DOES INCREASING BLACK HOMEOWNERSHIP DECREASE RESIDENTIAL SEGREGATION?

A Dissertation

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by

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Abstract

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Historically, overt discriminatory practices in the housing market worked against neighborhood racial integration. Theoretically, changes in home mortgage lending, which offer more lending opportunities to previously underserved populations and areas should reduce levels of residential segregation. Differential access to lending continues to exist in that certain forms of lending disproportionately contribute to increased black homeownership. This study evaluates the link between homeownership among blacks and changes in residential segregation during the 1990s. Using Home Mortgage Disclosure Act data from 1992 through 1999 and the 1990 and 2000 Census data, OLS models test for the effects of lending, ecological, economic, and population characteristics on changing segregation patterns in some MSAs during the 1990s. Findings suggest that changes in lending to black homebuyers facilitated declines in segregation experienced during the 1990s. The increased share of mortgage loans received by blacks contributed to black
homeownership and decreased segregation levels in MSAs with significant black populations. However, segregation seems to persist, in part, because of continuing disparities in lending.
DEDICATION

I dedicate this dissertation to my family and friends, who offered constant support.
I am forever grateful to my husband, Eric, who encouraged me at every stage.
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INTRODUCTION

Residential segregation makes it more difficult for blacks to acquire the same financial capital, employment, education, and political power as whites. Residential integration, wherein income can be converted into social status, has been made difficult for many blacks, because their access to some neighborhoods and forms of housing has been restricted by decades of unequal financial opportunities, discriminatory treatment in the housing market, and prejudice from neighbors. Improvements in these areas have removed some of the barriers depressing black homeownership rates. As homeownership among blacks has increased over the last decade, residential segregation between black and white households has also declined. This study evaluates the link between increased homeownership among blacks and their segregation from whites. Specifically, I address the potential for home mortgage lending to contribute to integrated neighborhoods, while the current differential access of black and white homebuyers’ to certain types of home mortgage lending can impede the potential for more significant declines in racially segregated neighborhoods.

In 1972, the Department of Housing and Urban Development’s National Academy of Sciences Advisory Committee wrote that residential segregation is caused and maintained by a complex “web of discrimination” via a separate housing market for blacks and whites (National Academy of Sciences, 1972, chap 3).
Following this statement, many attempts at pinpointing a single or most important cause have been made. Researchers using economic theories maintain that the main culprit is the wealth gap between black and white families (see Wilson, 1987). Some have argued that personal preferences are the most important factor in maintaining segregation (Clark, 1986), while others have argued that more important is discrimination in the housing market as mediated by real estate agents and financial institutions (Galster 1987, 1988; Yinger, 1986). Historically, legal discriminatory access to home mortgage credit prevented blacks from becoming homeowners at the same levels as whites, leading to extreme restrictions on where blacks could live in relation to whites. With federal policies aimed at increasing homeownership among blacks and other minority groups, the numbers of black homeowners are at their highest level to date.

The 1990s were a decade of increased enforcement of housing-based government policies as witnessed by the changes made in the home mortgage lending industry. New federal initiatives put pressure on lenders to serve low income and minority borrowers, while at the same time, deregulation of the home mortgage industry led to new lenders competing for business in these previously underserved markets. As a result, lending to underserved markets soared during the 1990s and homeownership rates for these groups reached all-time highs. Although minorities account for 24 percent of the population, they made up 40 percent of new homeowners between 1994 and 1999. In 1999, the disproportionate gains made by minority households were evidenced by the fact that homeownership rates for blacks and Hispanics increased at twice the rate as for whites (U.S. Department of Housing
and Urban Development, 1999). The increase in homeownership among these families could dramatically change patterns of residential segregation.

Reforms to mortgage lending during the 1990’s attempt to eradicate homebuying discrimination against minority borrowers and neighborhoods. In so doing, they offered the potential for integrating black and white households and for reinvesting in neighborhoods that have been traditionally neglected. Discriminatory access to credit depresses home ownership rates and neighborhood options for the discriminated groups (Immergluck, 1998). Following the past few decades of gradual but significant changes, during the 1990s, the country as a whole experienced continuing reductions in the level of race-based segregated housing1. This dissertation addresses the causal relationship between increased levels of home mortgage lending to black families and decreased black-white residential segregation.

As well as evaluating homeownership changes’ impact on residential segregation, government policy reforms and recent changes in the mortgage lending industry require reexamining some prior theories and empirical findings on residential segregation2. Farley and Frey (1994) conducted a study evaluating the effects of a metropolitan area’s historical, social, and economic characteristics on changes in segregation between black and white households during the 1980s. In looking at the

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1 One measure of segregation, the dissimilarity index, indicates that residential segregation by race has declined by 4.3 percentage points (Glaeser and Vigdor, 2001).

2 The mid-twentieth century was characterized the systematic segregation of white households from minority households, with government organizations like the Federal Housing Administration (FHA) and the Veterans’ Administration (VA) supporting the idea that neighborhood stability arises out of residential homogeneity. Federal mortgage practices continued to promote residential segregation until the 1968 Civil Rights Act and Equal Opportunity Act made race-based mortgage discrimination illegal. Despite this legislation, the legacy of these government policies and some continued discrimination by lenders and realtors have been cited as leading to currently segregated neighborhoods and creating barriers to homeownership for blacks and other minorities (Yinger, 1995).
In the 1990s, I base my model on theirs as well as extend beyond it by investigating lending’s impact on integrating neighborhoods. The fact that segregation declined substantially in some cities and less so (or even increased) in others suggests that conducting an intrametropolitan study can help explain differential changes in segregation. I use an ecological model similar to Farley and Frey’s (1994) study to address variation in segregation changes among metropolitan areas during the 1990s. And, by including metropolises’ lending characteristics, I can test the relative effects the trends in home mortgage lending had on changing residential segregation during the past decade.

In this dissertation, I pay particular attention to the possible role of different forms of mortgage lending. Massey and others have argued that lending discrimination against minorities is a significant and direct cause of racial residential segregation (see Massey and Denton, 1993). However, the 1990s saw significant improvements in lending to these groups (Evanoff and Segal, 1996). Only a few studies have attempted to establish a direct link between lending and segregation (Immergluck, 1998, MacDonald, 1998), and these studies are limited to a particular city and shorter time periods than the almost decade-long and national study I am conducting. The data I am using is also innovative in that I combine Home Mortgage Disclosure Act data, which can effectively assess changes in levels and types of home buying, with Census data from 1990 and 2000, which can assess changes in metropolitan areas’ demographic characteristics (e.g. population and economic growth) as well as segregation levels.
Using these data sources, it is reasonable to ask, has racial segregation declined as a result of lowered lending barriers to minority home ownership? Have homeownership increases among blacks had beneficial effects on segregation regardless of the type of home mortgage loan? Or, for example, is lending from traditional sources more influential than those from specialized lenders? How have loans specifically intended to increase homeownership among first-time homebuyers impacted segregation changes? In addressing these questions, I investigate and discuss the larger contextual effects of race and wealth on levels of spatial race-based segregation in housing across regions during the 1990s.

I begin this dissertation by reviewing discussions and research on how average differences between black and white households’ finances, neighborhood and population characteristics, and access to mortgage credit contribute to current trends in segregation patterns. I incorporate measures for changes in home mortgage lending within an ecological model used by Farley and Frey’s study on metropolitan areas’ segregation changes during the 1980s (1994). In general, I address how increases in black homeownership allow for decreases in residential segregation; however, in part, segregation persists because of disproportionately servicing predominantly black neighborhoods with different forms of lending than in predominantly white neighborhoods.

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3 As discussed in later chapters, HMDA data is supplemented by data that delineates loan records as being from regular, subprime, or manufactured housing lenders. For my study, I refer to regular lenders as traditional. The term “specialized lenders” includes subprime and manufactured housing lenders, but I investigate the each type of lender’s distinct effects on changing segregation rather than as one group.

4 HUD services loans through the FHA that the government insures against lender loss. FHA intends their loans to primarily service low-income and minority first-time homebuyers. This study compares the effect of FHA loans to that of conventional (or uninsured) loans. The vast majority of conventional loans come from the three lenders defined in the previous footnote.
REVIEW OF RESEARCH AND THEORY

Some researchers argue that race plays the primary role in creating and maintaining current patterns of segregation between black and white households (Denton and Massey, 1988; Immergluck, 1998; Kain, 1987), while others contend that the racial gap in homeownership has more to do with groups’ economic disparities than with the persistence of racial discrimination (Wilson, 1987). According to Wilson’s arguments, the decreased ability of black compared to white families to purchase a home is reflected in segregated neighborhoods, because some residential areas require more money to move into them than others (i.e. more expensive homes). For those who believe forms of racial discrimination continue to shape where blacks and whites live in relation to each other, these average economic differences do little to explain persistent segregation levels in the US. Regardless of which factor one considers to be the primary reason behind residential segregation, all agree that current housing patterns exist within the larger context of history, societal prejudices, and government policies. “Housing conditions are basically the result of the interrelation between resources of households, preferences of households, and the availability and accessibility of dwellings” (van Kempen and Ozuekren, 1998). Along with a growing black middle class and importance of class over race, other potential factors in reducing residential segregation levels by race include the
weakening of whites’ prejudicial neighborhood preferences, decreasing overt housing market discrimination, and shrinking lending disparities. Investigating variation among US cities in these characteristics should help explain the varying degrees of segregation decreases across the country.

The nation as a whole experienced a very minor shift toward residential integration during the 1990s. According to some estimates, the national average score of dissimilarity between black and white households declined by only one point between 1990 (69.9) and 2000 (68.8) (Mumford Center website). This suggests that residential segregation continues to be a national problem. And, while the nation’s average for segregation change is small, certain MSAs experienced more substantial changes than others in the racial compositions of their particular neighborhoods. Variation in MSAs’ segregation changes range from areas where the dissimilarity index dropped by almost 16 points to other areas where the degree of dissimilarity rose by 8.5 points. It is important to examine the reasons behind varying changes among MSAs.

The 1990s offer a unique period of time to study segregation as the racial composition of homeowners changed significantly. Policy changes enacted at the beginning of the decade can be evaluated in terms of the declines in housing segregation that occurred by the end of the decade. For instance, deregulation in the lending market removed certain restrictions on interest rates and lending qualifications, theoretically allowing the housing market to work more freely. Additional information provided through the Home Mortgage Disclosure Act (HMDA) helps federal regulators and independent researchers study the lending
practices of home mortgage institutions. HMDA revisions require lenders to collect data on the characteristics of applicants and results of the home mortgage application process. The requirement that the loan applicant’s race be disclosed is intended to encourage more equitable home mortgage lending to minorities and low-income households. This information, along with the authority sanctioned in the acts, allows federal regulators to better enforce fair lending laws against discrimination by location, race, or income (Buist, Megbolugbe, and Trent, 1994). In looking at changes in lending between the beginning and end of the decade, this study addresses how significant the reforms made in recent decades are in changing race-based residential segregation by the end of the 1990s.

I organize the following discussion of theories and previous research on race-based residential segregation into three sections. First, I review the evidence supporting and negating economic differentials between blacks and whites as the reason for their segregation and describe how an area’s location in the country and its population characteristics can impact segregation levels. Second, I discuss the housing market’s past and present race-based differential treatment, leading into the third section, which lays out this study’s hypotheses.

*Decreased Segregation within an Ecological Framework*

Obtaining the money to purchase a home is one of many factors influencing where the home is located. In addition to increased levels of mortgage lending to black homeseekers, an area’s environmental context and population characteristics help determine its potential for becoming more integrated. Initial investigations of
lending patterns also reveal that loan levels vary across region and populations. Therefore, I develop my model within an ecological framework, using Farley and Frey’s study (1994) of segregation changes during the 1980s. An appropriate model for incorporating lending trends, Farley and Frey consider the effects of historical factors and recent urban developments on changes in the dissimilarity index of segregation (1994). Specifically, their study tests the effects of the following MSA characteristics: region, functional specialization, age of MSA, improvement in the black-white household income gap, increase in housing units during the decade, initial population size and whites’ degree of exposure to blacks, and growth rate differences between the white and black populations and between black and non-black minority populations\(^5\). According to their framework, an MSA’s established traits either help or hinder declines in segregation. Thus, recent changes in MSAs’ population and economic characteristics influence the degree of change in segregation levels based on its racial and economic history.

**Economic differentials**

Theories based on economic differentials argue that the wealth and income gaps between blacks and whites explain why blacks are so highly spatially segregated from whites. This theory suggests that income differentials significantly factor into the differential abilities of blacks and whites to purchase homes. Economists rely on

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\(^5\) Farley and Frey (1994) found segregation changes in the 1980s vary according to MSAs’ region, functional specialization, recent housing construction, and whites’ exposure to blacks. For my models, I recreate all of Farley and Frey’s measures for 1990-2000 except indicators for an MSA’s functional specialization and age. Unfortunately, the Census data necessary to measure an MSA’s age and functional specialization are not currently available from the Census Bureau’s tables. Farley and Frey did not find an MSA’s age significantly affects changing segregation levels but that “retirement” and “military communities” had significantly different segregation level changes from “diversified” areas of functional specialization.
factors like human capital to explain disparities, while sociologists emphasize the social context as creating the system by which these variables become mechanisms for inequalities.

The economic differentials theory posits that blacks live where they can afford and that is often not in the same neighborhoods that whites can afford because of differentials in finances. While this idea makes sense conceptually, it does not stand up to empirical scrutiny. That income is the factor contributing to race-based residential segregation is negated by empirical evidence from numerous studies. High-income and low-income blacks are both segregated from high-income and low-income whites, respectively (Denton and Massey, 1988; Erbe, 1975; Farley, 1977; Fielding and Taeuber, 1992; Massey, 1979; Simkus, 1978). “Middle-class blacks are much more likely than whites to live in poor neighborhoods” (Massey et al, 1987, p. 2). Also, most neighborhoods are heterogeneous with respect to the social and economic composition of the residents (Farley, Fielding, and Krysan, 1997), and the differences in incomes between blacks and whites are not large enough to fully explain segregation levels (Kain, 1987). Thus, this body of research suggests that race-based segregation levels would be much lower if it were based on socioeconomic differences alone. Perhaps, as I provide arguments for later in this chapter, the smaller sizes and quantity of loans received by black families in relation to white families has contributed as much if not more significantly than actual income differences in residually segregating blacks and whites from each other.

Class-based segregation explains a fraction of segregation levels, and the proportion varies by city and region. Pascal (1967) attempted to explain segregation
by economic status rather than simply economic differentials using a multiple regression approach, including in his model blacks’ and whites’ differential access to jobs, proportions of single- and multiple-family structures in the neighborhood, and the average monthly cost of housing (rent or mortgage payment). Using 1960 census data, Pascal found that 33 to 46 percent of the variation in percentages of black households living throughout census tracts in Detroit and Chicago could be explained by affordability of housing and access to jobs. In Detroit, differential housing expenditures between blacks and whites were rejected as a cause of segregation, because the amount blacks and whites pay for their houses are not mutually exclusive (Farley, Fielding, and Krysan, 1997). In other words, how much was spent on housing did not explain why blacks and whites lived in different residential areas. Farley (1995) found that income plays a similarly small role in the segregation of blacks and whites in St. Louis. In a critical review of the literature on the causes of residential segregation, Clark (1986) states “there is a vast difference between expected distributions, if only income is the causal variable, and the patterns to be expected under the influences of income, equity, assets, and consumer tastes and preferences of black and white households” (p. 108). So, residential segregation between blacks and whites cannot be completely attributed to economic status, but it does play a role.

The bottom line is that buying a home requires money. Income alone does not explain the extent to which black households are segregated from whites’, so the utility of money in buying a home differs for blacks and whites. It is much more difficult for black households compared to financially comparable white households
to use their income gains to help them move into more expensive neighborhoods (Massey et al, 1987). Improvements in blacks’ socioeconomic positions have brought about a larger middle class more financially capable of purchasing homes and integrating neighborhoods by race. If economic theories are to be proven, increases in black compared to white households’ economic positions in an area will decrease levels of segregation.

Often cited as a cause of residential segregation, economic disparities between black and white households have not been empirically supported as a primary cause. The increasing black middle class may be a reason for increased black homeownership, but improved economic status alone does not seem to bring about integrated neighborhoods. That the median household income is increasing faster for black families than for white families does probably not significantly contribute to decreasing segregation levels. Farley and Frey’s results are consistent with others’ in finding that relative changes in black and white households incomes do not significantly impact declines in segregation (1994). However, the fact that the average white household has more disposable income than the average black household must be taken into account when discussing home purchase options.

