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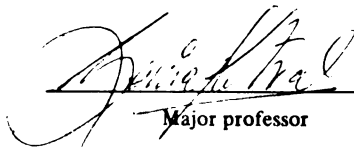
The Magnitude of Mortgage Redlining and Its
Relationship to Insurance Patterns in
Urban Environments

presented by

Janet Pualani Corniel

has been accepted towards fulfillment
of the requirements for

Master's degree in Urban & Regional Planning


Major professor

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**THE MAGNITUDE OF MORTGAGE REDLINING AND ITS
RELATIONSHIP TO INSURANCE PATTERNS IN
URBAN ENVIRONMENTS**

By

Janet Pualani Corniel

A THESIS

**Submitted to
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ABSTRACT

THE MAGNITUDE OF MORTGAGE REDLINING AND ITS RELATIONSHIP TO INSURANCE PATTERNS IN URBAN ENVIRONMENTS

By

Janet Pualani Corniel

Does redlining remain a problem within urban environments in this country? Since the Civil Rights Movement in the 1960's, there has been a great deal of debate regarding redlining and various methods have been used to study this social enigma. Historically, the response has changed with the political climate.

This thesis describes a case study of the Tri-County Region, consisting of Wayne, Oakland and Macomb Counties, in Southeast Michigan. The purpose of this analysis is to analyze the extent of mortgage redlining and its relationship to homeowner's insurance patterns. The main hypothesis of this thesis is that there is a significant degree of mortgage redlining and similarly it has a relationship to homeowner's insurance patterns. Furthermore, it was conjectured that: comparing the difference between the means of white and black applicants denied, and analyzing whether the variables of income, owner-occupied households and minority populations do have an effect on applicants denied. These subsequent hypotheses

further the argument and offers a composite view of the current lending patterns in the study area.

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**To my family; Mom, Dad, Kim, Papa, Nana and Chris for
years of unconditional love and support.**

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CHAPTER 1

Introduction

In order to determine the extent of redlining within urban environments, the Tri-County Region of Southeastern Michigan, which includes Wayne, Oakland and Macomb Counties, was examined. Historically, in the United States, mortgage redlining was defined as (Taibi, 1994, p.1486):

the practice of literally drawing a red line around certain neighborhoods on a city map and refusing to make loans for property or businesses located within the demarcated zones. Today, the term refers to any set of practices that systematically denies credit to applicants from low- and moderate income, and minority neighborhoods.

As seen by the mere definition of redlining, it has evolved over time and reactions to such practices have changed as well.

Detroit, Michigan is a city that faces the problem of countering disinvestment. Due to many years of decline, Detroit has been targeted for support. Using Detroit as a model, this study analyzes two possible causes of disinvestment that will make it difficult to spark economic growth; mortgage lending and homeowner's insurance patterns within urban environments.

Statement of Purpose

The purpose of this thesis is to analyze the extent of mortgage redlining and its relationship to homeowner's insurance patterns. It is conjectured that there is a significant presence of redlining within the Tri-County Region, despite legislative efforts to curtail it. In addition, it is hypothesized that there is a significant difference between the means of white mortgage loan applicants' denied and black mortgage loan applicants' denied. Additionally, it is proposed that income, owner-occupied households and black population have an effect on mortgage loan applicants' denied. These subsequent tests offer a composite view of the current lending patterns of the study area.

Methods

Several studies on redlining have been conducted. A few of those discussed in the literature review of this analysis are Squires and O'Connor (1993), Squires and Valez (1987), Dunham and Jackson (1993), and Galster (1991,1992). This analysis uses some of the suggestions proposed by these authors and incorporates its own examination through a case study of the Tri-County Region.

