.05	96.43
Galveston	TX	0.02	0.63	0.00	0.66	3.72	95.73
Gary	IN	0.00	0.89	0.01	0.90	-0.30	98.72
Greensboro	NC	0.00	0.65	0.04	0.69	-0.44	94.21
Greensville	SC	0.08	0.41	-0.05	0.43	17.64	94.74
Harrisburg	PA	0.01	0.76	0.00	0.77	1.70	98.46
Hartford	CT	0.05	0.75	-0.02	0.79	6.92	95.46
Houston	TX	0.00	0.76	0.04	0.81	0.52	94.85
Indianapolis	IN	0.01	0.79	0.02	0.82	0.80	96.20
Jacksonville	FL	-0.01	0.75	0.04	0.78	-0.66	95.70
Kansas City	MO	0.00	0.79	0.04	0.83	-0.04	95.04
Knoxville	TN	-0.01	0.73	0.03	0.76	-1.20	96.72
Lexington	KY	0.00	0.64	0.08	0.73	0.49	88.08
Little	AR	0.03	0.60	0.01	0.64	4.59	93.66
Louisville	KY	0.00	0.74	0.05	0.79	-0.10	94.37
Macon	GA	0.01	0.51	0.08	0.60	1.31	84.64
Memphis	TN	-0.02	0.65	0.10	0.73	-2.22	88.98

Table 33 Components Analysis for Dissimilarity Index, 1960

Metropolitan	State	Group Distributions	Group Rates of Return	Joint Impact	Total Difference	Percentage of Group Distributions	Percentage of Group Rates of Return
Miami	FL	0.00	0.89	0.01	0.90	-0.18	98.64
Mobile	AL	0.01	0.69	0.03	0.73	1.64	93.61
Monroe	LA	0.00	0.80	0.07	0.87	-0.08	91.62
Montgomery	AL	0.01	0.68	0.05	0.75	1.90	91.47
Nashville	TN	0.00	0.71	0.08	0.79	-0.51	89.82
New Orleans	LA	0.01	0.61	0.04	0.66	2.09	91.96
New York	NY	0.01	0.71	0.03	0.75	1.33	94.26
Norfolk	VA	-0.01	0.77	0.02	0.78	-0.78	98.62
Omaha	NE	0.01	0.86	0.01	0.88	1.11	97.74
Orlando	FL	0.01	0.85	0.01	0.87	1.44	97.59
Philadelphia	PA	0.01	0.77	0.01	0.80	1.65	96.64
Pittsburgh	PA	0.01	0.71	0.02	0.74	0.94	96.38
Raleigh	NC	0.04	0.47	0.07	0.58	6.52	81.14
Richmond	VA	0.02	0.73	0.03	0.78	2.98	93.30
Rochester	NY	0.04	0.77	0.02	0.83	4.66	93.26
Saginaw	MI	0.00	0.79	0.02	0.81	0.28	97.59
St. Louis	MO	0.00	0.83	0.02	0.86	0.14	96.97
San Antonio	TX	0.01	0.78	0.00	0.79	1.28	98.17
Savannah	GA	0.01	0.66	0.05	0.72	1.13	92.49
Shreveport	LA	-0.02	0.68	0.07	0.73	-2.05	92.72
Tampa	FL	0.00	0.83	0.02	0.84	-0.05	98.21
Toledo	OH	0.00	0.80	0.03	0.83	0.03	96.37
Tyler	TX	-0.01	0.51	0.07	0.57	-2.26	89.73
Waco	TX	-0.03	0.56	0.11	0.65	-4.06	86.90
Washington	DC	0.00	0.76	0.04	0.80	-0.23	95.01
Wilmington	NC	0.01	0.67	0.06	0.74	1.39	89.86
Youngstown	OH	0.00	0.70	0.05	0.75	-0.23	93.50