Location and population

The historical processes involved in creating regional differences in metropolitan areas’ racial compositions as well as variation in cities’ population growth and new construction affects where blacks purchase homes. Regional differences have always existed in the segregation levels between black and white households. Over the past century, northeastern and midwestern MSAs experienced
very different migration patterns from the South and West’s. In the 1920’s, blacks moved out of the South in large numbers, looking for employment in industrial cities in the Northeast. During the post-World War II boon in housing construction for families, the growth of suburbs in the northeastern and midwestern states provided whites in these regions with the residential areas to move away from the influx of blacks (Farley and Frey, 1994). The almost all-white communities established new residential regulations that restricted black families’ access to the suburbs (Newman, 1993). The creation of segregationist laws dictating where blacks could live “established a pattern of segregation that proved durable” (Logan, 2002, p. 19). Combined with their lower socioeconomic status (as well as further detracting from it) and the housing industry’s segregationist policies (e.g. redlining), these statutes officially maintained communities created around the idea that blacks and whites should not live in the same neighborhoods in the Northeast and Midwest. In southern states, the historical process of segregating residential areas differed from northeastern states’ in part because of their relatively slower construction of housing. Post-World War II MSAs in the South did not experience as substantial an increase in population and so did not experience a corresponding increase in housing construction. Because of this, whites had fewer opportunities to move to racially exclusive communities in the South (Farley and Frey, 1994).

Areas with more available housing possess greater potential for shifting the distribution of black and white households. For increased black homeownership to lead to less segregated neighborhoods, the amount of new housing construction must be large enough to allow for a change in location of homes. In addition, legislation
passed in the past few decades make discrimination illegal in housing built after 1969. Using this variable to look at change in residential segregation between 1980 and 1990, Frey and Farley (1994) found that the higher the percent of new housing construction, the lower the segregation levels for that area. Larger decreases in segregation during the 1990s should result from higher percentages of housing built within the last decade.

Current migration patterns could also bring about different patterns of segregation in certain areas of the country. Cities in the West are growing more quickly than in the Northeast, so blacks’ options for purchasing homes in certain areas (e.g. predominantly white neighborhoods) are more limited in the latter region. In faster-growing areas in the West and South where much of the available housing was built after fair housing laws were enacted, the opportunity for blacks to purchase homes in predominantly white or racially mixed neighborhoods is likewise expanded. Over the last decade, the Midwest has experienced new and significant increases in the size of the Hispanic population, while the black population in the Northeast has grown faster than in previous years. As well there is regional variation in whites’ attitudes toward blacks,’ strongly suggesting neighborhood preferences vary by region. Farley and Frey’s findings support these arguments in that, compared to cities in the South, location in the Northeast, Midwest, and West significantly hindered decreases in segregation during the 1980s (1994).

The size of an area’s total population as well as changes in its racial composition also affects segregation. Previous studies show that larger metropolitan areas are more segregated than smaller ones (Massey and Denton, 1987), so
population size can predict segregation levels. Proportional changes in sizes and
growth rates of the ethnic groups residing in an MSA affect neighborhood preferences
and thus homeowners’ locale decisions. Segregation between black and white
families is lower in areas with greater proportions of non-black minority populations
relative to the black population. One reason for this is that many of the geographic
areas with relatively larger numbers of Hispanic and Asian Americans have not
traditionally been areas where many blacks have moved (Frey and Farley, 1993). In
addition, Santiago (1989) suggests that larger Hispanic populations can provide a
“buffer” between black and white residences, thereby minimizing the contact and
potential antagonism between groups. Findings from Farley and Frey’s study do not
support these arguments in that neither a faster growing black population compared to
whites nor a faster growing non-black minority population compared to blacks
significantly affects changed segregation levels during the 1980s (1994).

Changing attitudes toward living in more racially mixed neighborhoods over
the past several decades have also been noted as indicators of change in segregation
levels. Over the last several decades, whites’ residential preferences have shifted
significantly. They are now more likely to believe that blacks should be able to live
in whatever neighborhoods they can afford. Sixty percent in 1960 and only 13% in
1990 believed whites should be allowed to keep blacks out of neighborhoods and
blacks should be OK with that (Farley et al, 1993). That whites now profess a more
tolerant attitude toward racially mixed neighborhoods ought to be an important factor
in increasing integration levels. However, survey evidence from national and local
studies shows that, although blacks prefer neighborhoods to be half black and half
white, whites prefer predominantly white residents in their neighborhoods (i.e. under 30%) (Clark, 1986). In addition, even though where blacks and whites would prefer to live suggests a shift toward integration, actual behavior has not changed as dramatically.

Farley’s review of surveys on neighborhood preferences indicates that blacks are now more open to living in neighborhoods with more whites, but that many whites are not as open to neighborhoods with high percentages of black residents (1993). In 1978, Farley and his colleagues found neighborhood preferences to be sharply divided by race with blacks preferring areas with a majority of black residents and whites preferring areas with few or no black residents. In more recent years, both blacks and whites have expressed increased openness to integrated neighborhoods. The percentage of both blacks and whites saying they would prefer a racially mixed neighborhood to a predominantly black one has risen significantly (Farley et al, 1993). However, in surveys and, especially in the real world, despite a growth in whites holding integrationist ideals, many whites continue to choose moving out of a neighborhood with more than a moderate percentage of black residents.

Although surveys on attitudes toward living in racially mixed neighborhoods show an increasing acceptance by both whites and blacks (see review by Farley, Fielding, and Krysan, 1997), actual patterns of segregation provide scant evidence that attitudes toward racial integration have an effect. Farley and his colleagues argue that preferences work together with economic disparities and discrimination in the housing market to maintain segregation levels (Farley, Fielding, and Krysan, 1997). So, although many more whites than in previous decades support the idea of
integration, the number of whites who put integrationist ideals into action by moving into a predominantly black neighborhood or remaining in a racially changing neighborhood remains low.

As described above, more blacks than whites would like to see integrated neighborhoods. If preferences for neighborhoods with certain racial compositions do help determine home purchase locations, more loans to minorities and minority areas will result in increased residential integration. Thus, by strengthening black homebuying power through increased lending, blacks’ group preferences could be actualized as evidenced by an increase in integrated communities (i.e. decreased segregation levels between black and white households). In this way, I will be implicitly looking at the effects of neighborhood preferences in assessing the extent to which increased mortgage lending as compared to other factors has perhaps allowed for blacks’ expressed preferences for more integrated neighborhoods.

In terms of explicitly testing the effects of preferences for neighborhoods with certain racial compositions, I follow Farley and Frey (1994) in including an index that measures whites’ exposure to black neighbors at the beginning of the decade. White exposure to blacks measures the potential not actual contact between members of different groups in a city’s tracts. If an MSA’s white residents prefer more integrated neighborhoods, higher levels of whites’ exposure to black neighbors at the beginning of the decade would bring about larger decreases in segregation levels by decade’s end. Contrary to this possible outcome, however, Farley and Frey (1994)

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6 The exposure index, unlike the dissimilarity index, is statistically dependent on groups’ relative sizes (Massey and Denton, 1988). For example, Blau (1977) discusses how a minority group with a large MSA population size, who are evenly distributed across census tracts in the MSA, can be minimally exposed to majority group members.
found that the higher whites’ exposure to black neighbors in 1980, the smaller the decreases in segregation levels during that decade.

Within the context of the factors mentioned above, neighborhoods’ racial compositions have been shaped by a history of discrimination in the housing market. The following section provides an historical overview within which to place this study’s arguments on how and why recent changes in mortgage lending impact segregated housing in the U.S. At the end of this section, I describe the hypotheses being tested.

*Home Mortgage Lending: Past and Present*

The present structure of U.S. cities is a direct consequence of past government and housing policies that deliberately restricted the housing options available to certain groups. The National Housing Act of 1934 established the FHA, and its administrators explicitly supported the racially segregated spatial development of neighborhoods. A quote from the FHA’s 1938 Underwriting Manual to banks’ loan officers read:

> Areas surrounding a location are [to be] investigated to determine whether incompatible racial and social groups are present, for the purpose of making a prediction regarding the probability of the location being invaded by such groups. If a neighborhood is to retain stability, it is necessary that properties shall continue to be occupied by the same social and racial classes. A change in social or racial occupancy generally contributes to instability and a decline in values.

To fulfill this objective, the FHA color-coded maps to indicate neighborhoods’ “credit-worthiness,” assigning red to racially mixed and thus less desirable neighborhoods (Farley and Frey, 1994).

Post WWII suburban housing construction was fueled by the expanded credit market made available to segments of the population through the FHA and the
Veterans Administration (VA). The VA offered guaranteed loans for servicemen following World War II. The FHA between 1935 and 1974, mostly for suburban housing construction, insured 11.4 million home mortgages (Judd, 1991). One third of all home purchases made in the 1950s, a decade characterized by suburban expansion, were backed by the FHA and VA. Black families were left out of this home buying boom, because the FHA insured very little inner-city housing (Judd, 1991), and blacks were prevented from moving from the city to the suburbs due to discriminatory FHA policies (Conley, 1999).

The FHA further restricted blacks in their housing options by financially backing residential projects that had restrictive covenants associated with them that prevented nonwhites from purchasing homes in white neighborhoods. This excluded blacks from most suburban areas by preventing them from accessing the federally insured mortgage markets. Racial covenants were ruled unenforceable by the Supreme Court’s 1948 decision on the Shelley v. Kraemer decision. While this caused the FHA to change its underwriting guidelines, the actual practice of restrictive covenants was not prevented. For example, between 1946 and 1959, “less than 2 percent of all the housing financed with the assistance of federal mortgage insurance was made available to blacks” (Judd, 1991, p. 742). So, not only were black families prevented from obtaining loans in general, the neighborhood options available to them as shown through realtors or even through individual home sellers were restricted, further increasing levels of residential segregation.

The tactics used to keep black and white residences separate are now illegal, however blacks’ access to homeownership continues to be somewhat restricted.
Although the homeownership gap is declining, blacks and whites in the process of buying homes experience what some have termed a dual housing market (Yinger, 1995). In the last few decades, and especially during the 1990s, federal policy objectives were created to increase black homeownership in an effort to reduce the racial disparity in homeownership rates. During the last decade, the gap in homeownership rates between white and traditionally underserved families has decreased substantially. Although minorities account for only 24 percent of the nation’s total population, they make up 40 percent of new homeowners between 1994 and 1999 (HUD, 2000). While whites only experienced an increase of 33.1% of home purchase loans between 1993 and 1999, blacks’ proportion of total mortgage lending rose by 118.9% (Federal Financial Institutions Examination Council, 2000). In fact, 2000 saw record high homeownership rates for central cities (51.9%) and blacks (47.3%) (HUD, 2000). Despite these dramatic changes, the advances in homeownership made by areas and groups with traditionally lower homeownership rates are still well below the national homeownership rate of 67.2% as well as the homeownership rate for white families of 70% (HUD, 1999). The effects of housing market changes might take time to fully eradicate the homeownership gap, but the positive changes that have occurred already are striking. The question now is whether homeownership increases among blacks create more integrated neighborhoods, or are black homebuyers predominantly buying in segregated or racially changing neighborhoods?

Black and white families continue to experience differential treatment when attempting to buy homes. Numerous studies provide evidence that blacks do not even
get to see some neighborhoods that would be shown to whites of comparable financial backgrounds simply because of a realtor’s decision (see Galster, 1990b).

Massey and Denton (1993) reviewed the historical and empirical evidence, showing that banks and savings institutions deny home mortgage loans to potential black homeowners more frequently than whites. Even when background characteristics are equivalent, the consistent finding is that “black and racially mixed neighborhoods receive less credit, fewer federally insured loans, fewer home improvement loans, and less total mortgage money than socioeconomically comparable white neighborhoods” (Massey and Denton, 1993, p. 106). There are white-black gaps in approval and denial rates across income classes, neighborhood types, regions, types of loans, and types of lenders (Avery, Beeson, and Sniderman, 1994). The credit to buy homes is necessary assistance for attaining homeownership (Buist, Megbolugbe, and Trent, 1994), so discriminatory treatment experienced during the home buying process has a substantial influence on which families can own homes in what neighborhoods.

Historically (and, some might argue, currently), black households have been restricted from accessing a pool of common money.

Munnell and colleagues (1996) conducted a controversial study on the lending record of the Federal Reserve Bank of Boston. The Federal Reserve Study suggests that black applicants are 60 percent more likely than white applicants with similar background and creditworthiness to get rejected (Munnell et al, 1996). Their findings support the idea that it is due to race-based discrimination and not financial disparities, because even the poorest white applicant is more likely to get a mortgage loan than the highest income black. In fact, the authors argue, the differential
rejection rates result from assumptions about the applicant’s creditworthiness based on race. Although it has been subjected to numerous critiques, their findings that black applicants are denied loans more often than white applicants with comparable credit histories and incomes have withstood methodological criticisms of the data, statistics, and variables used (see critical review by Ross and Yinger, 1999). After accounting for some of the criticisms and reanalyzing the data, Ross and Yinger (1999) still found minority status to be predictive of higher denial rates. “In our view, the Boston Fed Study builds a prima fascia case for discrimination, and no scholar has come close to showing that the observed intergroup differences in loan approval in Boston can be justified in business terms” (Ross and Yinger, 1999, p. 82).

Other research supports the Boston Fed Study’s findings that minorities, and especially blacks, experience higher rejection rates than their white counterparts. Gotham (1998) examined Kansas City and found that minority applicants have a higher rejection rate than white applicants, with higher-income minorities being rejected at higher rates than lower-income whites. Meyers and Chan (1995) found with HMDA data that denial rates are 12 percentage points higher for black applicants than for white applicants even after controlling for borrower and loan characteristics as well as the borrower’s predicted credit risk. So, in addition to not explaining residential segregation, any economic differences between black and white borrowers fail to account for lending disparities.

The conclusion drawn from these studies is that race is important in determining loan approvals even when income and other factors are considered. When an entire group’s access to home mortgage loans is restricted, their home
ownership opportunities are significantly limited, establishing segregation based primarily on identification with that group. In this case, lending differentials between blacks and whites means that black families have been denied the ability to purchase homes as well as exercise their preferences in choosing where to live.

The literature discussed above provides a useful context within which to develop my arguments on the impact of different types of home mortgage lending. While theories on economic disparities between black and white families being the main cause of segregated housing have not been supported empirically, the decrease in average black/white income differentials demands investigation of its statistical importance relative to other causal factors. With the black/white income gap declining and mortgage lending increasing, the relative importance these two factors have on residential segregation and why is investigated. An area’s racial history and current levels of housing and population increases also influence where people decide to purchase their homes. The ecological context in which lending changes are occurring most certainly influences how large an impact increased black homeownership can have on integrating neighborhoods.

**Increased Lending and Decreased Segregation**

Continued increases in blacks’ incomes relative to whites’, in stated preferences for racially integrated neighborhoods, and in blacks’ abilities to access home mortgage loans for more expensive homes and thus neighborhoods may have contributed to reduced residential segregation based on race. In addition, the rapid growth in nontraditional lenders allows for the possibility that increased competition
for business will mean previously underserved populations are offered better lending options. Since discrimination in mortgage lending has led to residential segregation in the past, either explicitly through federal policies or implicitly in the form of racially discriminatory loan denials, as home mortgage lending opens more doors to black homeownership, blacks can use this opportunity to purchase homes where they can afford.

The legacy of differential treatment in the housing market that this racially biased past has left behind has severely limited the home purchase options available to black families. The criminalization of these discriminatory acts and the increased mortgage credit recently made available to underserved populations along with the rising liberalization of the publics’ racial attitudes and the improvements in blacks’ socioeconomic positions relative to whites’ have all contributed to the potential for radically altering the segregated residential patterns based on race that continue to characterize U.S. neighborhoods. Although expanded credit might help decrease segregation levels, lending characteristics themselves need to be addressed. I use this section to argue in support of the positive impact that increases in home mortgage lending can have on race-based segregation patterns.

It is possible that the geographic distribution of certain forms of loans could inhibit the potentially integrating effect of increased homeownership among black families. As I discuss more fully in the passages below, if higher levels of black homeownership have been predominantly driven by a form of lending that does not play as big a role in white homeownership levels, more homebuying might simply contribute to maintaining racially segregated communities.
A lack of access to loans helped keep neighborhoods segregated in the past, so the recent increased lending to previously underserved populations and areas should lead to increased integration. Theoretically, increased credit increases the variety of neighborhood choices available to the borrower. No matter the income of the borrower, increased access to home mortgage loans expands the number and price-range of homes and neighborhoods into which the borrower can move. This argument rests on the idea that increases in black home seekers successfully receiving home mortgage loans increases home ownership prospects for blacks. In addition, the larger homes often built in more expensive (and predominantly white) neighborhoods are made increasingly available to black home seekers, a population previously denied this opportunity. The main point in favor of lending’s effect on race-based housing patterns is that increasing black homeownership opens housing markets previously restricted from this population. In the past, black home seekers had to rely more heavily on personal finances, which would not sufficiently cover home purchases. Increasing home mortgage lending to blacks increases both the proportion of the population able to purchase a home as well as improving overall housing options. Thus, neighborhoods’ racial compositions may have changed due to increasing homeownership among blacks.

Along with increased lending to minorities, the idea that blacks should be able to live wherever they can afford has been gaining support. However, as was mentioned earlier, although attitudinal surveys indicate whites’ increasing tolerance for living in racially mixed neighborhoods, their behavior has not evidenced these changes. Therefore, if whites’ actual preferences (i.e. living in predominantly white
neighborhoods) continue to dominate the home buying and selling market, increased lending will not prove to be a significant predictor of race-based residential segregation. With past financial restrictions placed on blacks’ home buying power now being loosened by blacks’ socioeconomic improvements and increased loans, blacks’ individual preferences for living in racially mixed neighborhoods may be playing a larger role in integrating neighborhoods. I argue that increased lending has contributed to declines in segregation in that blacks’ preferences may now be more powerful predictors of home buying locations than has been the case historically.