The Tri-County area encompasses Wayne, Oakland and Macomb Counties within the state of Michigan and are the most urban of the counties, within the Detroit

Primary Metropolitan Statistical Area (PMSA). Furthermore, Wayne County includes Detroit proper and outlying communities to the south and has the most diverse population of the three counties studied with 40 percent of the population being black. Oakland County is located to the northwest of Wayne and has experienced a large amount of suburban growth over the past decade. Macomb County is located to the north of Wayne County and has experienced some suburban growth over the past decade and has the smallest percentage of black population of the three counties studied, with 1.4 percent (SEMCOG, 1993).

In order to analyze the magnitude of redlining and its relationship to homeowner's insurance patterns 1992 Home Mortgage Disclosure Act (HMDA) Data, published in 1993 and 1992 homeowner's insurance patterns for the Tri-County area were examined. This thesis analyzes the direct relationship between racial disparity in home mortgage lending and homeowners' insurance patterns quantitatively and details this relationship for the Tri-County area. It is assumed that the higher the percentage of minority denial rates, the more difficult to obtain and maintain mortgage lending and homeowner's insurance services. If such services are available, often times they are limited.

Several statistical tests are used to answer hypotheses in this analysis. T-tests indicate a presence of racial disparity within mortgage lending. Multiple regression further details possible cause and effect of such disparity. Correlation is used to find

two significant relationships; (1) between minority denial rates and involuntary markets or state Fair Access to Insurance Requirements (FAIR) plan insurance and (2) between cancellations and nonrenewals by voluntary markets or private insurance and a high presence of involuntary markets (state FAIR plan insurance).

Prior to statistically analyzing the data, insurance data by zip codes and HMDA data by census tracts were aggregated into Minor Civil Divisions or MCDs in order to place these data into comparable geographic units. There are approximately 133 MCDs within the Tri-County Region, but 10 were eliminated from further study because they lacked sufficient data (SEMCOG, 1993).

**The differences between the means of
white and black applicants denied**

The difference of means in white mortgage loan applicants' denied and black mortgage loan applicants' denied indicate a presence of racial disparity. Studies by Canner and Smith (1991, 1992, 1994) and Squires and O'Connor (1993), further discussed in the literature review, confirm the use of denial rates in establishing a presence of racial disparity. This explains the use of denial rates in this analysis as an indicator.

**The effects of income, owner-occupied households
and minority population on applicants denied**

In order to establish a causal model of the extent of redlining present in the study area, the effects of independent variables income, percent owner-occupied households and percent minority population on percent applicants denied were assessed by linear regression. Similar variables were used in a study conducted by Dunham and Jackson (1993) to test the market shares of both depositories and mortgage companies in Lansing and Grand Rapids, Michigan. This thesis focuses on denial rates because most racial disparity in mortgage lending exists in the denial rates.

**The relationship between involuntary market and
policy cancellations and nonrenewals by the private insurer**

In an effort to establish the relationship between voluntary market (private insurance) cancellations and nonrenewals by the insurer and the involuntary market (state FAIR plan) insurance, correlation was used. The results of this correlation is used to address the problem with obtaining and maintaining private insurance in areas with a predominance of state FAIR plan insurance.

The relationship between homeowner's insurance and redlining

The percentage of involuntary market and the percent black mortgage loan applicants' denied were used in a correlation. This relationship indicates whether a high presence involuntary market (state FAIR plan) insurance has a positive relationship with a high percent of black mortgage loan applicants' denied. The result of this correlation explains a link between homeowner's insurance and mortgage redlining.

Summation

This thesis describes the interdependent relationship of homeowner's insurance and mortgage lending and current theoretical perspectives through a literary review and a statistical analysis of the Tri-County Region. National HMDA data is discussed and indicates problems still exist on that level. In addition, an analysis of governmental responses discusses available remedies. Lastly, a description of the insurance and lending patterns is detailed.

This discussion establishes the basis of the methodology used in the analysis, which enables the use of correlation to test the strength of the relationship between homeowner's insurance and lending patterns. Multiple regression analysis on lending patterns offers a current composite of the Tri-County Region and the existence of racial disparity. The results of these tests are used to explain the current magnitude of the problem and policy implications.