Results rounded to the nearest hundredth

Source: 1960 National Historical Geographic Information Systems Data

Table 34 Components Analysis for Dissimilarity Index, 2000

Metropolitan	State	Group Distributions	Group Rates of Return	Joint Impact	Total Difference	Percentage of Group Distributions	Percentage of Group Rates of Return
Akron	OH	0.06	0.65	-0.02	0.69	8.13	94.36
Atlanta	GA	0.04	0.61	0.01	0.65	6.00	93.11
Augusta	GA	0.04	0.43	0.00	0.48	8.79	90.89
Austin	TX	0.07	0.44	0.00	0.51	13.57	86.48
Baltimore	MD	0.05	0.65	-0.01	0.69	6.85	94.49
Baton Rouge	LA	0.05	0.63	-0.02	0.65	6.95	96.10
Beaumont	TX	0.03	0.71	-0.01	0.72	4.60	97.46
Birmingham	AL	0.04	0.70	-0.01	0.73	5.95	95.21
Canton	OH	0.07	0.56	-0.03	0.60	12.44	92.24
Charleston	SC	0.06	0.38	0.01	0.45	13.19	85.13
Charlotte	NC	0.03	0.51	0.00	0.54	6.03	93.55
Chattanooga	TN	0.03	0.72	-0.02	0.72	4.16	99.12
Chicago	IL	0.03	0.78	0.01	0.81	3.13	95.99
Cincinnati	OH	0.03	0.75	-0.01	0.77	3.86	97.43
Cleveland	OH	0.03	0.77	0.01	0.80	3.35	95.81
Columbus	GA	0.04	0.53	0.01	0.58	6.38	91.09
Columbus	OH	0.05	0.62	-0.02	0.66	8.28	94.24
Dayton	OH	0.04	0.71	-0.01	0.73	4.99	96.45
Detroit	MI	0.03	0.84	0.00	0.87	3.01	97.19
Dallas	TX	0.06	0.55	-0.02	0.59	10.14	92.72
Fort Worth	TX	0.04	0.58	-0.01	0.61	6.67	95.42
Galveston	TX	0.07	0.50	0.01	0.59	11.59	86.28
Gary	IN	0.02	0.82	0.00	0.84	2.46	97.47
Greensboro	NC	0.04	0.56	-0.01	0.58	6.34	95.97
Greensville	SC	0.05	0.28	0.01	0.34	14.16	83.08
Harrisburg	PA	0.04	0.73	-0.02	0.74	4.77	98.24
Hartford	CT	0.04	0.62	0.01	0.67	6.41	91.97
Houston	TX	0.04	0.59	0.00	0.63	6.21	93.49
Indianapolis	IN	0.03	0.73	-0.01	0.75	3.39	98.14
Jacksonville	FL	0.04	0.51	0.01	0.55	7.28	91.41
Kansas City	MO	0.06	0.67	-0.01	0.71	7.97	93.96
Knoxville	TN	0.05	0.59	-0.03	0.62	8.33	96.01
Lexington	KY	0.04	0.47	0.00	0.51	8.21	92.32
Little Rock	AR	0.05	0.58	-0.01	0.62	7.95	93.10
Louisville	KY	0.07	0.62	-0.03	0.66	9.86	94.30
Macon	GA	0.08	0.45	0.00	0.53	14.49	85.51
Memphis	TN	0.04	0.63	0.02	0.69	5.55	91.07

Table 34 Components Analysis for Dissimilarity Index, 2000

Metropolitan	State	Group Distributions	Group Rates of Return	Joint Impact	Total Difference	Percentage of Group Distributions	Percentage of Group Rates of Return
Miami	FL	0.02	0.72	0.00	0.73	2.22	97.85
Mobile	AL	0.05	0.60	-0.03	0.62	7.42	96.84
Monroe	LA	0.04	0.68	0.00	0.72	6.20	94.48
Montgomery	AL	0.05	0.55	-0.02	0.58	8.42	94.16
Nashville	TN	0.05	0.54	-0.01	0.58	8.09	93.21
New Orleans	LA	0.03	0.68	-0.01	0.70	4.09	96.99
New York	NY	0.02	0.73	0.02	0.77	3.00	93.85
Norfolk	VA	0.05	0.42	0.01	0.48	9.91	88.16
Omaha	NE	0.07	0.64	-0.03	0.68	10.08	93.90
Orlando	FL	0.06	0.51	-0.03	0.54	10.59	94.74
Philadelphia	PA	0.06	0.69	-0.01	0.74	7.69	93.77
Pittsburgh	PA	0.05	0.68	-0.02	0.71	6.56	96.01
Raleigh	NC	0.04	0.41	0.01	0.46	9.13	88.89
Richmond	VA	0.06	0.52	0.00	0.58	11.09	88.57
Rochester	NY	0.10	0.66	-0.05	0.71	14.34	92.99
Saginaw	MI	0.05	0.75	-0.02	0.78	6.52	95.82
St. Louis	MO	0.03	0.73	-0.01	0.76	4.16	96.53
San Antonio	TX	0.02	0.49	-0.01	0.49	3.17	98.90
Savannah	GA	0.07	0.54	-0.02	0.59	11.91	92.15
Shreveport	LA	0.04	0.51	0.03	0.57	6.47	88.58
Tampa	FL	0.05	0.62	-0.03	0.64	7.62	97.61
Toledo	OH	0.02	0.68	0.03	0.73	2.75	93.51
Tyler	TX	0.02	0.45	0.03	0.51	4.71	89.62
Waco	TX	0.08	0.40	0.02	0.51	15.74	79.85
Washington	DC	0.03	0.60	0.01	0.63	4.18	94.03
Wilmington	NC	0.03	0.44	0.02	0.49	7.00	89.90
Youngstown	OH	0.03	0.72	0.00	0.75	3.87	96.24