Of course, credit availability may prove as effective as income in predicting segregation levels. In other words, the increased lending to blacks experienced during the 1990s can lead to increases in black home ownership without actually integrating black and white households. As Immergluck found in Chicago (1998), when the increased black home buying is done in a small number of neighborhoods, particularly in neighborhoods that are already or soon will be segregated, the effect of increased lending to blacks on residential segregation is minimal. Immergluck discusses one possible reason for the lack of real change in that the home selling markets in Chicago might be in need of increased regulations. The persistence of discrimination in some areas of the housing market is a very real phenomenon (Ross and Yinger, 1998). If increased lending to blacks has not been a significant influence on segregation levels, the effect that home sellers and dealers have on what houses and residential areas are shown to some home seekers compared to others will be shown as an important area to investigate. Race-based steering by realtors and
differential marketing techniques can result in resegregation occurring despite the increased affordability of a variety of neighborhoods.

Lending in the housing market has gone through more changes than the criminalization of redlining and increased credit availability to previously underserved populations and areas. Among others, deregulation of the industry has led to more and newer lenders competing for business in markets that were virtually ignored in the past. Since 1975 and especially following deregulations in the housing market during the early 1990s, the home mortgage industry experienced the emergence of several new types of lenders making loans to underserved borrowers and neighborhoods. Specifically, subprime lenders entered the housing market to service and profit from previously neglected low-income and minority communities. As well, manufactured housing lenders have expanded their service to previously underserved populations. Theoretically, more lenders competing for business should improve borrowers’ credit options.

By eliminating interest rate ceilings and increasing where individual companies could offer services, the 1990s witnessed more competitive lending among financial institutions and increased services to previously underserved populations and areas. Releasing the home mortgage industry from past government regulations allows for the newer and more competitive lenders to reach out to minority populations and residential areas (Campen, 1998). Based on economic theories (see Becker, 1957), this increased competition will eventually drive out any of the lenders continuing to support discriminatory lending practices, opening the door between previously segregated neighborhoods. In addition, the more recently established
lending sources might not have the same biases that traditional lenders did. Supporting the idea that lending will help decrease segregation is that the increased competition for borrowers – now including a larger percentage of minorities – among home mortgage lenders may provide the mechanism necessary for desegregating neighborhoods. Thus, my first hypothesis (H1) states that where lending has increased to blacks, integration has also increased. The alternative hypothesis is that segregation is resistant to increases in credit access. Perhaps due to continued discrimination in the home selling market or to whites’ neighborhood preferences, increased home mortgage credit to blacks is not enough to change segregated housing in the current social and environmental context, thus mitigating loans’ integrating effects. As I discuss below, the sources and types of loans being used to purchase home are important avenues for investigation.

Increased lending per se may not have consistently curative effects on segregation. As introduced within the preceding arguments, certain home mortgage lenders are currently disproportionately located in areas with certain racial compositions. I argue that, while increased financial access is an important step in integrating black and white households, loans’ geographic distribution according to lenders’ neighborhood location is also central in determining the influence increased credit has on segregation patterns. Recent evidence shows that competition from new lenders has led to a segmented lending market wherein subprime lenders have disproportionately higher lending rates to areas with a primarily minority population than do traditional lenders. Although loans to black borrowers and areas have increased substantially in recent years, much of this increase has come in the form of
subprime rather than prime loans, especially since 1995 (ACORN). Because subprime lenders are primarily located in minority neighborhoods and the costs of receiving their loans are higher than those associated with traditional loans, the impact of increased lending to blacks from specialized lenders might be maintenance rather than reduction of segregated neighborhoods.

Historically, subprime lending has been associated with a borrower’s bad credit record as well as with higher fees and interest rates for the loan. Although subprime home loans are characterized as having a greater chance of delinquency than borrowers of traditional loans, differential treatment based on borrowers’ race exists even when looking at only subprime lending. In assessing lending discrimination, the National Fair Housing Alliance found that creditworthy whites inquiring into subprime lending are more often advised to investigate traditional lending opportunities than black borrowers with similar credit backgrounds (Dedman, 11/14/1999). Thus, much of the recent growth in black homeownership has occurred through subprime lending. While the bulk of white homeownership occurs through traditional lenders, loans from subprime lenders are largely responsible for increases in black homeownership during the 1990s. When subprime mortgage lenders concentrate their activity in predominantly minority neighborhoods, while larger lenders like commercial banks and thrifts give more loans to predominantly white neighborhoods, increases in black homeownership resulting from these loans will continue to be constrained within predominantly black residential areas.

Manufactured housing lenders offer another nontraditional avenue to homeownership. Although they do not as significantly target their loans toward
certain geographic areas, a manufactured home’s residential location is largely predetermined by land-use restrictions. Many municipalities discriminate against manufactured housing communities through restrictive zoning. These land-use policies limit individuals’ and developers’ abilities to place manufactured homes in more urban and suburban areas. Manufactured homes also get disproportionately placed in rural areas, because, in part, rural areas offer cheaper land on which to place manufactured homes. Increases in homeownership in the form of manufactured housing lending, then, may not help integrate neighborhoods as a result of the nature of this form of housing.

In addition to subprime lenders’ targeting certain geographic areas and populations and manufactured homes’ own geographic restrictions, loans from these specialized lenders are often accompanied by worse loan conditions than conventional loans from traditional lenders. Higher interest rates and fees cut into the amount homebuyers using specialized lenders can spend on a home. The lower quality loan terms provided by specialized lenders actually increase the cost of buying a home. That black homebuyers are three times more likely than their white counterparts to receive a subprime rather than a traditional loan for purchasing a house, regardless of their credit or other financial background (ACORN), means black homeowners are then being saddled with more debt than white homeowners.

Ross and Yinger (1998) contend that the disproportionate increased lending to

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7 HUD code does not regulate the locations of manufactured housing placement, but about half of all states have adopted regulations that prohibit exclusion and unfair treatment of MH (Nickerson, 1999).

8 Between 1995 and 1999, subprime purchase loans to black homebuyers rose 631 percent compared to a 285 percent increase for whites. The rate of prime loans going to black homebuyers fell, while the rate of prime loans going to white homebuyers rose 22 percent (Ross and Yinger, 1999).
minorities in the form of subprime loans “demonstrates the failure by banks and
traditional mortgage companies to make credit available equitably” (p. 8)\textsuperscript{9}. Their
argument can be extended further in that a disproportionate dispersal of certain types
of lending based on race will carry over to differentially influence the financial
capabilities of black and white in purchasing homes. Saddled with additional and
sometimes lower quality conditions associated with subprime and manufactured
housing lending, blacks may find it more difficult than whites who have received
traditional loans to purchase homes in costlier neighborhoods.

Potentially, lower quality loans centralized in predominantly black neighborhoods
could inhibit the integrating effects of increased lending to blacks. As subprime
lending has increased in predominantly black neighborhoods, the number of
traditional lenders in these neighborhoods – and thus loans with better conditions –
has decreased. That loans received by the average black borrower have worse
conditions and higher interest rates than those received by white households, on
average, could lead to less overt race-based differences in residential opportunities.
For instance, Apgar (5/24/2000) argues that the higher foreclosure rates associated
with subprime lending can result in destabilized communities characterized by
families’ financial strains and abandoned homes. Deteriorating neighborhoods lead
to lower property values, making integration more difficult to achieve.
Neighborhoods with high proportions of defaulted loans discourage white
homeseekers whose real estate brokers show them other neighborhoods. Because

\textsuperscript{9} Disparate income levels do not seem to be responsible for the differences in types of loans
going to black and white borrowers. Even among borrowers with the same incomes – whether higher
or lower income borrowers – there still exists a racial disparity in type of loan received. In 1999,
upper-income black borrowers were 4.1 times more likely to receive a loan from a subprime lender
than were upper-income and even lower-income whites (ACORN).
subprime and manufactured housing loans are often accompanied by lower quality rates and conditions than traditional loans, the power of these loans to increase housing opportunities may not be as great as that extended by traditional loans.

So, although increases in subprime lending and mortgages for manufactured housing have had a positive impact on blacks’ homeownership rates, the disproportionate distribution of subprime loans to blacks and restricted placement of manufactured housing suggests that the source of lending will affect increased lending’s potential for integrating where black families use their loans. If the distribution of loans from certain lenders is associated with race, the mere increase in lending rates to black borrowers may not result in increased residential integration among black and white homeowners. I argue that increases in loans from traditional lenders will have a more significant impact on changing segregation levels than loans from subprime and manufactured housing lenders. Thus, I hypothesize (H2) that traditional (i.e. regular) lenders are more effective than specialized (i.e. subprime or manufactured housing) lenders in reducing levels of segregation in neighborhoods.

The alternative to this is that sources of lending do not distinctly change segregation between blacks and whites. Lending from any sources may or may not play a role in racially integrating neighborhoods. Another possibility is that the type of loan itself may affect increased lending’s relationship with decreased segregation levels.

Home mortgage loans fall under two general categories: government-insured or uninsured. Seventy-five percent of all homes are bought using uninsured or conventional loans. The government insures some loans so that lenders of these loans do not incur debt if foreclosure occurs. So, by definition, insured loans incur a higher
degree of borrower versus lender risk compared to conventional loans. This arrangement is meant to encourage lenders help first-time and especially lower-income homebuyers purchase a home. Homeseekers with less money upfront are offered FHA loans, because they require lower downpayments and allow higher housing expense-to-income ratios than conventional loans. One outcome of this form of lending is that, in attempting to service populations with historically lower levels of homeownership, FHA lending is highest in minority and low-income neighborhoods. FHA lending to black and Hispanic borrowers occurs twice as often as to white borrowers (Bradford, 1998). Although HUD’s FHA lending policies may increase lending among previously underserved populations, that minority neighborhoods receive a disproportionate share of FHA loans could also mean increases in loans of this type do not help decrease racial segregation. A race-based distribution of different loans could result in the spatial distribution of homes purchased using these loans being partially determined by race.

To some extent, minority markets need government-backed loans because of lower incomes and some poor credit histories. However, neither the level of minority populations’ less solid credit histories nor the income gap between black and white households fully explain the discrepancies between the levels of FHA loans received by black and white borrowers (Bradford, 1998). In fact, the rate of FHA loans is almost twice as high in high income minority neighborhoods as in low income white neighborhoods, suggesting a stronger relationship between FHA lending and the neighborhood’s racial composition than the neighborhood’s income composition (Bradford, 1998). Even during the initial contact between home seeker and real estate
agent, minority applicants were advised more often than white applicants to use lenders who produce a high number of FHA loans\(^\text{10}\) (Bradford, 1998). Therefore, income and other loan qualifications do not fully explain the disproportionate levels of FHA lending in predominantly minority or racially changing neighborhoods compared to predominantly white neighborhoods.

In predominantly minority neighborhoods with a virtually nonexistent conventional market, there is less competition among lenders for borrowers’ business, making it easier to steer black and other minority applicants into FHA loans. Loan product steering can have lucrative results for lenders processing FHA loans, because they receive service fees from the FHA at multiple stages of the lending process. Service fees for lenders using FHA loans are almost twice that received by lenders using conventional loans (1.76 times) (Bradford, 1998). Processing foreclosures also earns lenders services fees, providing an additional incentive for dealing in FHA loans. In fact, the most expensive stages of loan servicing are default and foreclosure (Wyly and Holloway, 1999). Rewarding lenders for processing high volumes of FHA loans, especially when foreclosure garners even higher fees, suggests lenders might be using underqualified borrowers to make more money than they would by lending to borrowers with less risk of defaulting on their loans.

In addition to disproportionately higher lending among blacks and other minorities, the FHA provides lower quality loans compared to traditional

\(^{10}\) Fair housing tests conducted by the Chicago Fair Housing Alliance sent out equally qualified black and white testers/home seekers of the same sex and approximate age to apply for loans. They even followed the standard practice of having the black tester be slightly more qualified than the white counterpart. Before the mortgage lenders obtained any financial information, black testers were more often offered housing choices in predominantly minority or racially changing areas and lenders who process a high amount of FHA loans. Meanwhile, white borrowers with less qualified finances were more likely than qualified black borrowers to be offered a conventional loan (Bradford, 1998).
conventional loans. As with specialized lenders, FHA’s lower downpayment requirement is accompanied by higher interest rates. As well, the government’s 100% insurance against loss lowers FHA lenders’ risk, decreasing the incentive to write sound underwriting guidelines to help prevent defaulting on the loan (Wyly and Holloway, 1999). Typically, the mortgage industry blames poor underwriting and not borrower risk if an area experiences distinct patterns of default during the loans’ first year of performance. Bradford uses this assessment to conclude that, if all tracts with more than half the overall rate for the Chicago area were predominantly minority tracts, there must be an “extreme concentration of poor quality underwriting only in minority areas” (Bradford testimony, 1998). If loans subject to higher default rates are disproportionately offered to only certain populations, increasing these loans will not help decrease segregation levels.

Historically, as I mentioned in my review of US housing practices, the FHA program intentionally created and maintained racially segregated housing by restricting where blacks and whites could live through such methods as redlining neighborhoods. Now, although explicit techniques of controlling black residential movement are illegal, the distribution and quality of loans received by black homebuyers could continue to disproportionately affect black neighborhoods in ways that help maintain segregation between black and white households. If FHA loans consistently produce higher default rates than conventional loans and are disproportionately concentrated in minority communities, increasing black homeownership through these loans will not help decrease segregation levels. Analogous to the previous argument on the relationship between concentrated
specialized lending in predominantly black and minority neighborhoods and lending increases’ mitigated impact on integration, my third hypothesis (H3) states that, although areas with increased black homeownership may have experienced decreased residential segregation, increases in traditional conventional loans are more effective than increases in FHA loans in reducing levels of segregation. The alternative hypothesis is that government insurance of loans does not distinctly change segregation between blacks and whites.

I test these hypotheses within an ecological framework to investigate variations in the degree of changes in segregation levels experienced by MSAs between 1990 and 2000.
DATA AND METHODOLOGY

An Overview

Discrimination in lending has become an increasingly studied area as it so notably affects the shrinking homeownership gap between whites and ethnic minorities. Studies that have analyzed residential segregation as a correlate of lending in the housing market often have looked specifically at one city and only looked at aggregate lending rather than at the possibility that different types of lending could lead to persistent levels of residential segregation (Immergluck, 1998; MacDonald, 1998). This study investigates the impact of MSAs’ population, neighborhood, and home mortgage lending characteristics in changing race-based residential segregation between 1990 and 2000. Exploring intrametropolitan level factors helps identify lending’s role in shaping different neighborhoods’ racial compositions.

Within the body of lending research, this study is unique in that I am comparing decade-wide change as well as implementing a national analysis. While I will be looking at MSA variation in total lending received throughout the decade, it is also important to evaluate how lending changes made during the decade contributed to decreased segregation levels across the country. Among others, Munell and her colleagues’ Federal Reserve Study acted as a catalyst for change in the housing industry by focusing attention on disparate patterns of lending based on race (1992).
In 1993, largely as a result of these findings, HUD increased its investigation of their lending practices as well as announced that CRA regulations would be revised to more precisely measure lending outcomes by race. The home mortgage industry also became less regulated during the 1990s. By decade’s end, certain restrictions on interest rates and lending qualifications were removed. This helped bring about considerable growth in alternative lending markets between the beginning and end of the 1990s. The rapid rise of subprime and manufactured housing lending necessitates a before and after investigation of the spatial patterns of housing bought using these loans. Theoretically, increased awareness and industry-wide deregulations would allow the housing market to work more freely. This dramatic reorganization of the home mortgage lending market may exhibit lagged effects in terms of the location of increased black homeownership. Studying lending throughout the decade allows more time for the effects of the mortgage industry changes to be seen in the resulting racial composition of residential areas.

I am also looking at variation in residential segregation changes nationally rather than within one MSA. Segregation patterns differ by region, city size, and ethnic mix (Farley and Frey, 1994), thus, single city studies introduce a certain amount of bias in their conclusions about the relative importance of the causal factors involved in racially segregating housing. For example, the MSA Portland-Vancouver, OR-WA, on one side of the country, experienced large decreases in segregation (−15.6 degrees on the dissimilarity index), while, on the other side of the country, Brockton, MA, experienced large increases (8.5 degrees). Thus, a national
analysis is necessary to ascertain the reasons behind variation among MSAs in segregation changes.

Being able to look at the characteristics of households moving in and out of neighborhoods would create a more comprehensive study of racial change in a neighborhood over time, but data on home sellers is not as readily available as is data on the buyers. Additionally, this research is most interested in assessing the change in the neighborhood racial change among homeowners and I argue that using data to look at the racial changes in homebuyers provides the information necessary to implicitly measure homeowners’ racial composition in a neighborhood. Although knowing the race of the homeowners moving in as well as out of a neighborhood would be a more precise indicator, an increase in proportion of blacks buying homes in a neighborhood suggests that blacks will make up a larger proportion of the residents (Immergluck, 1998).