CHAPTER 2

Literature Review

Although the United States has continuously had a presence of discrimination within its housing market, little credence was given to this perplexing social dilemma until the Civil Rights movement of the 1960's made its impact on the nation. Once the problem had been exposed, various objectives at curtailing it were considered. In an effort to address the problem, theoretical questions were asked and social responsibility became popular. This led to the onset of studies and legislation in the 1970's.

Redlining and its Historical Implications

Historically, in the United States, mortgage redlining was defined as (Taibi, 1994, p.1486):

the practice of literally drawing a red line around certain neighborhoods on a city map and refusing to make loans for property or businesses located within demarcated zones. Today, the term refers to any set of practices that systematically denies credit to applicants from low- and moderate income, and minority neighborhoods.

Although this evolution transpired, inequity remains a problem in certain areas of the lending process, such as the denial rates in mortgage lending.

Financial institutions were not alone in building barricades that made the acquisition of property difficult to nearly impossible. Historically, the insurance

industry has had a role in redlining. Insurance redlining is defined as “a discriminatory failure or refusal to provide property insurance on dwellings” (Dunn v. Midwestern Indemnity, 1979, p. 1106). Insurance agencies have established a history of discriminatory business practices. As further explained by Squires and Valez (1988, p.64):

At least since the mid 1960's, when several urban areas experienced race riots, revolts and other forms of civil disobedience, many insurers have concluded that urban communities are uninsurable. Underwriting manuals have frequently included maps with red lines drawn on them to indicate areas where policies should not be written, or should be written only after careful examination and frequently at higher costs or with special exclusions.

Redlining began as intentional discrimination and has evolved into a subconscious phenomenon. Prior to legislation, it was common knowledge that neighborhoods were systematically groomed for different races and social classes. This discrimination was encouraged and a part of common business practices for the real estate market. Racial make-up was used as a criterion in evaluating real estate. Until 1950, the National Association of Real Estate Boards' National Code of Ethics specifically stated that (Squires & O'Connor, 1993, p. 85):

a realtor should never be instrumental in introducing into a neighborhood a character of property or occupancy, members of any race or nationality, or any individual whose presence will clearly be detrimental to property values in the neighborhood.

With segregated neighborhoods as the historical basis for many urban areas and white flight after the riots of the 1960's, a pattern of urban disinvestment has made it difficult for urban areas to grow economically.

For years, race has been a factor in determining an assumption of risk.

“Historically, insurers have used race and ethnicity to identify ‘good’ and ‘bad’ risks—those categories of people who were more or less likely to experience compensable losses” (Squires & Valez, 1987, p. 65). Although legislation has been enacted for financial institutions, there has been no direct regulations created by the federal government for insurance industries.

Theoretical Framework and Current Literature

There are many theories on redlining and studies have been conducted on both mortgage and insurance redlining, such as analyses done by Galster (1991, 1992), Dunham and Jackson (1993), Squires, Valez and Taeuber (1991). Although these studies have recognized a link between the two, this study attempts to make a direct quantitative link between the extent of racial disparity in mortgage lending and its relationship to the lack of availability of private homeowner's insurance.

Efforts to address the strength of this relationship between mortgage lending and insurance patterns and the implications of redlining are incorporated into the literature review and the statistical analysis of this thesis. Library research resulted in one study that shares some of the methodology used in this analysis. This particular study

conducted by Squires & Valez (1987) used insurance and census data to focus on the effects of insurance underwriting on disinvestment in urban areas and the profitability of the industry, using Milwaukee as a case study.

Mortgage Redlining

Until the passage of the Financial Institutions Reform, Recovery and Enforcement Act (FIRREA) in 1989, which provided more detailed information on the applicants in mortgage data, it was difficult to conduct analytical studies of HMDA data. HMDA data provided aggregate information without the racial background of the applicants; this made it difficult to conduct in-depth analyses of racial disparity.