Results rounded to the nearest hundredth

Source: 2000 decennial census

Table 35 Components Analysis for Separation Index, 1960

Metropolitan	State	Group Distributions	Group Rates of Return	Joint Impact	Total Difference	Percentage of Group Distributions	Percentage of Group Rates of Return
Akron	OH	0.03	0.42	-0.02	0.43	7.00	97.81
Atlanta	GA	-0.02	0.65	0.04	0.67	-3.08	97.19
Augusta	GA	0.04	0.62	-0.04	0.62	6.64	99.76
Austin	TX	0.01	0.46	0.01	0.47	1.10	97.55
Baltimore	MD	0.01	0.66	0.01	0.68	1.34	97.91
Baton Rouge	LA	0.01	0.51	0.02	0.54	1.41	95.60
Beaumont	TX	0.00	0.61	0.03	0.64	-0.51	95.12
Birmingham	AL	-0.02	0.46	0.05	0.49	-3.33	93.76
Canton	OH	0.02	0.35	-0.01	0.35	5.30	97.84
Charleston	SC	0.01	0.44	0.02	0.48	3.02	92.08
Charlotte	NC	-0.05	0.63	0.08	0.66	-6.84	95.13
Chattanooga	TN	0.01	0.66	0.00	0.67	2.15	98.20
Chicago	IL	0.02	0.79	-0.01	0.80	2.54	98.85
Cincinnati	OH	0.04	0.68	-0.03	0.69	6.01	98.03
Cleveland	OH	0.02	0.75	-0.01	0.76	2.76	98.20
Columbia	OH	0.01	0.52	0.01	0.54	1.92	97.08
Columbus	GA	0.03	0.51	-0.02	0.52	5.98	97.14
Columbus	OH	0.01	0.52	0.01	0.54	1.92	97.08
Dayton	OH	0.02	0.75	-0.01	0.76	2.43	98.76
Detroit	MI	0.01	0.66	0.01	0.68	1.73	96.77
Dallas	TX	-0.04	0.64	0.06	0.66	-5.33	96.86
Fort Worth	TX	0.01	0.69	0.00	0.70	0.99	98.36
Galveston	TX	0.02	0.42	-0.01	0.44	5.40	96.28
Gary	IN	0.01	0.76	0.00	0.76	1.48	99.08
Greensboro	NC	0.00	0.54	0.02	0.56	-0.19	96.62
Greensville	SC	0.02	0.18	-0.01	0.19	8.53	94.65
Harrisburg	PA	0.02	0.38	-0.02	0.39	5.11	98.90
Hartford	CT	0.07	0.43	-0.06	0.44	15.45	97.50
Houston	TX	0.02	0.64	0.01	0.67	2.40	96.32
Indianapolis	IN	0.01	0.60	0.00	0.62	2.05	97.75
Jacksonville	FL	-0.02	0.69	0.03	0.70	-2.32	97.42
Kansas City	MO	0.01	0.63	0.01	0.65	1.49	97.41
Knoxville	TN	0.00	0.53	0.01	0.54	0.83	97.11
Lexington	KY	-0.02	0.38	0.06	0.42	-4.02	89.01
Little	AR	0.03	0.38	0.00	0.40	7.13	93.77
Louisville	KY	0.03	0.55	-0.02	0.56	5.24	97.51
Macon	GA	0.00	0.41	0.05	0.46	-0.97	89.04