My study extends beyond previous lending studies on segregation by assessing the effects of different types and sizes of loans in order to check for the potentially different ways these characteristics can change race-based residential patterns. HMDA data is utilized to assess the change in loan patterns across the past decade, providing the information necessary to evaluate how increases in the proportion of home buyers who are black increases the likelihood of their constituting a greater proportion of homebuyers in that area. I use HMDA data to look at changes in the racial characteristics and loan characteristics of homebuyers in MSAs during the 1990s. 1990 and 2000 Census data provide indexes to measure change in the levels of race-based residential segregation as well as additional socioeconomic
characteristics on MSAs. I create a combined data file out of these two data sets to look at the patterns of residential segregation resulting from MSAs’ ecological and lending characteristics.

To do this, I first aggregated HMDA loan data into MSA records and then combined the aggregated HMDA data with 1990 and 2000 MSA-level Census data. This data set allows me to gain an initial understanding of the differences in loan characteristics of MSAs with varying levels of change in segregation and then to control for the relative effects of MSA’s population characteristics in assessing the impact of lending pattern changes over the last decade on segregating blacks and whites into different neighborhoods. I provide a more detailed account of my analytic plan following this section, which describes the data sources and sample criteria used as well as variable construction.

Data Description

Primarily, I create the data file used from two sources: 1992 through 1999 Home Mortgage Disclosure Act data and 1990 and 2000 Census data. Additional datasets provide supplemental variables, which I combine for the final data file. HMDA loan application registers provide a rich source of data on the type of loan (i.e. conventional or government-insured), the size (i.e. monetary amount) of the loan, the final disposition of the application, and the race of the applicant. HMDA data do not provide accounts for every home purchased in the US as not all mortgage financing institutions are required to report information; mortgage companies’ quality of information is not as good as from banks and thrifts; and HMDA data do not
include seller-financed or all-cash home purchases (see Barkovic and Zorn, 1996, for their assessment of the completeness of HMDA’s mortgage market coverage).

HMDA data do not directly identify lending institutions as subprime or manufactured housing, but HUD provides a list of these lenders for regulatory purposes. By categorizing the proportion of loan types by their lender, I can determine if they have different effects on segregation. HMDA data is available for every year starting in 1990, when most lenders were required to provide some demographic information on the borrowers and areas as well as data on the loan itself for every home mortgage application received. However, the variable definitions remain most consistent from 1992 onward, thus my dataset includes loan records from 1992 through 1999.

The Census data provide MSA measures for many neighborhood and borrower characteristics (e.g. population sizes, region, year housing built, and black and white households’ incomes). I obtained some of my study’s data directly from the online Census tables and other data from the University of Albany’s Lewis Mumford Center website. The Mumford Center generated population figures and segregation indices using Census data to be used for their ongoing research projects as well as providing access to others conducting relevant studies.

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11 HUD compiles the list of specialized lenders by researching trade publications, scanning HMDA data for lenders with high denial rates, and noting words in the HMDA list of institutions’ names identifying them as “discount” or “equity,” for example. If any of the institutions assembled using these means also specialize in FHA lending or sell large proportions of their loans to Fannie Mae or Freddie Mac, they are not counted as specialized lenders as these are not activities usually conducted by subprime or manufactured housing lenders. Then, lenders on the list are called and asked to verify their classification. Lenders who say they have been misidentified remain on the list if they respond that the majority of their loans are, indeed, subprime or for manufactured housing (Canner et al, 1999). The resulting list of specialized lenders appears on HUD’s website, www.huduser.org/datasets/manu.html.
My study makes use of their measures for MSAs’ dissimilarity scores between black and white household as well as counts for the total and white, black, Asian, and Hispanic populations. I identify the original Census tables for these and other Census-derived data in more detail below.

The U.S. Bureau of the Census conducts a census of the population through interviews and/or questionnaires of every household in the U.S. The Census 1990 Summary Tape Files and 2000 Summary Files include neighborhood demographic measures needed to assess the effects on segregation changes of population characteristics and changes of the 331 U.S. MSAs and PMSAs\textsuperscript{12}. It is necessary to have the additional demographic characteristics on the neighborhoods to be able to assess the relative importance of home mortgage loans among other causes of change in levels of residential segregation. Most importantly, the Census data provide me with the means to create the measure of segregation levels (i.e. dissimilarity index), essential for evaluating changes in the racial composition of neighborhoods.

\textsuperscript{12} The Mumford Center uses Census 2000 Summary File 1 (SF-1) and 1990 Summary Tape File 1 (STF-1), which report the characteristics for nine major race and Hispanic or Latino groups: White alone, Black or African American alone, American Indian and Alaska Native alone, Asian alone, Native Hawaiian and Other Pacific Islander alone, Some other race alone, Two or more races, Hispanic or Latino, and White alone (not Hispanic or Latino). The focus of my study is on addressing changes in black-white segregation levels, so I primarily use “White alone” and “Black or African American alone” as the race groupings in my analysis. I use data from 2000 Census Summary File 3 (SF-3) and 1990 Census Summary Tape File 3 (STF-3) to create blacks’ and whites’ household income measures for the populations’ relative changes in socioeconomic status and age of housing stock in an MSA. 2000 reports based on short form data (i.e. SF-3) consist of social, economic, and housing characteristics based on an approximate sample of 19 million housing units (about 1 out of every 6 long-form questionnaires). The values for items reported on the short form are taken from Summary Files 1 and 2. There are differences between the estimates in SF3 and the long form values in SF 1 or SF 2 when looking at small geographic places like tracts and block groups. The estimates from SF 3 do more closely match the SF 1 and SF 2 reports for larger geographic areas such as MSAs and states, meaning SF3 is an appropriate data file for my study’s goal of assessing MSAs’ changes in segregation levels. Partial discrepancies between short and long form data files also affect the 1990 Census reports, but because the weighting areas included relatively small places, “the long form estimates matched the short form counts for those places, but the confidence intervals around the estimates of characteristics collected only on the long form were often significantly wider (as a percentage of the estimate)” (Census websites, 2002).
I develop a stronger lending study than has been previously conducted by analyzing HMDA loan records in conjunction with important Census measures of the MSAs’ actual racial composition as well as other relevant neighborhood characteristics not available in the HMDA data set. I use MSAs as my unit of analysis, because results based on census tracts as the units of analysis tend to exaggerate the degree of segregation. For instance, there might be racial balance within tracts, but between tracts there could be a lot of racial inequality. Further, I am interested in discerning the impact of an MSA’s changes in lending amongst a collection of historical and socioeconomic characteristics noted for creating and maintaining race-based residential segregation. As often happens, areas within an MSA developed around a central city and, thus, have in common many of these MSA-level traits. Because of this, I use MSA boundaries as the unit of analysis for both the descriptive and multivariate portions of my analyses.

I restrict the sample used in all analyses by some lending and population characteristics\textsuperscript{13}. This study investigates originated home purchase loans for owner-occupied housing in US MSA with valid tract coding for both 1990 and 2000\textsuperscript{14}. HMDA data does not adequately cover non-MSAs, and Census data on MSAs are more openly available than non-MSA data. The data sets’ compatibility with each

\textsuperscript{13} Between 1992 and 1999, 963,291 loans (4.7\%) made in my sample of MSAs were missing race identification and are thus excluded from the aggregated data set.

\textsuperscript{14} “The MSA population generally includes all those living in the country or counties that contain the urbanized area and the residents of additional counties that are economically integrated with that metropolitan core” (Deaton and Lubotsky, 2001, p. 2). The Census defines MSAs as either a city with 50,000 or more residents or as a well-populated urbanized area (50,000 or more inhabitants) and an overall metropolitan population of at least 100,000 (75,000 in New England). An area that is already recognized as an MSA can be designated a Consolidated Metropolitan Statistical Area (CMSA) if it has a population of at least one million and if it has the support of local opinion to do so. Primary Metropolitan Statistical Areas (PMSAs) are the component areas contained within CMSAs. As of the 2000 Census report, there were 258 MSAs and 73 PMSAs (within 18 CMSAs) in the United States (http://www.census.gov/population/www/estimates/aboutmetro.html). For my purposes in this paper, I refer to both MSAs and PMSAs as MSAs.
other allows me to merge them into a data file with complete records for the times and areas studied. I use 2000 Census definitions to identify MSA boundaries and reconfigure 1990 metropolitan boundaries to match those of 2000. I conduct my analysis on only those MSAs that existed in both 1990 and 2000. As only originated loans actually lead to homebuying, I exclude loan applications, denials, withdrawals, and files closed for incompleteness. Looking at rates of loan applications and denials for area and borrower characteristics does not help directly explain the relationship between increased black homeownership through different forms of lending and changes in race-based residential segregation.

I also restrict the sample by the absolute or relative sizes of MSAs’ black populations. For there to be variation among MSAs in the distribution of their black and white populations, MSAs need to have a reasonable number of black residents comprising their areas’ total populations. As well, MSAs with large black populations experience more persistent segregation levels (Farley and Frey, 1994), so

15 Some changes were made to the race question between the 1990 and 2000 Census. Although respondents are now permitted to mark up to four racial categories (versus only one on all previous census questionnaires), the people that took advantage of this change amount to a very small percentage of the overall population. Less than 1.5% of the population surveyed identified with more than one racial category, so I follow the common convention of only using information obtained from those respondents who marked one race. Thus, racial and ethnic categories are identified as non-Hispanic white, non-Hispanic black, Hispanic, and Asian. Individuals are coded as white or black if they answered only “white” or “black,” respectively for their race and not Hispanic on their ethnicity. Individuals who identified as Spanish/Hispanic/Latino are included in the Hispanic category, regardless of race. Any non-Hispanic individuals who indicated they were Asian or Pacific Islander, regardless of ethnicity, are coded as Asian (Mumford technical notes).

16 Some MSAs included in the 2000 list of 331 US MSAs did not exist in 1990. Seventeen areas were not considered MSAs in 1990. Ten of these have black population sizes that kept them in the penultimate sample. Because these ten MSAs (Dover, DE, Myrtle Beach, SC, Sumter, SC, Auburn-Opelika, AL, Punta Gorda, FL, Goldsboro, NC, Hattiesburg, MS, Jonesboro, AZ, Greenville, NC and Rocky Mt, NC) are missing values for variables based on 1992 and/or 1993 data, I omit them from my final sample. Although the regressions in which I omit them show no significant differences from the regressions in which they were included, they do skew the measurements for changes in lending characteristics. Thus, the sample analyzed only includes MSAs with complete data in both 1990 and 2000.
limiting the sample in this way strengthens my findings on reasons for segregation declines. Once the HMDA and Census data are combined, I omit MSAs without substantial black populations. After restricting the sample according to these criteria, the data file contains 237 of the original 331 U.S. MSAs.

Analytic Plan

My analysis is based on a model that looks at the ecological context in which segregation occurs to assess how and why changes in independent factors such as a city’s population, economic changes by racial group, housing construction, and location affect changes in segregation levels. Previous studies on racial segregation patterns use what Massey and Denton termed the “metropolitan context” to frame their research (Massey and Denton, 1987, 1988, 1989; Taueber and Taueber, 1965). As stated above, I am partially replicating Frey and Farley’s study (1994), so I base my study’s measurements for an MSA’s non-lending characteristics on their study. As my primary research question pertains to any discernable changes in the racial composition of MSAs based on increased black homeownership, I borrow theoretical discussions and some variable construction from two related studies that also use HMDA lending data to investigate increased homeownership among minorities and changing segregation patterns.

Studying homebuying in Chicago and Boston, respectively, Immergluck (1998) and Stuart (2000) found that the increase in black homeownership was limited to a few census tracts. Both studies suggest that homeownership increases alone are

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17 Following Farley and Frey’s analysis, I define MSAs with a substantial black population as having either 20,000 or more black residents or in which blacks made up at least 3 percent of the MSA’s population in 2000.
not necessarily the best measure for evaluating the impact of housing policies and lending increases, as the spatial distribution of black and white homebuying has significant consequences on segregation levels and the resulting neighborhood effects.

Immergluck (1998) uses HMDA data for Chicago, IL, to examine the relationship between increased credit to underserved populations, the increased home buying that results, and changes in location of black home buying. In brief, Immergluck looked at changes in the percentage of blacks purchasing homes in neighborhoods of different racial compositions for 1990/1991 and then again in 1995/1996 and found that the location of black home buying has changed over time. Immergluck’s findings show black home buying in Chicago increased in all types of areas but the rate increased fastest in neighborhoods that are predominantly black. For example, the proportion of black homebuying in tracts where 75 or more percent of all buyers were black increased from 27 to 45% between the beginning and middle of the decade. He also found that racially mixed neighborhoods in 1990/1991 moved toward all-black buying in 1995/1996. He concludes that black home buying is occurring in a concentrated manner based on his results that showed only a few tracts experienced large percentages of black home buying, and these are largely racially segregated areas already.

Stuart’s study on Boston, MSA (2000) uncovered similar patterns. He found high levels of suburbanization among minority home buyers (40% of black and 60% of Hispanic homebuyers reside outside the city) but still very low compared to the 90% of white suburbanites. Although his findings show improvements in blacks’
level of residential mobility, he also found that the residential movement was limited to only a few communities in metro-Boston – only 7 of the 126 census tracts showed significant increases in black homeownership.

Although Immergluck’s (1998) and Stuart’s (2000) studies inform my theoretical and empirical discussions on lending, the basis for my model comes from Farley and Frey’s study looking into MSA-level and beginning-to-end of decade changes in the black-white index of dissimilarity. Both Stuart’s and Immergluck’s studies are limited to one MSA, and Immergluck’s study covers just the first half of the decade. As well, both Chicago and Boston are cities with long histories of racial conflict, so their findings might not be representative of the nation as a whole. Although within-MSA investigations importantly contribute to a deeper understanding of segregation changes, explanations for variation among cities with diverse histories and population experiences must develop from a national study. In addition to the time period and geographic limitations, their studies’ designs do not look at how the forms of lending responsible for increased black homeownership differentially affect changes in residential segregation.

My study takes an ecological approach in addressing the relationship between variation in MSAs’ increases in different forms of lending to black homeowners and changes in segregation levels during the 1990s. An analysis that controls for the effects of some of the non-lending factors involved in segregating black and white families is important to determine the independent as well as relative effects of lending. Previous empirical studies of residential segregation use a variety of multivariate approaches, but the most common approach for determining causality is
OLS regression. Therefore, I regress measures for changes in certain forms of lending and measures for MSAs’ nonlending characteristics (i.e. region, changes in the black-white income gap, growth rate differences between blacks and whites and between other minorities and blacks, recent housing construction, total population size, and whites’ exposure to black neighbors) on change in degrees of dissimilarity between 1990 and 2000.

There are multicollinearity problems for some lending measures when included in the same multivariate regression model, affecting which variables I can enter at the same time. Multicollinearity becomes problematic for the following combinations of lending constructs: manufactured housing and traditional lending are very highly and negatively correlated (Pearson correlation = -.9, p<.05); rates of conventional loans significantly overlap with lender type (resulting from conventional loans dominating the home lending market) and entering loan and lender rates concurrently causes the percent of conventional loans to be instantly excluded from the model. These collinearity issues lead to the following modeling strategy. After first presenting regression coefficients for the base model comprised of all nonlending measures (and controlling for them in all models regressing lending variables), I enter each construct for type of lender by itself and the control variables. As described further when discussing the results, the unstandardized regression coefficients for each of these models are presented in one table followed by a table with the standardized coefficients for a more concise presentation.

Following, I detail my use of Census and HMDA data in examining factors suggested by past research to be involved in decreasing MSAs’ degrees of
dissimilarity. I combine measures from HMDA and Census data to depict MSAs ecological and lending characteristics. I derive all lending measures from HMDA data. All non-lending data except those used in racial composition variables are from the 1990 Census’ Summary Tape File 3 (STF3) and the 2000 Census’ Summary File 1 (SF3) found on the Census Bureau’s websites (www.census.gov). Census data on MSAs’ racial composition as well as degrees of racial segregation come from the full-count 1990 Census STF1 and 2000 Census SF1, providing the means for deriving this study’s outcome variable in the form of change in segregation levels between 1990 and 2000.

Variable Description

Index of dissimilarity

Residential segregation can be defined in a variety of ways depending on which measures are used as the dependent variables. Among these, the index of dissimilarity is most widely and reliably used to assess race-based segregation patterns (Massey and Denton, 1988). Levels of dissimilarity range from 0, indicating total integration of black and white families, to 100, meaning complete segregation. In reality, of course, neither extreme ever occurs. Residential segregation is not entirely based on race, but it is also not a completely random phenomenon. The

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18 The 1990 and 2000 Census data reference 1989 and 1999 income figures, respectively.