Hula's discourse on redlining, published in December 1991, illustrates the problems encountered when testing aggregate HMDA data. Hula attempted to reconsider the relationship between race and geographic location with the allocation of home credit by private sector lending institutions by using a national data set for the years of 1981 through 1987. Hula found no significant presence of redlining.

In particular, Hula's (1991) analysis centered around two inconsistencies which were identified by Shlay, Goldstein and Bartelt (1992, p. 130):

First, Hula used stepwise-regression procedures rather than a priori specifying and then testing a theoretical model. Second, the reported results were standardized regression coefficients (betas), not the unstandardized coefficients (bs) typically reported in multivariate analyses of HMDA data.

Stepwise regression is an estimation process which includes variables in an equation that produce the largest increase in R^2 . R^2 is the proportion of variance and

the assumption is that variables which explain the most variance are the most important (Shlay, Goldstein & Bartelt, 1992). Further emphasis added by Van Wagnen (1991), a priori specifying is a method of parsimoniously selecting those variables upon which an explanation is dependent.

Using stepwise regression has been criticized because it has been known to produce biased estimates and has little or no value in analyzing statistical models. (Shlay, Goldstein & Bartelt, 1992) Furthermore, Galster and Hoopes state that one lesson to be learned from Hula's discourse is that "disaggregation should be a guidepost for analysts of HMDA data" (1993, p. 149). Hula's 1991 study encountered these problems because he used aggregate data as a base and ran step-wise regression to test such data instead of using planned comparisons on a theoretical model.

Perle, Lynch and Horner (1994) describe a perspective on redlining in Detroit using the same methodology as Hula (1991) used in his discourse. The goal of the study was to specifically address an earlier study by Blossom, Everett and Gallagher (1988) that found racial bias with some lending institutions in Detroit. Using mortgage approval rates for the city, the data was tested for statistical significance and it was found that there was no statistical significance to conclude a presence of redlining in Detroit.

Perle et al. (1994) used stepwise regression as did Hula (1991). As mentioned earlier, the article published by Hula received a great deal of criticism because of the

quantitative method used in his analysis. The publication of the study by Perle et al. followed academic criticisms of what Hula's study should have done, yet no re-evaluation of the method used or an address of the limitations of using stepwise regression and aggregate HMDA data were discussed. Although the analysis by Blossom et al. (1988) was based on 48 census tracts out of 363, it used disaggregate HMDA data as its base which made for more conclusive results. The analysis attempted to study two control groups that had similar characteristics other than racial makeup. Table 2.1, illustrates the two communities used.

	Riverdale Park	Winship Community
Race	Predominantly White	Predominantly Black
Median Household Income	\$20,585	\$23,980
Median Assessed Home Value	\$27, 900	\$29,200
Average Age of Homes	43 years	43 years
Number of Housing Units	1,066	1,268
Home Loans (including banks & thrifts)	48%	18%

Table 2.1: Note: Illustrates the two neighborhoods used in a 1988 study by the Detroit Free Press. According to the study, home loan ratios were 2.72 white to 1 black from all sources and 4.77 white to 1 black from banks & thrifts. Source: Teresa Blossom, David Everett and John Gallagher, "The Race for Money." Detroit Free Press. (Jul. 24-27, 1988, p. 3A)

Blossom et al. used two communities for the analysis, Riverdale Park, which is predominately white and Winship Community, which is predominately black.

There are 1,066 single-family houses in Riverdale Park and 1,268 in Winship. Financial Institutions made loans per 1,000 houses nearly five times as often in Riverdale than in Winship. They received applications at a rate only 3.4 times greater in Riverdale Park than in Winship (Blossom et al., 1988, p. 3A).