Table 35 Components Analysis for Separation Index, 1960

Metropolitan	State	Group Distributions	Group Rates of Return	Joint Impact	Total Difference	Percentage of Group Distributions	Percentage of Group Rates of Return
Memphis	TN	-0.02	0.54	0.06	0.58	-2.66	92.11
Miami	FL	0.00	0.76	0.00	0.76	0.62	99.28
Mobile	AL	0.02	0.54	0.02	0.58	3.08	92.77
Monroe	LA	-0.02	0.73	0.07	0.78	-2.28	93.38
Montgomery	AL	-0.02	0.56	0.08	0.62	-2.99	89.85
Nashville	TN	0.01	0.60	0.02	0.63	1.81	95.00
New Orleans	LA	0.02	0.49	0.01	0.52	4.21	93.92
New York	NY	0.00	0.52	0.01	0.53	0.83	97.37
Norfolk	VA	0.00	0.68	0.01	0.69	0.10	98.93
Omaha	NE	0.02	0.56	-0.01	0.57	2.80	98.51
Orlando	FL	0.02	0.61	-0.01	0.62	2.88	98.03
Philadelphia	PA	0.03	0.61	-0.01	0.62	4.16	97.84
Pittsburgh	PA	0.00	0.43	0.01	0.44	-0.04	98.42
Raleigh	NC	-0.06	0.40	0.10	0.44	-13.10	90.33
Richmond	VA	0.05	0.64	-0.02	0.67	7.03	96.38
Rochester	NY	0.04	0.39	-0.03	0.40	10.09	96.94
Saginaw	MI	0.01	0.50	0.00	0.51	2.50	98.21
St. Louis	MO	0.02	0.69	-0.01	0.70	3.26	98.01
San Antonio	TX	-0.01	0.42	0.01	0.42	-1.30	98.93
Savannah	GA	0.01	0.56	0.03	0.60	1.78	93.37
Shreveport	LA	-0.06	0.55	0.09	0.59	-9.41	93.48
Tampa	FL	0.01	0.58	0.00	0.58	1.81	98.98
Toledo	OH	0.00	0.60	0.01	0.61	0.45	98.31
Tyler	TX	-0.04	0.37	0.08	0.41	-10.30	90.29
Waco	TX	-0.06	0.37	0.10	0.41	-13.91	90.30
Washington	DC	0.02	0.64	0.01	0.67	2.64	96.07
Wilmington	NC	0.01	0.42	0.02	0.45	2.34	93.97
Youngstown	OH	0.02	0.38	0.00	0.40	3.85	95.63

Results rounded to the nearest hundredth

Source: 1960 National Historical Geographic Information Systems Data

Table 36 Components Analysis for Separation Index, 2000

Metropolitan	State	Group Distributions	Group Rates of Return	Joint Impact	Total Difference	Percentage of Group Distributions	Percentage of Group Rates of Return
Akron	OH	0.02	0.43	-0.01	0.44	5.22	96.48
Atlanta	GA	0.03	0.49	-0.01	0.51	6.06	95.23
Augusta	GA	0.03	0.26	0.00	0.29	9.38	91.07
Austin	TX	0.03	0.21	-0.02	0.23	14.69	92.50
Baltimore	MD	0.06	0.55	-0.04	0.57	10.34	96.73
Baton Rouge	LA	0.05	0.49	-0.04	0.50	9.86	97.30
Beaumont	TX	0.03	0.54	-0.02	0.55	6.02	98.40
Birmingham	AL	0.05	0.59	-0.03	0.61	8.33	96.13
Canton	OH	0.02	0.26	-0.01	0.27	8.41	94.94
Charleston	SC	0.04	0.23	-0.01	0.26	16.02	87.21
Charlotte	NC	0.04	0.33	-0.02	0.34	10.70	95.46
Chattanooga	TN	0.04	0.52	-0.04	0.52	8.40	99.33
Chicago	IL	0.04	0.69	-0.03	0.70	6.01	97.72
Cincinnati	OH	0.05	0.54	-0.05	0.55	9.61	98.60
Cleveland	OH	0.04	0.67	-0.03	0.69	6.24	97.82
Columbia	OH	0.06	0.15	-0.04	0.17	38.40	87.41
Columbus	GA	0.03	0.39	0.00	0.41	6.18	93.38
Columbus	OH	0.05	0.43	-0.04	0.45	11.97	96.34
Dayton	OH	0.03	0.54	-0.02	0.55	5.24	98.13
Detroit	MI	0.03	0.76	-0.02	0.78	4.14	98.21
Durham	NC	0.04	0.26	-0.02	0.29	13.93	91.70
Dallas	TX	0.05	0.38	-0.03	0.40	12.40	95.34
Fort Worth	TX	0.05	0.34	-0.03	0.35	12.83	97.00
Galveston	TX	0.04	0.33	-0.01	0.35	10.44	93.07
Gary	IN	0.03	0.72	-0.01	0.74	4.22	97.77
Greensboro	NC	0.04	0.38	-0.03	0.39	9.32	97.60
Greensville	SC	0.03	0.16	-0.01	0.18	17.36	88.67
Harrisburg	PA	0.04	0.44	-0.03	0.45	9.16	98.44
Hartford	CT	0.05	0.42	-0.03	0.44	11.77	96.25
Houston	TX	0.04	0.43	-0.02	0.45	8.55	95.37
Indianapolis	IN	0.03	0.51	-0.02	0.51	6.33	98.54
Jacksonville	FL	0.03	0.39	-0.01	0.40	7.84	95.53
Kansas City	MO	0.05	0.50	-0.04	0.51	10.45	96.88
Knoxville	TN	0.04	0.33	-0.04	0.33	12.33	98.49
Lexington	KY	0.03	0.25	-0.02	0.26	9.65	96.49
Little Rock	AR	0.03	0.40	-0.02	0.42	8.31	96.33
Louisville	KY	0.06	0.48	-0.05	0.49	12.39	97.36