19 The values for SF3 data originally come from the SF1. Differences arise when comparing the accuracy of SF3 estimates with SF1 figures, because the long form responses in SF1 need to be weighted to reflect the entire population (on a 1:6 household ratio). The weighting areas used in the 2000 Census are large enough to produce “good quality estimates.” Further, the discrepancies between SF1 and SF3 values are only noticeable when looking at small geographic areas (e.g. tracts). When using Census data, I am only interested in looking at MSA level variation, so my findings are unaffected by potentially less than exact numbers provided in SF3 for small areas (http://www.census.gov/Press-Release/www/2002/sf3compnote.html).
index of dissimilarity assesses how evenly two populations are distributed between the geographic components of a larger area (i.e. between census tracts of an MSA). The conceptual meaning of the dissimilarity index is the percentage of people defined as a particular racial group required to move to the other area for both groups to be considered evenly distributed across census tracts.

The dissimilarity index provides a useful benchmark measure of segregation levels, thereby fitting my study within a body of research capable of direct comparison. I subtracted the 1990 degree of dissimilarity between black and white households from 2000’s. Therefore, a positive value for the dependent variable indicates an increase in an MSA’s segregation level, while a negative value suggests integration is taking place.

Lending measures

My review of theories and research on lending suggests that loan distributions from lenders vary substantially by race and across time. For instance, subprime lending makes up a relatively smaller proportion of total lending throughout the decade. But the proportion of loans to black homebuyers that came from subprime lenders increased substantially between the beginning and end of the decade. As well, the relative growth of black compared to white homebuying might allow for larger changes in segregation levels between these households. I account for

\[ \frac{1}{2} \sum (b/B - w/W) \]

across census tract units in the MSA (Massey and Denton, 1988).

As mentioned above, the Mumford Center posts their computations for the 1990 and 2000 indices of dissimilarity for the 331 Census-defined US MSAs, which I incorporate as this study’s dependent variable. Mumford’s calculations compare Non-Hispanic blacks to the reference group, Non-Hispanic Whites.
lending’s differential distribution throughout the decade by constructing three sets of lending measures. I create the following sets of variables to test for lending’s effects on segregation changes during the 1990s: total lending during the decade, absolute changes in lending to black homebuyers, and relative lending changes of blacks compared to whites. I hypothesized that the source and form of the loan may affect lending increase’s impact on changing segregation levels. To test this, I organize loans received by into type of loan and lender. Loans are broken into government-insured (i.e. FHA) and –uninsured (i.e. conventional). Looking at increased lending by comparing these loans might gloss over the differential effects of lenders. As I am also interested in studying how the rise in specialized lenders (compared to traditional lenders) affects segregation levels, after categorizing loans as FHA and conventional, I disaggregate conventional loans by lender (i.e. subprime, manufactured housing, and traditional lenders). Then, I calculate the percents of each type of lending received by the all homebuyers and the percent of blacks’ loans from each loan source during the entire decade. I also calculate the absolute changes in lending to black homebuyers as well as increases in lending to blacks relative to whites between the beginning and end of the decade. Immediately following, I describe each of the three sets of lending constructs more explicitly, and I provide a descriptive list of all measures in Appendix B.

The first set of variables describes lending rates for the entire decade. For each category of loan and lender type, I calculate the number of loans made between 1992 and 1999 and divide this sum by the total number of all loans. The following
example illustrates how I constructed the percentage of all homebuyers’ loans that were conventional during this period:

\[
\]

I perform the above operations on each form of lending and then transform them into percentages by multiplying them by 100. The resulting lending indicators measure the effect on variation in changes in segregation based on the type of loans received by an MSA’s population of homebuyers.  

The second set of lending constructs measures the absolute percent changes in mortgage loans received by black homebuyers between 1992-1994 and 1997-1999. To test for increases in black lending between the beginning and end of the decade, I first calculate the percent of all lending received by black homebuyers from 1992 through 1994 and from 1997 through 1999. I calculate percent change in all loans made to black homebuyers by first subtracting the percent of all loans received by blacks between 1992 and 1994 from the percent made between 1997 and 1999. I divide this figure by the percent of loans made in the beginning period (i.e. 1992-1994) and multiply it by 100 to transform the result into a measurement of percent change. The following formula illustrates the procedures used to measure percent change in lending to black homebuyers:

\[
\]

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\[22\] I also constructed measures for the percent of black lending from each loan type/source. None of the regression coefficients suggested effects different from those for the total population of homebuyers, so I have not included their results in any results tables.
I conduct these operations for each type of lending, so that I can measure the effect on segregation of increases in black homeownership due to FHA and conventional loans and from subprime, manufactured housing, and traditional lenders.

The third set of lending indicators measure relative growth of lending to blacks compared to growth in white lending between the same time periods. In addition to absolute increases in black lending, shrinking the lending gap between black and white homebuyers increases neighborhood options and thus the potential for racial integration. To test this, I create variables assessing changes in the percent of lending growth to black versus white homebuyers between the beginning and end of the decade. Similar to standard variable construction for measuring changes in the general socioeconomic status of blacks relative to whites, I first create ratios of black-to-white lending amounts for the first (1992-1994) and second (1997-1999) time periods and then subtracted the first ratio from the second for each MSA. The following formula illustrates how I compute relative lending to blacks compared to whites for all lending and by type of lending:


This provides me with an indicator for assessing how increased lending to black families, over time moving closer and closer to parity with white families, can help bring about the free market envisioned by many classical economic theorists.

To measure the net impact of lending on changes in segregation, I control for the effects of MSAs’ economic, regional, housing and population characteristics.
Nonlending measures

Testing classical economic theories, I create a variable to assess the proportionate increase in blacks’ average household incomes as a percent of whites’ over the decade. While tables describing the 1999 median household incomes by race are readily available from the Census Bureau, 1989 median figures are broken down into households’ income categories by race. Therefore, I derive estimates for black and white households’ 1989 incomes using Pareto estimates. While it would be nice if 1989 median incomes by race were reported in a format similar to 1999’s reports, the formulas used provide solid estimates. This gives me confidence that

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23 I obtained the 1989 estimates of median household income by race from STF-3’s Table P082, “Race of householder by household income in 1989” and the 1999 estimates from SF-3’s Tables P152A and P152B, “Household income in 1999.” The Census Bureau asks a series of questions on specific sources of income (e.g. wages from a job, public assistance, unemployment) in order to ensure a more accurate reporting of a respondent’s entire annual income.

24 “The standard formulas for calculating a median (shown in Figure 1 below) require values for two parameters - k and theta e. These parameters can be derived using the formula for the area under a Pareto curve shown in Figures 2 and 3, where:

- a = income value at the lower limit of the category containing the median
- b = income value at the upper limit of the category containing the median
- Pa = proportion of the distribution that lies below the lower limit
- Pb = proportion of the distribution that lies below the upper limit

Through basic algebraic transformation, we use these known values to solve for k and theta as shown in Figures 4 and 5. The median can then be calculated by inserting the values of k and theta into the formula in Figure 1.

Figure 1: Median

\[ \text{Median} = k \left(\frac{2}{1 + \theta}\right) \]

Figure 2: Proportion below lower limit

\[ P_a = 1 - \left(\frac{k}{a}\right) \theta \]

Figure 3: Proportion below upper limit

\[ P_b = 1 - \left(\frac{k}{b}\right) \theta \]

Figure 4: Solving for k

\[ K^\theta = \left[\frac{1}{a^\theta} - 1/b^\theta\right] = P_b - P_a \]

\[ K = \left[\frac{P_b - P_a}{(1/a^\theta - 1/b^\theta)}\right]^{1/\theta} \]

Figure 5: Solving for theta

\[ \left(\frac{b}{a}\right)^\theta = 1 - P_b / P_a \]

\[ \theta = \log \left(\frac{1 - P_a}{1 - P_b} / \log(b/a)\right) = \left[\log(1 - P_a) - \log(1 - P_b)\right] / \log(b) - \log(a) \]

(Mumford Center website)

25 The formulas used to estimate medians appear to be accurate. The medians for the 331 MSAs were computed using the Pareto formulas for 2000 and then compared them with the reported medians. The correlations range between .997 and .9999. For whites, the biggest error is $617 with a
the indicator for change in socioeconomic status between black and white households (i.e. the difference in the black-to-white income ratio between 1990 and 2000) is reliable.

An MSA’s regional location provides the context within which other MSA traits can impact segregation. Data from HMDA identifies each loan’s state of origin. I test for regional differences in segregation changes using dichotomous indicators for the Northeast, Midwest, West, and South. The reference category consists of states in the South\[26\]

The relative increase in the amount of housing available varies across MSAs, allowing some areas of the U.S. greater capacity for altering the race-based urban landscape. Housing characteristics include indicators for the age and type of housing units in an MSA. I use a series of variables from the 2000 Census Table H34 – “Year Housing Built” that indicate the number of housing units built during certain time periods (e.g. before 1940, between 1940 and 1960, etc.). The original question asks, “About when was this building first built?” I operationalize the amount of recently

\[+/- 1\% \text{ margin of error. For blacks, errors are larger. The biggest error is }$3,920 \text{ which is an } 11\% \text{ margin of error. Black errors go down substantially when the sample is limited to MSAs of 1,000 or more blacks and down even farther when limited to MSAs with black populations of 5,000 or more. The biggest error then is less than$600 \text{ with a margin of error of about } 2\%. Because I am following the precedent set by previous studies on residential segregation in limiting my analysis to MSAs with at least 20,000 blacks or a black population that makes up at least 3\% of the total MSA population, the areas with the largest errors associated with income and race are not included in my study’s sample.} \]

\[26\] The Census Bureau established the groupings of states into regions as follows: the Northeast region includes Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New Jersey, New York, and Pennsylvania; the Midwest region includes North Dakota, South Dakota, Nebraska, Kansas, Missouri, Iowa, Minnesota, Wisconsin, Illinois, Michigan, Indiana, and Ohio; the West region includes Washington, Idaho, Montana, Wyoming, Oregon, California, Nevada, Utah, Colorado, Arizona, New Mexico, Alaska, and Hawaii; the South region includes Maryland, Delaware, West Virginia, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas.
available housing stock as housing units built during the past decade as a percentage of the entire available housing in that MSA in 1990.

The size and growth rates of an MSA’s population and subpopulations are also potential indicators of changes in race-based residential segregation. Per Farley and Frey’s study (1994), I logarithmically transformed the total population living in the MSA at the beginning of the decade (1990, in this case) to measure its size. I construct two variables to control for the effect of relative growth rates of racial groups27. The first growth rate indicator controls for the difference between the average annual growth rates of MSAs’ black and white populations28. The measure for the difference in black-white growth rates indicates positive growth if the black population grew at a faster rate than the white population and negative growth if the reverse. The second growth rate indicator controls for the difference between the average annual growth rate of MSAs’ black and other racial minorities populations29. This measure indicates a positive change if the combined populations of other racial groups grew at a faster annual rate than blacks over the ten year period.

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27 I obtained figures for the MSAs’ populations from the 1990 and 2000 Census tables for “Total Population” (STF-1’s and SF-1’s Tables P1) and by race (STF-1’s and SF-1’s Tables P7 “Race”) and Hispanic origin (STF-1’s and SF-1’s Tables P8 “Hispanic or Latino, and Not Hispanic or Latino by Race”).

28 To measure the change in the difference in annual growth rates between blacks and whites between 1990 and 2000, I first computed the black population’s annual growth rate by subtracting the size of the non-Hispanic black population in 1990 from that recorded in 2000. Then, I divided that figure by the 1990 size, and divided that figure by the number of years between time periods (i.e. 10 years). I performed the same operations using the numbers for non-Hispanic whites to obtain the annual growth rate of the white population. I then subtracted the rate I derived for white population growth from that for black population growth. The original variable is based on self-classification according to the race(s) with which the individual most closely identifies.

29 Using similar operations to those described for the difference in black-white growth rates, I create the difference between black and other minority populations’ growth rates by subtracting the average annual growth rate for the black population from the average annual growth rate for the combined non-black and non-white racial populations (e.g. Hispanic and Asian-Americans).
As an indicator of neighborhood preferences, and again following Farley and Frey’s earlier work (1994), I control for effect of white-black exposure on segregation changes. The exposure index measures the degree of *potential* not actual interaction between members of two groups, but implications about the latter are often made from the findings (Massey and Denton, 1988). The degree of whites’ exposure to blacks in 1990 allows me to control for the effects of whites’ potential contact with black neighbors at the beginning of the decade on segregation changes occurring by the end of the decade. If an MSA’s white residents prefer more integrated neighborhoods, higher levels of whites’ exposure to black neighbors at the beginning of the decade would bring about larger decreases in segregation levels by decade’s end.

30 In my study, I assume that:

- \( b_i \) = black population of the \( i^{th} \) census tract
- \( B \) = total black population of the MSA
- \( w_i \) = white population of the \( i^{th} \) census tract
- \( W \) = total white population of the MSA.

The exposure index of segregation can be measured as \( \text{SUM}(w_i/W) \times (b_i/t_i) \) for all census tract units in the MSA where \( t_i \) = the total population of the \( i^{th} \) census tracts (Farley, 1977).
RESULTS

For a preliminary look at the MSAs in my sample, I first describe the nonlending characteristics followed by each set of lending measures (as defined in the previous chapter). Then, I present tables for their multivariate regression coefficients in discussing their impact on changing segregation levels as shown from multivariate regression models.

Descriptive Statistics

Unless otherwise indicated, the descriptive figures for nonlending characteristics discussed are presented in Table 1. The national figures as measured by the dissimilarity index show small but significant decreases in whites’ segregation from blacks. From 1970 to 2000, the segregation index fell from almost 80% to 70% (in 1990) and then 65% (Harrison, 2001). Between the beginning and end of the 1990s, MSAs in my sample experienced an overall decline of 3.7 points in the average degree of segregation between black and white households. In 1990, 60.2% of blacks in the average MSA would need to move to another census tract for the distribution of white and black households to be even. In 2000, the percent of blacks that would need to move fell to 56.5% (not shown).
Between 1990 and 2000, the average MSA’s total population rose from an average of 759,200 to 861,305 people (not shown). The non-black minority population grew the fastest at an annual average rate of 9.6% compared to blacks’ 3.1% and whites’ .3% per year (not shown), so relative to each other, the black population grew 3 times faster than whites. The population of non-black minorities grew more than 6 times as fast as the black population. The average MSA’s relative household income for blacks rose 2% higher than for whites, meaning the average black household’s income improved slightly compared to the average white household’s during the 1990s. Twenty-two percent of the average MSA’s housing was built during the 1990s. And, in 1990, white residents in the average MSA lived in areas where 7% of their neighbors were black. I include the characteristics of MSAs described above in each of my multivariate models to isolate lending’s effects on segregation changes.
The following set of descriptive statistics give an overview of lending during the 1990s according to the different loan and lender types (and before being aggregated into MSA-level records). Table 1 provides these descriptive statistics.

TABLE 2

HOME MORTGAGE LENDERS AND LOANS BY RACE, 1992 THROUGH 1999

<table>
<thead>
<tr>
<th>Type of Lenders</th>
<th>All Homeowners (% of all loans)</th>
<th>Black Homeowners (% of all black loans)</th>
<th>White Homeowners (% of all white loans)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subprime</td>
<td>577,583 (2.9%)</td>
<td>84,384 (5.8%)</td>
<td>371,163 (2.4%)</td>
</tr>
<tr>
<td>Manuf. Housing</td>
<td>664,165 (3.4%)</td>
<td>51,159 (3.5%)</td>
<td>547,525 (3.5%)</td>
</tr>
<tr>
<td>Traditional</td>
<td>18,464,284 (93.7%)</td>
<td>1,313,686 (90.6%)</td>
<td>14,546,181 (94.1%)</td>
</tr>
<tr>
<td>Total</td>
<td>19,706,032 (100%)</td>
<td>1,449,229 (99.9%)</td>
<td>15,464,869 (100%)</td>
</tr>
<tr>
<td>Type of Loans</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conventional</td>
<td>14,662,255 (74.4%)</td>
<td>714,510 (49.3%)</td>
<td>12,051,170 (77.9%)</td>
</tr>
<tr>
<td>FHA</td>
<td>3,821,470 (19.4%)</td>
<td>560,315 (38.7%)</td>
<td>2,509,527 (16.2%)</td>
</tr>
<tr>
<td>VA/FmHa</td>
<td>1,222,306 (6.2%)</td>
<td>174,386 (12.0%)</td>
<td>904,171 (5.9%)</td>
</tr>
<tr>
<td>Total</td>
<td>19,706,031 (100%)</td>
<td>1,449,211 (100%)</td>
<td>15,464,868 (99.9%)</td>
</tr>
</tbody>
</table>

Note: Figures in this table are based on individual loans from the 1992 through 1999 HMDA records (before being aggregated into MSA-level data). They reflect the breakdown of each type of lending received by the total, black, and white population of homebuyers.

My study’s figures support the national statistics on overall and black lending over the decade. Most loans in my sample are conventional (74%), followed by FHA (19%), VA and FmHa (6%), so the government does not insure most home mortgage loans. Looking at how much lending to black and white homeowners is from conventional loans shows significant disparities. While half of all loans to black homeowners are conventional (49%), conventional loans make up a far greater
proportion of all loans received by whites (78%). FHA loans make up 39% of blacks’ loans and only 16% of whites’ loans. Traditional lenders make the vast majority of all loans (94%). During the 1990s, subprime lenders provided 5.8% of blacks’ loans compared to 2.4% of whites’ loans, illustrating subprime lender’s relative prominence in lending to blacks compared to whites. Between the beginning and end of the 1990s, subprime lending’s rapid expansion played a critical role in increasing black homeownership levels. The proportion of black loans from subprime lenders was 6 times what it was in 1992 (from 1992’s 1.9% to 1999’s 12%, not shown). So, while subprime lending comprises a relatively small proportion of all loans to black homebuyers, changes in black homeownership between the beginning and end of the decade had much to do with increases in subprime lending activity during the decade. As the rate of black loans from specialized lenders increased over the decade, the proportion from traditional lenders decreased significantly. These initial statistics provide an illustration of the race-based breakdown of home mortgage lending during the 1990s.