Table 36 Components Analysis for Separation Index, 2000

Metropolitan	State	Group Distributions	Group Rates of Return	Joint Impact	Total Difference	Percentage of Group Distributions	Percentage of Group Rates of Return
Macon	GA	0.05	0.30	-0.01	0.35	14.19	87.67
Memphis	TN	0.05	0.50	0.00	0.55	8.97	91.77
Miami	FL	0.02	0.55	-0.01	0.56	2.90	98.73
Mobile	AL	0.06	0.49	-0.05	0.50	11.62	97.98
Monroe	LA	0.06	0.61	-0.04	0.63	9.00	97.46
Montgomery	AL	0.04	0.42	-0.03	0.44	10.21	95.75
Nashville	TN	0.06	0.37	-0.04	0.39	14.98	95.80
New Orleans	LA	0.03	0.55	-0.01	0.58	5.72	96.18
New York	NY	0.01	0.61	0.02	0.64	1.64	95.11
Norfolk	VA	0.05	0.30	-0.02	0.33	14.48	91.13
Omaha	NE	0.06	0.39	-0.04	0.41	14.65	96.26
Orlando	FL	0.04	0.31	-0.03	0.32	12.83	96.96
Philadelphia	PA	0.06	0.59	-0.03	0.61	9.44	96.24
Pittsburgh	PA	0.04	0.46	-0.03	0.47	8.59	98.34
Raleigh	NC	0.04	0.26	-0.02	0.29	13.93	91.70
Richmond	VA	0.07	0.38	-0.03	0.42	15.53	90.40
Rochester	NY	0.07	0.45	-0.05	0.47	15.57	95.84
Saginaw	MI	0.06	0.59	-0.05	0.61	10.68	97.70
St. Louis	MO	0.04	0.59	-0.03	0.60	6.67	97.92
San Antonio	TX	0.01	0.19	-0.01	0.19	7.18	99.00
Savannah	GA	0.06	0.42	-0.03	0.45	13.12	93.96
Shreveport	LA	0.03	0.38	0.01	0.42	6.73	90.83
Tampa	FL	0.04	0.39	-0.03	0.40	10.02	98.78
Toledo	OH	0.02	0.51	0.00	0.53	3.58	96.52
Tyler	TX	0.02	0.29	0.00	0.31	6.62	93.46
Waco	TX	0.05	0.27	-0.02	0.30	18.30	89.74
Washington	DC	0.03	0.48	-0.01	0.50	6.68	95.65
Wilmington	NC	0.05	0.27	-0.04	0.28	17.40	95.43
Youngstown	OH	0.03	0.48	-0.02	0.49	5.91	97.76

Results rounded to the nearest hundredth

Source: 2000 decennial census

Table 37 Dissimilarity Index Scores of Metropolitan Statistical Areas, 1960 and 2000