Following, I discuss lending changes. For these measures, the individual-level data described above were aggregated into MSA descriptors. Thus, the lending changes described below are for the average MSA in my aggregated sample. Table 2 shows descriptive statistics on lending received by black homebuyers between 1992/1994 and 1997/1999. Black homebuyers’ loan shares in the average MSA increased by 21% between the beginning and end of the decade. Changes in black homebuyers’ loan shares range from –28.2 in Terre Haute, IN to 115.2 in Bryan-College Station, TX. As was mentioned in discussing individual loan records over
the decade, the largest increases in black homeownership occurred through conventional loans from subprime lenders (923%), while the percent of conventional loans from traditional lenders actually declined (-6%). Thus, subprime lending accounted for more and more of the increase in black homeownership as the 1990s progressed.

TABLE 3

AVERAGE CHANGES IN LENDING

<table>
<thead>
<tr>
<th>Types of Lending</th>
<th>Average changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Loans</td>
<td>20.7</td>
</tr>
<tr>
<td>Conventional</td>
<td>28.4</td>
</tr>
<tr>
<td>FHA</td>
<td>52.2</td>
</tr>
<tr>
<td>Conventional Subprime</td>
<td>922.7</td>
</tr>
<tr>
<td>Conventional MH</td>
<td>294.6</td>
</tr>
<tr>
<td>Conventional Traditional</td>
<td>-5.9</td>
</tr>
</tbody>
</table>

Table 4 shows the descriptive statistics for changes in lending to black homebuyers compared to those for white homebuyers. The average MSA experienced a 1.9% additional increase in overall lending received by blacks compared to whites’ lending growth. Homeownership rates through conventional traditional lending increased only .2% more for blacks than whites. Meanwhile, conventional subprime lending contributed to black homeownership growing 11 percentage points faster than did white homeownership. Tables 1 through 4 clearly show that the 1990s experienced significant increases in black homeownership on its own and compared to whites’. In addition, the growth of new lenders in the housing industry contributed more significantly to black homeownership increases than to
whites. After briefly reporting descriptive statistics for nonlending characteristics used as controls variables, I present multivariate regression coefficients detailing lending’s effects on segregation.

**TABLE 4**


<table>
<thead>
<tr>
<th>Types of Lending</th>
<th>Average changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Loans</td>
<td>1.9</td>
</tr>
<tr>
<td>Conventional</td>
<td>1.5</td>
</tr>
<tr>
<td>FHA</td>
<td>5.2</td>
</tr>
<tr>
<td>Conventional Subprime</td>
<td>10.8</td>
</tr>
<tr>
<td>Conventional MH</td>
<td>2.3</td>
</tr>
<tr>
<td>Conventional Traditional</td>
<td>0.2</td>
</tr>
</tbody>
</table>

**Multivariate Findings**

As I am interested in understanding the effects of MSAs’ characteristics on changed segregation levels, the dependent variable in all multivariate regressions is the difference in the index of dissimilarity between 1990 and 2000. Again, a negative value for the change in the dissimilarity index indicates a decreased segregation level. In general, although many of the variables in my base model affect segregation similarly to those described by Farley and Frey (1994), some differences in statistical significance arise that I attribute to their looking at segregation changes experienced during the 1980s whereas I am looking at the 1990s.

All regression results can be found in Tables 5 through 7. I include the

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31 Also, as mentioned in the first chapter, I do not include some of the variables used in Farley and Frey’s model (i.e. age or functional specialization of MSAs) due to data limitations (1994).
nonlending (control) variables in all regressions but only show their unstandardized coefficients in Table 5, as the effects of nonlending characteristics change very little when lending measures are introduced. Table 6 shows unstandardized regression coefficients for the effects of all lending measures. In discussing Table 6, I refer to panel A, B, or C for proportion of all lending, absolute changes in lending to black homeowners, or changes in black compared to white lending rates, respectively. Although I derive the standardized coefficients from each of their separate regressions, I believe presenting them in one table allows for a more straightforward discussion of lending’s impact in relation to other MSA characteristics. I regress each lending measure against segregation changes in separate models, and Table 7 presents the coefficients for all statistically significant variables in a single column rather than spread across multiple columns. This eases the comparisons of the relative impacts of lending and nonlending variables on segregation changes.

Some potential limitations arise from this analytic plan. My lending variables are calculated according to an MSA’s percent or percent change in loan type. While these constructs help sufficiently address the impact on segregation of lending levels of various types, I am not evaluating the potential impact of an MSA’s composition of loans. In other words, perhaps the loan mix (e.g. a ratio of conventional to subprime loans) rather than the loan type (e.g. percent or percent change in one loan characteristic) matters in changing segregation levels. It must be remembered that I am making inferences based on the breakdown of loan types.

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32 Lending measures are entered into separate models, because some of them are too highly correlated to include in one model. For example, the constructs for regular and manufactured lending have a very high and statistically significant Pearson correlation. When entered into the same multivariate regression model, multicollinearity becomes problematic.
The first model, in which only the control variables are regressed against changes in the dissimilarity index, is shown in Table 5 below. As expected, regional location continues to exert an influence on segregation changes during the 1990s. Compared to those in the South, MSAs in the Northeast became less integrated by 1.89 degrees of dissimilarity (p<.01) between 1990 and 2000. When looking at the base model, none of the other regions’ segregation scores differed significantly from the South’s. Along with northeastern MSAs, the Midwest MSAs became significantly less integrated than MSAs in the South during the 1980s. In my sample, MSAs in the Midwest show the greatest average declines in segregation compared to other regions (-4.7%), which may help explain the difference in relative regional effects in my base model compared to Farley and Frey’s (1998). The historical processes involved in creating segregated residential communities in the northeastern MSAs left a legacy of hostility toward blacks that may still be actively present. As well, court orders against discriminatory housing practices in the Northeast often only extend to specific suburbs, so litigation packs less punch in these MSAs than those in the South or West with fewer suburban constraints.

Interestingly, there are significant regional differences in lending characteristics. Although black homeownership grew in all regions, only in the Northeast did the average MSA experience greater homeownership increases for whites than for blacks. Compared to whites’, blacks’ shares of lending showed improvements from only subprime lenders. For all other forms of lending, black homeownership declined compared to whites in the Northeast. Changes in absolute (rather than relative) levels of black lending appear consistent across regions. In each
region, black homeownership increased through every type of lending except conventional loans from traditional lenders. Across the nation, while shares of specialized lending to black borrowers and minority neighborhoods rose and rose, traditional lenders withdrew.

### TABLE 5

**UNSTANDARDIZED MULTIVARIATE REGRESSION COEFFICIENTS FOR THE EFFECTS OF MSAS’ NONLENDING CHARACTERISTICS ON SEGREGATION CHANGES DURING THE 1990s**

<table>
<thead>
<tr>
<th></th>
<th>( b )</th>
<th>( t )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-5.72</td>
<td>-2.31</td>
</tr>
<tr>
<td>Black-White income ratio</td>
<td>-0.03</td>
<td>-1.07</td>
</tr>
<tr>
<td><strong>Region</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>2.13*</td>
<td>2.81</td>
</tr>
<tr>
<td>Midwest</td>
<td>.43</td>
<td>.67</td>
</tr>
<tr>
<td>West</td>
<td>1.14</td>
<td>1.85</td>
</tr>
<tr>
<td>Recent hsg construction</td>
<td>-.01</td>
<td>-.60</td>
</tr>
<tr>
<td>MSA pop. (logged), 1990</td>
<td>-.11</td>
<td>-.26</td>
</tr>
<tr>
<td>Black-White growth</td>
<td>.22*</td>
<td>2.72</td>
</tr>
<tr>
<td>Other-Black growth</td>
<td>-.03</td>
<td>-1.05</td>
</tr>
<tr>
<td>White-Black exp. index, 1990</td>
<td>.31**</td>
<td>6.75</td>
</tr>
<tr>
<td>( \text{Adjusted } R^2 )</td>
<td>.23</td>
<td></td>
</tr>
<tr>
<td>( N = 237 )</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** p<.01 * p<.05 (two-tailed tests)

The proportionate increase in new housing (i.e. housing built during the 1990s as a percent of housing in the 1990s) was not significant in explaining the variation among MSAs’ segregation score changes. As mentioned above, MSAs in the Northeast have the almost half the proportion of recently built housing as southern
MSAs. Perhaps, the effect of having more recently built housing may already be covered by the regional variations.

An MSA’s total population size does not significantly explain segregation changes, but the black population growth rate in relation to the white population’s is statistically significant. As expected, faster growing black populations compared to whites significantly changes segregation levels. Net of other factors, for each percent increase in an MSA’s black population growth compared to that of the white population, the black-white degree of dissimilarity increases by .2 percentage points (p<.01). This negates the theory that areas with higher relative growths in the black populations would be integrating (at least temporarily) as racial transition began. That higher black-to-white growth slightly increases segregation suggests that the threat of a larger black population can prevent integration from occurring. Even when surveys show an increase in whites’ positive attitudes toward integration, perhaps real world increases in black neighbors continue to make whites uncomfortable.

When other factors are taken into account in the base model, relative improvements in black compared to white households’ incomes lack statistical significance, though the direction of the coefficient is in the expected negative direction.

White exposure to black neighbors at the beginning of the decade significantly increases changes in residential segregation scores over the course of the decade. Bivariate results suggest a strong association between higher exposure and less segregation change segregation between whites and blacks. The higher the
percentage of blacks to which whites were exposed in 1990, the lower the decrease in segregation by 2000. The multivariate analysis supports the bivariate findings of a connection between higher exposure and mitigated decreases in segregation. Net of other MSA characteristics, a higher exposure index of one percentage point increased levels of dissimilarity by .3% (p<.01). If exposure of whites to blacks were small in 1990, white racial attitudes might show less reluctance toward a few more black neighbors because the neighborhood remains predominantly white. A higher proportion of black neighbors in 1990 might make whites more hostile toward the idea of a growing black population in the neighborhood, because whites might fear “their” neighborhoods are being “taken over” by blacks. The exposure index of whites to blacks only implicitly measures white racial attitudes, but it suggests that whites’ intolerance toward higher proportions of black neighbors strongly supports the persistence of segregation.

Now that I have discussed the impact of MSAs’ ecological contexts, I provide an overview of lending’s effect on segregation changes followed by a more detailed description of the results. Interestingly, when loan characteristics are added to the base model, none of the effects of nonlending variables on segregation notably change. In other words, measures of an MSA’s lending exert very little impact on its nonlending characteristics. Perhaps this lack of effect on the base model results from lending’s small relative impact on segregation compared to significant nonlending variables. As I discuss in more detail below, even the lending constructs of statistical significance are less powerful overall in changing segregation levels than the nonlending characteristics.
As hypothesized, changes in lending to black homebuyers during the 1990s were statistically significant in altering segregated residential patterns between black and white households. In general, increased black homeownership does help decrease their segregation from white homeowners. Percent increases in all loans (all types of loans and lenders pooled together) and, specifically, in traditional lending to black homebuyers between the beginning and end of the decade help decrease black-white residential segregation. As well, where increases in conventional loans to black homebuyers exceeded those for white homebuyers, MSAs experienced greater declines in segregated housing. No other lending measures contributed to changes in segregation levels. Increases in homeownership through FHA loans and specialized lenders do not significantly aid integration.

As will be discussed in the following passages and more fully in the discussion chapter, these results also substantiate my arguments that simply increasing lending to previously underserved populations will not necessarily end segregation. Along with the influences of other factors, the kinds of lending involved in increasing black homeownership also play roles in determining how much change in segregation occurs. In other words, differential patterns of lending to black and white homebuyers influence the spatial patterns of their homes. Following, I discuss segregation changes based on the proportions of lending during the entire decade, the absolute changes in black lending, and the changes in lending to black compared to white homebuyers.

Panel A in Table 6 show the unstandardized regression coefficients of each type of lending’s proportion of all lending during the decade after controlling for the
effects of MSAs’ nonlending characteristics. From these results, it appears that where lending for manufactured homes comprises a larger portion of an MSA’s total lending the degree of black-white segregation rose higher between 1990 and 2000. For each additional percentage of loans from manufactured housing, an MSA’s segregation index rises .13 points (b=.13, p<.01). On the other hand, each additional percentage of total lending from traditional lenders decreases segregation levels by .11 degrees (p<.05). Meanwhile, higher proportions of subprime lending do not affect segregation levels between black and white households. This suggests that traditional lending encourages integration, lending for manufactured homes inhibits integration, and subprime lending does little to change segregation levels between black and white households.

Manufactured housing lending results in a certain type of home purchase – a manufactured home – that often has limited residential areas in which to be placed. Although almost half of manufactured homes are now installed on land owned by the homeowner, many municipalities across the nation put zoning restrictions on where manufactured homes can be located. That this type of lending leads to a manufactured home purchase results in distribution of these homes in a limited number of neighborhoods. I further discuss manufactured homes and this type of lending’s effect on race-based residential segregation in the following chapter.
TABLE 6

UNSTANDARDIZED MULTIVARIATE REGRESSION COEFFICIENTS FOR
THE EFFECTS OF MSAS’ LENDING CHARACTERISTICS ON
SEGREGATION CHANGES DURING THE 1990s

<table>
<thead>
<tr>
<th></th>
<th>b</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Lending to All Homebuyers, 1992 through 1999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conventional</td>
<td>.020</td>
<td>1.087</td>
</tr>
<tr>
<td>FHA</td>
<td>-.031</td>
<td>-1.287</td>
</tr>
<tr>
<td>Subprime</td>
<td>-.171</td>
<td>-1.236</td>
</tr>
<tr>
<td>Manufactured Hsg</td>
<td>.127**</td>
<td>2.510</td>
</tr>
<tr>
<td>Traditional</td>
<td>-.106*</td>
<td>-2.066</td>
</tr>
<tr>
<td>Conventional Subprime</td>
<td>-.278</td>
<td>-1.608</td>
</tr>
<tr>
<td>Conventional MH</td>
<td>.129**</td>
<td>2.494</td>
</tr>
<tr>
<td>Conventional Traditional</td>
<td>.008</td>
<td>.423</td>
</tr>
<tr>
<td>B. Absolute changes in lending, 92/94 to 97/99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All loans</td>
<td>-.019*</td>
<td>-2.176</td>
</tr>
<tr>
<td>Conventional</td>
<td>-.008</td>
<td>-1.487</td>
</tr>
<tr>
<td>FHA</td>
<td>-.002</td>
<td>-.748</td>
</tr>
<tr>
<td>Subprime</td>
<td>.000</td>
<td>.320</td>
</tr>
<tr>
<td>Manufactured Hsg</td>
<td>.000</td>
<td>.662</td>
</tr>
<tr>
<td>Traditional</td>
<td>-.026**</td>
<td>-2.651</td>
</tr>
<tr>
<td>Conventional Subprime</td>
<td>.000</td>
<td>.656</td>
</tr>
<tr>
<td>Conventional MH</td>
<td>.000</td>
<td>.075</td>
</tr>
<tr>
<td>Conventional Traditional</td>
<td>-.012</td>
<td>-1.700</td>
</tr>
<tr>
<td>C. Relative changes in lending, 92/94 to 97/99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All loans</td>
<td>-.121</td>
<td>-1.388</td>
</tr>
<tr>
<td>Conventional</td>
<td>-.205*</td>
<td>-2.191</td>
</tr>
<tr>
<td>FHA</td>
<td>.007</td>
<td>.606</td>
</tr>
<tr>
<td>Subprime</td>
<td>.001</td>
<td>.153</td>
</tr>
<tr>
<td>Manufactured Hsg</td>
<td>-.019</td>
<td>-.922</td>
</tr>
<tr>
<td>Traditional</td>
<td>-.073</td>
<td>-.749</td>
</tr>
<tr>
<td>Conventional Subprime</td>
<td>.001</td>
<td>.154</td>
</tr>
<tr>
<td>Conventional MH</td>
<td>-.020</td>
<td>-.987</td>
</tr>
<tr>
<td>Conventional Traditional</td>
<td>-.197</td>
<td>-1.567</td>
</tr>
</tbody>
</table>

Neither higher proportions of government-insured (i.e. FHA) loans nor uninsured (i.e. conventional) loans has an impact on changed segregation levels among MSAs. The first set of results on the proportion each type of lending comprises of total loans received throughout the decade provides moderate support to my hypotheses. Segregation levels are differentially impacted depending on loans’ sources. However, the form of lending (be it conventional or FHA) does not seem to help explain variation among MSAs’ changes in segregation during the 1990s. This tells us a little about how the composition of lending throughout the decade affects segregation; now, I discuss results on changes in black homeownership based on the different sources and forms of home mortgages.

In general, increased lending to black homebuyers between the beginning and end of the 1990s helps explain decreased segregation levels. Table 6’s panel B presents results for increases in lending to black homebuyers and shows that, the effect of increases in black homeownership from all loans (pooled together) is significant in explaining variation among MSAs’ decreased segregation levels. Net of other MSA characteristics, greater increases in black lending shares lead to more substantial integration between black and white households. A one percent increase in loan shares to black homebuyers decreased segregation by .02 percentage points (p<.05). This suggests that when blacks’ homebuying power increases, blacks are able to move into areas that were previously predominantly white. Contrasting Immergluck’s (1998) and Stuart’s (1998) conclusions, I find that improving black homeownership levels does lead to decreasing segregation between black and white households.
As expected, increases in black homeownership through traditional lenders were more effective than those from specialized lenders in decreasing black/white segregation levels. A one percent increase in traditional lending to black homebuyers decreases black/white residential segregation by .03 degrees (b=-.03, p<.01). This supports the theoretical arguments discussed in earlier chapters stating that increased lending to blacks, especially when from traditional lenders, helps increase blacks’ neighborhood options when choosing a home.

While neither the proportion of subprime lending nor the change in subprime lending to blacks have statistically significant impacts on changing segregation levels, that the former has an unexpectedly negative coefficient is worth noting. The negative coefficient for subprime lending in Table 6’s panel A suggests that when loans from these lenders comprise a large proportion of all loans in an MSA, segregation levels decrease (b=-.17). The statistical insignificance may result from subprime lending’s not being a relatively large component of all lending during the 1990s. The descriptive statistics discussed in the previous section show that subprime lending made up only 2.9% of all loans and 5.8% of lending to black homebuyers (see Table 1). Meanwhile, in panel B of Table 6, the positive coefficient for changes in subprime lending is more in line with what I have argued, that loans from subprime lenders do not help black households become integrated with white households (b=.00). Subprime lending’s rapid expansion significantly contributed to black homeownership increases. Especially between the middle and end of the 1990s, subprime lending heavily drove increases in black homeownership. Subprime lending’s small proportion of all lending yet relatively large proportion of lending
changes to black homebuyers yields some explanation for the coefficients’ signs and statistical insignificances. While these results do not provide a definitive answer regarding subprime lending’s impact on changing segregation levels, that increased black homeownership through traditional and not subprime lending has a significant and beneficial impact on integration supports my hypothesis on differential effects based on loan sources.

I am also investigating how the growth in black homeownership in relation to white homeownership increases affects segregation levels, and I now present result from evaluating the black/white relative lending measures. Panel C of Table 6 shows regression results for blacks’ compared to whites’ lending increases. Supporting the hypothesis that lending’s impact on racial composition varies based on the type of loan used to purchase a home is the finding that where conventional loan shares to blacks increased relative to whites, segregation levels declined. For every additional percent increase in conventional loans received by black compared to white homebuyers, the segregation index decreased by .2 points (p<.05). Although, in general, greater increases in black compared to white homeownership do not seem to help integration, as expected, net of other factors, shrinking the black-white lending gap through conventional loans does help decrease segregation levels. Increased lending in the form of government-backed loans, on the other hand, does not help integrate MSAs. The net effect of percentage increases in FHA lending to blacks does not significantly explain intrametropolitan decreases in dissimilarity between black and white households. This finding lends some support to the idea that only by
increasing certain loans to blacks to the point of parity with whites will increased black homeownership lead to integrated neighborhoods.

Summary

Other studies have shown that recent increases in home mortgage lending to blacks notably affect the shrinking gap between blacks’ and whites’ homeownership rates. Few studies have looked at how mortgage lending affects residential segregation. Those studies that have analyzed residential segregation as a correlate of lending in the housing market were looking specifically at one city and did not take into account the possibility that different types of lending could detract from increased lending’s positive impact on integrating neighborhoods. While showing how increased lending has led to record levels of black home buying, explaining MSA variation in the spatial distribution of home purchase increases is important in assessing the home mortgage industry’s impact on neighborhoods.

So, what part have increases in black homeownership played in decreasing segregation between black and white households? My findings support increasing lending to blacks as a necessary factor in eliminating race-based segregated residential communities. As hypothesized, where black homebuying has increased, segregation between black and white households has decreased. It seems that black homebuyers are using improvements in their lending status to purchase homes in neighborhoods that were once unavailable to them.

Is all lending – regardless of the type or source of loan – beneficial in expanding blacks homebuyers’ neighborhood options? My second and third
hypotheses address the potentially differential effects of lending’s various forms on segregation changes during the 1990s. My results provide evidence that increases in some lending leads to significant declines in segregated living, while other forms of lending increase black homeownership without integrating households. When disaggregated by loan type and source, only absolute increases in traditional lending to blacks and relative increases in conventional loans to blacks (compared to whites) significantly help decrease segregation. FHA loans and specialized lending are geographically concentrated in predominantly minority neighborhoods. Traditional lenders and conventional loans afford better loan terms and conditions than specialized lenders and FHA loans. I believe these results suggest that a wider distribution of loan services based solely on qualifications rather than race of the borrower or neighborhood would contribute more positively to segregation declines in US cities.

The analysis discussed above shows that increasing black homeownership levels does help integrate neighborhoods. The final question, then, is how important is lending compared to other factors in contributing to segregation decreasing between black and white households? Table 7 presents the standardized coefficients for each statistically significant variable based on the same series of regression models described above, in which each lending measure was separately added to the base model of control variables.

As shown in Table 7, lending has the smallest effect on changing segregation compared to most of the other statistically significant characteristics included in the multivariate regressions. No matter what type of lending, its impact is consistently
smaller than that of all other statistically significant nonlending characteristics. The coefficients’ directions suggest that other significant factors impede changes toward integration, while at least some forms of lending encourage it. Location in the Northeast compared to the South, faster growing black compared to white populations, and a higher degree of white exposure to black neighbors inhibits the integration process.

TABLE 7
STANDARDIZED MULTIVARIATE REGRESSION COEFFICIENTS
FOR MSAS’ CHARACTERISTICS THAT HAVE STATISTICALLY SIGNIFICANT IMPACTS ON SEGREGATION CHANGES

<table>
<thead>
<tr>
<th>Nonlending Characteristics</th>
<th>Std B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Region</strong></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>0.225</td>
</tr>
<tr>
<td>Black-White growth, 1990-2000</td>
<td>0.186</td>
</tr>
<tr>
<td>White-Black exposure index, 1990</td>
<td>0.501</td>
</tr>
</tbody>
</table>

**Lending Characteristics**

*Lending to All Homebuyers (1992 through 1999)*

| Manufactured Housing      | 0.209  |
| Traditional              | -0.168 |
| Conventional MH          | 0.209  |

*Absolute Changes in Lending to Black Homebuyers (92/94 to 97/99)*

| All loans | -0.133 |
| Traditional | -0.158 |

*Relative Changes in Lending to Black Homebuyers (92/94 to 97/99)*

| Conventional loans | -0.097 |
Regardless of its relatively small impact, the fact that lending significantly decreases segregation provides evidence that increasing black lending can alter the racial landscape of neighborhoods. Further, the lack of significance attributed to black homeownership increases from certain forms of lending also supports the argument that lending’s influence in decreasing segregation weakens when increases in black homeownership occur through differentially dispersed loans.

Although increasing black homeownership expands their neighborhood options, the lending markets through which the majority of increases in black homeownership have occurred (i.e. from subprime lenders and FHA loans) are those results that have no significant impact on changing segregation levels. As I discuss further in the final chapter of this dissertation, these results suggest that the disproportionate servicing of certain loans in lower-income and minority neighborhoods and populations diminishes the potential impact of increased black homeownership leading to more integrated neighborhoods.
DISCUSSION

There is no question that increasing home mortgage lending to black families has raised black homeownership rates to the highest levels ever experienced in the US. Increased homeownership among black families is certainly a positive change in the housing industry’s history. The question I ask throughout this dissertation is how effective increases in black homeownership have been in changing segregation levels. “From racially isolated and poor quality schools, through disinvestments of both public and private capital and city services, to high crime and neighborhood decay, the consequences of racial segregation have been monumental” (Harrison, 2001, p. 3). If increases in black-owned homes occur in only a certain number of neighborhoods, the negative consequences of race-based residential segregation will continue to afflict our country and, of course, will be particularly injurious to black families.

My study finds that changes in lending to black homebuyers facilitated declines in segregation experienced during the 1990s. The increased share of mortgage loans received by blacks both increased black homeownership and helped decrease segregation levels in MSAs with significant black populations. Changes in mortgage lending over the past decade impacted levels of race-based residential segregation, because increased credit for homebuying to previously underserved
populations and areas increases their housing and neighborhood options. Regardless of borrowers’ incomes, improving an MSA’s black population’s share of home mortgage loans expands the quantity of homes and variety of neighborhoods available. That blacks are using their new buying power to buy houses in previously predominantly white neighborhoods is evidenced by the connection between some MSAs’ having more black loan shares coupled with their lower segregation levels. However, when the distribution of loans from certain lenders is associated with race, the mere increase in black homeownership does not consistently result in increased residential integration.

Simply increasing lending to blacks cannot eliminate segregation between black and white households. My study provides some evidence that some types of home mortgage lending foster integration, while others either help maintain or have no impact on segregation levels. It appears that the home mortgage lending market’s current practice of disproportionately servicing certain populations and areas with limited lending choices inhibits the potentially integrating effects of increased black homeownership. Although the number of loans from subprime lenders remains a small portion of the lending industry, increases in these lenders’ activities account for about one-third of the growth in all lending during the 1990s. Even more to the point, subprime lending accounts for about 60 percent of the growth among minority borrowers but only 31 percent among white borrowers. A similar pattern exists for FHA loans in that much of the growth in minority homeownership occurs through these loans, while most white homeownership originates through conventional loans. A legacy of differential treatment in the housing market paved the way for the current
more covert and, perhaps, less intentional methods of limiting blacks’ home purchase options.

Availability of homes depends in large part on financing accessibility, in that without the means to obtain home mortgaging, homebuying is an unattainable goal. A slight majority of the loans now made available to black homeseekers are from the specialized lending market and government-insured (i.e. FHA) loans. My empirical research shows that these forms of lending have not helped decrease segregation levels. Both lending geography and quality limit the extent to which recent increases in lending to blacks can translate into improvements in neighborhood options.

Sources of Loans

During the 1990s, the federal government worked to correct past racial injustices by increasing home mortgage lending to previously underserved populations and neighborhoods. Theoretically, traditional and newer specialized (i.e. subprime and manufactured housing) mortgage lenders competing for borrowers’ business in these markets should improve the number and quality of options available. This, in turn, would lead to better service for black homebuyers, whose overall home mortgage opportunities had been previously restricted. However, the disproportionate rise in loans from subprime lenders to blacks plays no role in expanding the location of their housing options. Even though black homebuying is occurring at higher rates than ever before, residential location continues to be constrained in ways that go beyond simply having enough money to purchase the house.
Subprime lending

Subprime lenders are now disproportionately located in previously underserved neighborhoods. In fact, the proportion of an MSA’s population consisting of black residents is positively related to its share of subprime loans (Scheesele, 2002). It seems that increases in this form of lending support black residents remaining in predominantly black neighborhoods rather than encouraging integration of predominantly white neighborhoods. “These lenders have aggressively expanded their activity in the lower-income and minority market; moreover, since most of them are not subject to laws encouraging community investment, these lenders have expanded their activity without the goad of regulatory pressure applied by such laws” (Canner, Passmore, and Laderman, p. 709, 1999). Subprime lenders’ concentration in minority and low-income areas means that black homeownership increases through loans from subprime lenders do not alter segregated residential patterns.

Subprime lenders’ locations in predominantly minority neighborhoods also lead to blacks being disproportionately serviced with lower quality loans compared to their white counterparts. Higher loan fees and interest rates accompany subprime lending. Restricting the access of many black homeseekers to those of lower quality diminishes the integrating potential of increased lending by differentially influencing the financial capabilities of black and white homebuyers to choose neighborhoods of equal cost. Although subprime lenders have expanded lending to underserved markets, these loans end up costing the borrowers more through higher interest rates. In contrast, traditional lenders cost more upfront by requiring higher downpayments,
but their loans are accompanied by more reasonable rates and terms. In the long run, traditional lenders actually provide better loans. Apgar contends that subprime loans increase families’ financial strains, thereby leading to higher foreclosure rates, abandoned homes, and, ultimately, destabilized communities (5/24/2000). This string of consequences provides a possible explanation for my findings. Neighborhoods plagued with the kinds of conditions he describes do little to encourage integration.

Manufactured housing lending

Manufactured homes make up only 8% of the total owner-occupied housing stock, but the effect of manufactured housing lending on segregation levels is important, as manufactured housing made up 17% of the growth in owner-occupied housing between 1993 and 1999. In fact, the growth in manufactured homes was almost double that of “site-built” homes between 1993 and 1998 (47% compared to 24%) (Canner et al, 1999). Manufactured homes have historically attracted white homebuyers with lower incomes. But, during the past few decades, manufactured homes have become an increasingly important component of their overall homeownership. Blacks currently own 7% of all manufactured homes and 8% of all homes, so their share of this type of housing may soon be the primary form of homeownership among blacks (Apgar, 2002). Given that manufactured homes comprise a significant portion of black homeownership, it is important to understand their impact on segregation patterns.

The unique nature of manufactured homes may help explain its negative impact on residential integration. Manufactured homes are built in a factory, transported to their placement site, and are usually then installed on a permanent
foundation. Land prices and land-use restrictions determine the installation locations of manufactured housing.

Mobile homes and manufactured housing are known for offering an affordable housing option for many low- and moderate-income households. A manufactured home costs about 20 to 30 percent as much as a comparable site-built home (HUD, 1998). Although lower in price, per se, manufactured homes cost more in terms of financing. Loans for manufactured homes are characterized by higher interest rates and less favorable terms than those for traditional home purchases. In addition, there are no standards for determining loan conditions for manufactured homes as there are for site-built home mortgages (Apgar, 2002). Higher financing costs detract from the savings associated with purchasing a manufactured home, thereby deflating the potential of manufactured housing from actually being an affordable housing option. Along with the riskier loan terms, the fact that manufactured homes, especially those placed on leased lots, lose value over time provide an explanation for higher default rates (Apgar, 2002). High levels of defaulted loans lead to neighborhood deterioration, which can be a deterrent to integration.

Manufactured home dealers typically work with a few lenders to whom they often steer homeseekers. Thus, most manufactured home purchasers are given limited financing options and accept the dealer’s loan package without knowing that the dealer receives bonus fees from the lender. That manufactured home dealers and lenders work together increases the probability of completing the purchase process before the homebuyer leaves the dealer lot. In effect, the manufactured homebuyer is then prevented from shopping for better loan terms (Apgar, 2002). The efficiency of
these loan approvals attracts lower-income, first-time homebuyers, but higher financing costs for manufactured housing loans deteriorate some of the potential savings accrued from purchasing a lower-cost manufactured home. The restrictive process involved in purchasing a manufactured home may allow the home seller and lender to influence the racial composition of the manufactured housing community. I can only speculate as to the negative neighborhood effects of dealers and lenders working together to sell manufactured homes, as I cannot make conclusions about such collaborations based on my data and analysis. Investigating the racial composition of manufactured housing communities or areas with high concentrations of manufactured homes would provide evidence to support or negate the potentially segregating effects of manufactured housing lenders’ and dealers’ partnership. However, I can conclude that concentrations of manufactured home lending combined with restrictions on site placements significantly limit the potentially integrating impact of more black homeownership of this kind.

**Types of Loans**

In a statement made to the Subcommittee on Housing and Community Opportunity of the House Banking and Financial Services Committee’s hearing, Calvin Bradford of the Chicago Fair Housing Alliance argued that the FHA’s lending program “supports discrimination and reinforces segregation by unfairly concentrating FHA loans, poor underwriting, foreclosures, and abandoned property in minority and racially changing areas” (Bradford, 1998). My nationwide analysis shows that, regardless of its merits in increasing black homeownership, loans from
the FHA do little to change segregation levels between blacks and whites. While increased black homeownership using FHA loans allows segregation to persist, increasing blacks’ share of conventional loans to the point of parity with whites plays an influential part in racially integrating neighborhoods. As with lending sources, I believe that a differential distribution of certain loans based on neighborhoods’ racial compositions severely debilitates increased black homeownership levels’ potential to integrate households.

Based on my study’s findings and borrowing from Bradford’s contentions, I argue that disproportionately distributing FHA loans to minority and racially changing neighborhoods contributes to heightened neighborhood deterioration in these areas, maintaining race-based segregation. Focus group discussions on the homebuying experiences of high- and low-income black and Hispanic recent homebuyers suggest that a history of higher denial rates for minority loan applicants continues to influence lending outcomes. “The typical minority mortgage applicant did not actively seek competitive bids to obtain the best deal possible; the primary concern is getting the application approved” (RIHA, 2003). The Research Institute for Housing America also discovered that “the few participants who considered multiple mortgage applications to permit closer comparisons were discouraged from doing this by the penalties associated with repeated requests for credit scores” (RIHA, 2003). Steering white home seekers into FHA loans is more difficult, as many more mortgage companies are competing for their business (Bradford, 1998).