Metropolitan	State	1960 (X)	2000 (Y)	Absolute Change |X-Y|	Percent Change
Akron	OH	78.3	66.14	12.16	15.53
Atlanta	GA	76.85	63.66	13.19	17.16
Augusta	GA	72.26	45.05	27.21	37.66
Austin	TX	61.78	48.18	13.6	22.01
Baltimore	MD	81.73	68.2	13.53	16.55
Baton Rogue	LA	68.65	65.18	3.47	5.05
Beaumont	TX	78.88	68.4	10.48	13.29
Birmingham	AL	64.23	70.44	6.21	9.67
Canton	OH	74.59	58.32	16.27	21.81
Charleston	SC	62.43	44.24	18.19	29.14
Charlotte	NC	75.24	52.72	22.52	29.93
Chattanooga	TN	77.26	69.73	7.53	9.75
Chicago	IL	91.26	79.33	11.93	13.07
Cincinnati	OH	83.07	75.05	8.02	9.65
Cleveland	OH	90.45	78.09	12.36	13.67
Columbus	GA	68.43	57.42	11.01	16.09
Columbus	OH	76.09	62.49	13.6	17.87
Dayton	OH	90.81	71.73	19.08	21.01
Detroit	MI	87.42	85.28	2.14	2.45
Durham	NC	55.91	44.48	11.43	20.44
Dallas	TX	80.59	56.52	24.07	29.87
Fort Worth	TX	84.74	58.31	26.43	31.19
Galveston	TX	64.56	56.76	7.8	12.08
Gary	IN	89.07	82.88	6.19	6.95
Greensboro	NC	66.88	57.07	9.81	14.67
Greensville	SC	40.3	33.08	7.22	17.92
Harrisburg	PA	76.55	72.11	4.44	5.80
Hartford	CT	77.2	63.98	13.22	17.12
Houston	TX	80.01	61.89	18.12	22.65
Indianapolis	IN	80.02	71.52	8.5	10.62
Jacksonville	FL	77.76	54.01	23.75	30.54
Kansas City	MO	83.35	70.46	12.89	15.46
Knoxville	TN	77.79	59.24	18.55	23.85
Lexington	KY	69.72	48.64	21.08	30.24
Little Rock	AR	63.48	60.56	2.92	4.60

Table 37 Dissimilarity Index Scores of Metropolitan Statistical Areas, 1960 and 2000

Metropolitan	State	1960 (X)	2000 (Y)	Absolute Change |X-Y|	Percent Change
Louisville	KY	78.25	64.91	13.34	17.05
Macon	GA	55.61	51.42	4.19	7.53
Memphis	TN	72.74	67.81	4.93	6.78
Miami	FL	88.90	71.28	17.62	19.82
Mobile	AL	73.16	61.71	11.45	15.65
Monroe	LA	85.87	69.41	16.46	19.17
Montgomery	AL	73.14	55.05	18.09	24.73
Nashville	TN	76.59	56.92	19.67	25.68
New Orleans	LA	65.45	68.72	3.27	5.00
New York	NY	74.39	75.12	0.73	0.98
Norfolk	VA	77.86	46.57	31.29	40.19
Omaha	NE	87.97	65.94	22.03	25.04
Orlando	FL	85.45	53.51	31.94	37.38
Philadelphia	PA	77.12	72.19	4.93	6.39
Pittsburgh	PA	72.24	68.69	3.55	4.91
Raleigh	NC	55.91	44.48	11.43	20.44
Richmond	VA	76.11	56.44	19.67	25.84
Rochester	NY	81.82	67.41	14.41	17.61
Saginaw	MI	81.60	74.87	6.73	8.25
St. Louis	MO	85.92	74.09	11.83	13.77
San Antonio	TX	76.81	47.79	29.02	37.78
Savannah	GA	69.45	55.83	13.62	19.61
Shreveport	LA	73.13	56.37	16.76	22.92
Tampa	FL	83.06	62.31	20.75	24.98
Toledo	OH	82.94	70.11	12.83	15.47
Tyler	TX	54.47	48.94	5.53	10.15
Waco	TX	60.93	48.04	12.89	21.16
Washington	DC	79.17	62.3	16.87	21.31
Wilmington	NC	67.39	47.95	19.44	28.85
Youngstown	OH	74.69	73.54	1.15	1.54

Sources: 1960 National Historical Geographic Information Systems Data and 2000 decennial census

Table 38 Separation Index Scores of Metropolitan Statistical Areas, 1960 and 2000