For much of my FHA discussion, I borrow from Calvin Bradford’s “The Two Faces of FHA: A case of government supported discrimination against minority and racially changing communities,” a study conducted for the Chicago Fair Housing Alliance on the repercussions of neighborhoods receiving high levels of FHA loans (1998).
(1996) suggests “research is needed to evaluate the downside of a public policy commitment to minority homeownership programs (e.g. fostering household investment in geographic areas with little chance of house value appreciation)” (p. 320). My study suggests that when a disproportionate segment of the new home-owning population receives (perhaps being steered toward) credit of poorer quality, policies meant to increase homeownership do not help integrate households. “The color of money is not simply a problem of access to mortgage credit, but also an issue of what kind of credit is offered, and on what terms, to different borrowers in different neighborhoods” (Wyly and Holloway, 1999, p.575).

Conclusion

I began this dissertation by reviewing some of the explanations for the persistence of segregated housing between blacks and whites. Among the main theories involved in creating and maintaining segregated neighborhoods are the income gap between black and white households, a legacy of housing discrimination, and differential neighborhood preferences. I proposed that changes in these factors within the context of an MSAs long-standing characteristics could help explain declining segregation in the 1990s.

Improvements in blacks’ relative economic status do not help explain decreasing segregation levels. At least in the area of housing, my study does not support Wilson’s argument that income is currently more influential in determining blacks’ life outcomes than at any previous time in US history (Wilson, 1987). As others have found before me (Denton and Massey, 1988; Fielding and Taeuber, 1992;
Massey et al, 1987), decreased economic disparities between black and white households have no significant impact on desegregating residential neighborhoods. Neighborhood disparities between white and black households certainly exist, as evidenced by the lower median household incomes of the average predominantly black versus white neighborhoods. The segregation index between whites and other minority groups shows significant declines even when looking at only high-income households. “Only blacks experience a pattern of constant, high segregation that is impervious to socioeconomic influence” (Massey and Denton, 1993, p. 88). My study supports this view – the changing size of the socioeconomic gap does not meaningfully explain the extent of change in their residential segregation. Thus, for black homebuyers, higher incomes do not necessarily help translate increased residential mobility into living in less segregated neighborhoods. “Perhaps it is easier to get ahead in the labor market than in the housing market, where tradition and institutions of discrimination persist” (Logan, p. 19, 2002).

A legacy of housing discrimination continues to exert some control over housing conditions in the US. Federal policies aimed at eradicating racial discrimination in the housing industry, specifically differential treatment in the lending markets, have indeed succeeded in increasing homeownership rates among blacks and other minorities. My research suggests that, in addition to increasing black homeownership, national increases in mortgage lending to blacks expand neighborhood options and play a role in decreasing race-based residential

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34 In 2000, non-Hispanic blacks are still the lowest-income racial group with average incomes at 63.7% of whites’. As well, the average black household is located in a neighborhood with median incomes of about 70% as high as those of white households (Logan, 2002).
Becker (1957) argued that natural forces of competition would extinguish market discrimination, and by extension of his argument, competition between mortgage lenders would let borrowers’ qualifications rather than racial characteristics determine the type of loan. The economics of discrimination seem to lose support, though, when the mechanisms of a free market are restricted. Contrary to the ideas put forth by neoclassic economic theorists, biased lending patterns according to borrowers’ race cannot be explained away by differences in credit histories or other related economic characteristics (Nesiba, 1996). Rather, my findings support Massey and Denton’s contentions in American Apartheid (1993) that lending discrimination against minorities is significantly related to persistent levels of race-based residential segregation in the US. The existence of differential treatment based on race is apparent in the disproportionate loan distribution of certain types to black borrowers and neighborhoods, often regardless of financial qualifications. Consequently, the housing industry still discourages black homebuyers from living where their incomes merit and their preferences might lead.

Farley’s study on differences in blacks’ and whites’ attitudes toward their neighborhoods’ racial compositions indicated that more blacks than whites would prefer living in racially mixed communities (1993). That increased lending to black homebuyers has led to decreased segregation levels provides implicit evidence that, through the loosening of past financial restrictions on blacks’ home buying power, blacks’ individual preferences for homes in racially mixed neighborhoods has been more actualized. However, the fact that increases in black homeownership through conventional loans and from traditional lenders brought about greater decreases in
segregation levels, whereas the disproportionate increases in subprime lending to blacks have no impact on changing segregation levels suggests that neighborhood preferences play a significant role. Whether it is “neutral ethnocentrism” (Thernstrom and Thernstrom, 1996) or whites’ hostility and blacks’ fear toward the other group (Bobo and Zubrinksy, 1996), group preferences continue to be shaped within the larger ecological framework. Increased lending to previously underrepresented groups places more strength behind the individuals’ preferences within these groups. As blacks’ accessibility to more neighborhoods than in previous decades increases, blacks’ preferences can be a more powerful force in determining where and with whom they live than has been the case historically.

The bottom line is that loan products should be offered to those who qualify. If FHA loans or specialized lenders offer the best mortgage product given the home seeker’s background, then these forms of lending should be made available to them regardless of race. But if borrowers qualify for more cost-effective lending products, then a method of servicing all home seekers in an equal opportunity manner should be implemented. “No matter what their ethnic origin, economic status, social background or personal characteristics, African-Americans continue to be denied full access to US housing markets” (Massey and Denton, 1993, p. 114). The race-based lending differentials significantly impact neighborhood conditions by helping maintain segregated housing. Having addressed and progressively reduced the homeownership gap, the task now is to ensure that the effects of increased lending do not lead to segregation persisting.
APPENDIX A

MSAS INCLUDED IN STUDY

Abilene, TX MSA
Akron, OH PMSA
Albany, GA MSA
Albany-Schenectady-Troy, NY MSA
Alexandria, LA MSA
Allentown-Bethlehem-Easton, PA MSA
Amarillo, TX MSA
Anchorage, AK MSA
Ann Arbor, MI PMSA
Anniston, AL MSA
Asheville, NC MSA
Athens, GA MSA
Atlanta, GA MSA
Atlantic-Cape May, NJ PMSA
Augusta-Aiken, GA-SC MSA
Austin-San Marcos, TX MSA
Bakersfield, CA MSA
Baltimore, MD PMSA
Baton Rouge, LA MSA
Beaumont-Port Arthur, TX MSA
Benton Harbor, MI MSA
Bergen-Passaic, NJ PMSA
Biloxi-Gulfport-Pascagoula, MS MSA
Binghamton, NY MSA
Birmingham, AL MSA
Bloomington, IN MSA
Bloomington-Normal, IL MSA
Boston, MSA-NH PMSA
Brazoria, TX PMSA
Bremerton, WA PMSA
Bridgeport, CT PMSA
Brockton, MSA PMSA
Bryan-College Station, TX MSA
Buffalo-Niagara Falls, NY MSA
Canton-Massillon, OH MSA
Cedar Rapids, IA MSA
Champaign-Urbana, IL MSA
Charleston-North Charleston, SC MSA
Charleston, WV MSA
Charlotte-Gastonia-Rock Hill, NC-SC MSA
Charlottesville, VA MSA
Chattanooga, TN-GA MSA
Chicago, IL PMSA
Cincinnati, OH-KY-IN PMSA
Clarksville-Hopkinsville, TN-KY MSA
Cleveland-Lorain-Elyria, OH PMSA
Colorado Springs, CO MSA
Columbia, MO MSA
Columbia, SC MSA
Columbus, GA-AL MSA
Columbus, OH MSA
Corpus Christi, TX MSA
Cumberland, MD-WV MSA
Dallas, TX PMSA
Danbury, CT PMSA
Danville, VA MSA
Davenport-Moline-Rock Island, IA-IL MSA
Dayton-Springfield, OH MSA
Daytona Beach, FL MSA
Decatur, AL MSA
Decatur, IL MSA
Denver, CO PMSA
Des Moines, IA MSA
Detroit, MI PMSA
Dothan, AL MSA
Dutchess County, NY PMSA
El Paso, TX MSA
Elkhart-Goshen, IN MSA
Elmira, NY MSA
Enid, OK MSA
Erie, PA MSA
Evansville-Henderson, IN-KY MSA
Fayetteville, NC MSA
Flint, MI PMSA
Florence, AL MSA
Florence, SC MSA
Fort Lauderdale, FL PMSA
Fort Myers-Cape Coral, FL MSA
Fort Pierce-Port St. Lucie, FL MSA
Fort Smith, AR-OK MSA
Fort Walton Beach, FL MSA
Fort Wayne, IN MSA
Fort Worth-Arlington, TX PMSA
Fresno, CA MSA
Gadsden, AL MSA
Gainesville, FL MSA
Galveston-Texas City, TX PMSA
Gary, IN PMSA
Grand Rapids-Muskegon-Holland, MI MSA
Greensboro--Winston-Salem--High Point, NC MSA
Greenville-Spartanburg-Anderson, SC MSA
Hagerstown, MD PMSA
Hamilton-Middletown, OH PMSA
Harrisburg-Lebanon-Carlisle, PA MSA
Hartford, CT MSA
Hickory-Morganton-Lenoir, NC MSA
Honolulu, HI MSA
 Houma, LA MSA
 Houston, TX PMSA
 Huntsville, AL MSA
 Indianapolis, IN MSA
 Iowa City, IA MSA
 Jackson, MI MSA
 Jackson, MS MSA
 Jackson, TN MSA
 Jacksonville, FL MSA
 Jacksonville, NC MSA
 Janesville-Beloit, WI MSA
 Jersey City, NJ PMSA
 Kalamazoo-Battle Creek, MI MSA
 Kankakee, IL PMSA
 Kansas City, MO-KS MSA
 Kenosha, WI PMSA
 Killeen-Temple, TX MSA
 Knoxville, TN MSA
 Kokomo, IN MSA
 Lafayette, LA MSA
 Lake Charles, LA MSA
 Lakeland-Winter Haven, FL MSA
 Lansing-East Lansing, MI MSA
 Las Vegas, NV-AZ MSA
 Lawrence, KS MSA
 Lawton, OK MSA
 Lexington, KY MSA
 Lima, OH MSA
 Lincoln, NE MSA
 Little Rock-North Little Rock, AR MSA
 Longview-Marshall, TX MSA
 Los Angeles-Long Beach, CA PMSA
 Louisville, KY-IN MSA
 Lubbock, TX MSA
 Lynchburg, VA MSA
 Macon, GA MSA
 Madison, WI MSA
 Mansfield, OH MSA
 Melbourne-Titusville-Palm Bay, FL MSA
 Memphis, TN-AR-MS MSA
 Merced, CA MSA
 Miami, FL PMSA
 Middlesex-Somerset-Hunterdon, NJ PMSA
 Milwaukee-Waukesha, WI PMSA
 Minneapolis-St. Paul, MN-WI MSA
 Mobile, AL MSA
 Monmouth-Ocean, NJ PMSA
 Monroe, LA MSA
 Montgomery, AL MSA
 Muncie, IN MSA
 Naples, FL MSA
 Nashville, TN MSA
 Nassau-Suffolk, NY PMSA
 New Bedford, MSA PMSA
 New Haven-Meriden, CT PMSA
 New London-Norwich, CT-RI MSA
 New Orleans, LA MSA
 New York, NY PMSA
Newark, NJ PMSA
Newburgh, NY-PA PMSA
Norfolk-Virginia Beach-Newport News, VA-NC MSA
Oakland, CA PMSA
Ocala, FL MSA
Odessa-Midland, TX MSA
Oklahoma City, OK MSA
Omaha, NE-IA MSA
Orange County, CA PMSA
Orlando, FL MSA
Owensboro, KY MSA
Panama City, FL MSA
Pensacola, FL MSA
Peoria-Pekin, IL MSA
Philadelphia, PA-NJ PMSA
Phoenix-Mesa, AZ MSA
Pine Bluff, AR MSA
Pittsburgh, PA MSA
Portland-Vancouver, OR-WA PMSA
Providence-Fall River-Warwick, RI-MA MSA
Racine, WI PMSA
Raleigh-Durham-Chapel Hill, NC MSA
Reading, PA MSA
Richmond-Petersburg, VA MSA
Riverside-San Bernardino, CA PMSA
Roanoke, VA MSA
Rochester, MN MSA
Rochester, NY MSA
Rockford, IL MSA
Sacramento, CA PMSA
Saginaw-Bay City-Midland, MI MSA
St. Joseph, MO MSA
St. Louis, MO-IL MSA
Salinas, CA MSA
San Angelo, TX MSA
San Antonio, TX MSA
San Diego, CA MSA
San Francisco, CA PMSA
San Jose, CA PMSA
Sarasota-Bradenton, FL MSA
Savannah, GA MSA
Seattle-Bellevue- Everett, WA PMSA
Sharon, PA MSA
Sherman-Denison, TX MSA
Shreveport-Bossier City, LA MSA
South Bend, IN MSA
Springfield, IL MSA
Springfield, MA MSA
Stamford-Norwalk, CT PMSA
Steubenville-Weirton, OH-WV MSA
Stockton-Lodi, CA MSA
Syracuse, NY MSA
Tacoma, WA PMSA
Tallahassee, FL MSA
Tampa-St. Petersburg-Clearwater, FL MSA
Terre Haute, IN MSA
Texarkana, TX-Texarkana, AR MSA
Toledo, OH MSA
Topeka, KS MSA
Trenton, NJ PMSA
Tucson, AZ MSA
Tulsa, OK MSA
Tuscaloosa, AL MSA
Tyler, TX MSA
Utica-Rome, NY MSA
Vallejo-Fairfield-Napa, CA PMSA
Victoria, TX MSA
Vineland-Millville-Bridgeton, NJ PMSA
Waco, TX MSA
Washington, DC-MD-VA-WV PMSA
Waterbury, CT PMSA
Waterloo-Cedar Falls, IA MSA
West Palm Beach-Boca Raton, FL MSA
Wheeling, WV-OH MSA
Wichita, KS MSA
Wichita Falls, TX MSA
Williamsport, PA MSA
Wilmington-Newark, DE-MD PMSA
Wilmington, NC MSA
Worcester, MSA-CT PMSA
York, PA MSA
Youngstown-Warren, OH MSA
APPENDIX B

DEFINITIONS OF MEASURES

**General MA characteristics**

- **Change in BW dissimilarity index, 1990 to 2000**
  The degree of segregation between black and white households in 2000 minus the 1990 score. A negative value for this measure indicates decreased segregation levels. Literally, this variable indicates the degree change in the proportion of the black population who would need to move to another tract for that MSA to be experiencing complete integration.

- **Change in BW income ratio, 1990 to 2000**
  The relative economic positions of blacks and whites are determined by blacks' median household income as a proportion of whites'. I measure an MSA's change in this indicator by subtracting the 1989 from the 1999 black/white ratio.

- **Average MSA population (logged), 1990**
  The total population of the MSA in 1990 (logged).

- **Black-White growth rates, 1990 to 2000**
  The average annual growth rate of the black minus white populations between 1990 and 2000.

- **Other-Black growth rates, 1990 to 2000**
  The average annual growth rate of the other minus black populations between 1990 and 2000.

- **Recent housing construction**
  The percent increase in occupied housing units constructed during the 1990s.

- **White-Black exposure index, 1990**
  The degree of white exposure to black neighbors in 1990. This measure indicates the potential for contact between white and black residents in an MSA. Literally, this exposure index calculates whites' proportion of black neighbors.

**Lending Characteristics**

- **Percent of lending, 1992 through 1999**
  The percent of all loans that were conventional between 1992 and 1999.
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subprime lenders</td>
<td>The percent of all loans from subprime lenders between 1992 and 1999.</td>
</tr>
<tr>
<td>Manufactured housing lenders</td>
<td>The percent of all loans from manufactured housing lenders between 1992 and 1999.</td>
</tr>
<tr>
<td>Traditional lenders</td>
<td>The percent of all loans from subprime lenders between 1992 and 1999.</td>
</tr>
<tr>
<td>Conventional loans, Subprime lenders</td>
<td>The percent of all loans that were conventional and from subprime lenders between 1992 and 1999.</td>
</tr>
<tr>
<td>Conventional loans, MH lenders</td>
<td>The percent of all loans that were conventional and from manufactured housing lenders between 1992 and 1999.</td>
</tr>
<tr>
<td>Conventional loans, Traditional lenders</td>
<td>The percent of all loans that were conventional and from traditional lenders between 1992 and 1999.</td>
</tr>
</tbody>
</table>

**Absolute changes in loan shares, 1992-94 to 1997-99**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
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</table>

Relative changes in lending, 1992-94 to 1997-99

<table>
<thead>
<tr>
<th>Type of Loan</th>
<th>Description</th>
</tr>
</thead>
</table>

\* All nonlending indicators are calculated using Census data.  
\* All lending indicators are calculated using HMDA data.


Spayd and Brenner, 1993, p. A25


U.S. Department of Housing and Urban Development, 1999 HUD, 2000