Metropolitan	State	1960 (X)	2000 (Y)	Absolute Change |X-Y|	Percent Change
Akron	OH	46.00	41.01	4.99	10.85
Atlanta	GA	64.88	49.38	15.50	23.89
Augusta	GA	59.60	27.26	32.34	54.26
Austin	TX	42.16	19.97	22.19	52.63
Baltimore	MD	69.12	55.31	13.81	19.98
Baton Rogue	LA	55.52	49.38	6.14	11.06
Beaumont	TX	64.88	50.86	14.02	21.61
Birmingham	AL	48.59	57.79	9.20	18.93
Canton	OH	36.68	24.98	11.70	31.90
Charleston	SC	47.20	25.01	22.19	47.01
Charlotte	NC	64.76	33.12	31.64	48.86
Chattanooga	TN	65.69	48.85	16.84	25.64
Chicago	IL	80.86	69.01	11.85	14.65
Cincinnati	OH	67.77	52.27	15.50	22.87
Cleveland	OH	76.32	66.51	9.81	12.85
Columbus	GA	51.31	40.07	11.24	21.91
Columbus	OH	51.78	40.79	10.99	21.22
Dayton	OH	74.01	53.5	20.51	27.71
Detroit	MI	68.25	75.62	7.37	10.80
Durham	NC	41.49	27.33	14.16	34.13
Dallas	TX	66.02	36.8	29.22	44.26
Fort Worth	TX	70.01	31.99	38.02	54.31
Galveston	TX	43.20	32.35	10.85	25.12
Gary	IN	76.24	71.76	4.48	5.88
Greensboro	NC	54.26	38.21	16.05	29.58
Greensville	SC	19.03	17.19	1.84	9.67
Harrisburg	PA	40.34	40.56	0.22	0.55
Hartford	CT	44.06	40.29	3.77	8.56
Houston	TX	65.98	42.83	23.15	35.09
Indianapolis	IN	60.61	47.64	12.97	21.40
Jacksonville	FL	69.94	38.93	31.01	44.34
Kansas City	MO	65.30	50.17	15.13	23.17
Knoxville	TN	55.96	32.52	23.44	41.89
Lexington	KY	41.66	21.29	20.37	48.90

Table 38 Separation Index Scores of Metropolitan Statistical Areas, 1960 and 2000

Metropolitan	State	1960 (X)	2000 (Y)	Absolute Change |X-Y|	Percent Change
Little Rock	AR	42.24	40.93	1.31	3.10
Louisville	KY	56.15	47.4	8.75	15.58
Macon	GA	42.82	32.46	10.36	24.19
Memphis	TN	59.25	53.87	5.38	9.08
Miami	FL	77.01	53.23	23.78	30.88
Mobile	AL	59.14	48.09	11.05	18.68
Monroe	LA	77.48	58.5	18.98	24.50
Montgomery	AL	60.17	39.74	20.43	33.95
Nashville	TN	62.46	37.27	25.19	40.33
New Orleans	LA	51.56	55.85	4.29	8.32
New York	NY	53.29	61.05	7.76	14.56
Norfolk	VA	68.46	31.66	36.8	53.75
Omaha	NE	59.20	39.65	19.55	33.02
Orlando	FL	61.91	31.78	30.13	48.67
Philadelphia	PA	59.79	58.44	1.35	2.26
Pittsburgh	PA	43.23	44.67	1.44	3.33
Raleigh	NC	41.49	27.33	14.16	34.13
Richmond	VA	65.12	40.46	24.66	37.87
Rochester	NY	40.93	43.7	2.77	6.77
Saginaw	MI	53.26	57.52	4.26	8.00
St. Louis	MO	71.55	58.56	12.99	18.16
San Antonio	TX	39.83	18.1	21.73	54.56
Savannah	GA	57.41	41.3	16.11	28.06
Shreveport	LA	59.74	40.92	18.82	31.50
Tampa	FL	59.32	37.55	21.77	36.70
Toledo	OH	63.81	49.26	14.55	22.80
Tyler	TX	42.95	28.46	14.49	33.74
Waco	TX	37.94	27.46	10.48	27.62
Washington	DC	65.91	48.27	17.64	26.76
Wilmington	NC	39.70	26.55	13.15	33.12
Youngstown	OH	41.16	47.43	6.27	15.23

Sources: 1960 National Historical Geographic Information Systems Data and 2000 decennial census