The study did prove to be conclusive on a minuscule level of comparison because it attempted to disaggregate HMDA data. The methods used in Blossom's et al. (1988) article provided a clear picture of the problem, using a large set of aggregate HMDA data as its base. The problems encountered in the analysis of aggregate HMDA data found in the analysis done by Hula (1991) and Perle et al. (1994) was used as a guidepost in this analysis. This study avoided using national aggregated HMDA data as a basis for the statistical analysis to overt problems the aforementioned studies encountered. Instead, this analysis used raw HMDA data records as a basis and then aggregated these data to concise geographic units that corresponded to the study area, which consisted of 123 Minor Civil Divisions, MCDs.

There are various reasons why the practice of redlining continues. Due to the presence of subjective criteria in the mortgage process, such behavior is endemic to the situation and there is a greater potential for discrimination both consciously and unconsciously. The screening process for applicants is especially sensitive to subjective criteria, such as the applicants ability and willingness to repay (Fischl v General Motors Acceptance Corp., 1983).

As disclosed in a recent study, conducted by Weink (1992), discrimination is evident in all phases of the mortgage lending process. This particular study focused on

an audit of sale agents and their performance given different data on perspective financial purchases. The auditing technique allows for an in-depth analysis of the records and/or business practices of an organization which provides detailed qualitative and quantitative results that may not be obtainable through statistical analyses alone. As illustrated in Table 2.2, the sale agents involved reacted differently to home buyers according to their ethnicity and economic status. Stereotypical assumptions, such as ethnicity equals inability to repay, were made regarding given data (Weink, 1992). Although this study involved only one control group, it illustrated that the auditing technique is a useful tool in evaluating the opportunities that allow discriminatory practices to contaminate the lending process.

Control Group's Treatment of Home Buyers			
Regarding Financing by Race			
Agent's Information Regarding Financing	Whites Only %	Blacks Only %	Same Treatment %
Agent offered to help obtain financing	24.4	13.3	62.3
Agent said conventional fixed-rate financing available	32.7	11.1	56.2
Agent said adjustable-rate financing available	23.1	6.8	70.1
Agent said FHA/VA financing available	11.2	18.3	70.5

Table 2.2: Note: Illustrates the auditing technique of sales agents' reaction to home buyers and possible financing by ethnicity.

Source: Ronald E. Weink, "The Home-buying Process and Equality of Opportunity in Mortgage Credit Markets." Journal of Housing & Policy Debate. (1992: p. 219)

George Galster published an article in 1990 that relied heavily on auditing. The article focused on racial steering within the real estate industry. Racial steering is defined as sets of behaviors by a real estate agent that will direct a client toward a particular neighborhood and eliminate others based on the racial composition of the locality. The article details the audits of several large real estate firms in Cincinnati and Memphis. The study found that black auditors did not receive additional commentary within the process of home showings whereas white auditors were encouraged to consider areas with less than 10 percent black populations (Galster, 1990).

The article specifically identifies several reasons for the continuation of racial steering. These reasons include; agents may object to racial integration, agents may feel obliged to steer to meet the needs of their clients or retain them as clients and lastly, agents may steer because they feel white home sellers will not sell to a black client. These reasons illustrate why agents steer and they vary from direct segregation to assumptions of client desires (Galster, 1990).

The auditing technique does provide a microcosm of information that details the presence of discriminatory practices. In 1992, the Boston Federal Reserve Bank conducted a study that enlisted researchers to review more than 3,000 loan applications at 131 Boston lending institutions. The researchers were able to ascertain the actual applications which allowed them to include important variables (e.g. credit record, debt/equity ratios, employment, characteristics of property) that were previously unexamined. The researchers found that after taking into consideration these variables, black applicants were rejected 60 percent more often than whites with similar financial characteristics (Squires & O'Connor, 1993).

Although the auditing technique provides a great deal of information, such as debt/loan ratio and credit worthiness, it can be costly and time consuming. Thus, in many instances, especially for governmental policy and procedure, it may not be feasible as a constant monitoring tool. Instead, it could be used as an on-site test for companies with questionable business practices.

A study by Dunham and Jackson in 1993 examined two comparable Michigan cities, Lansing and Grand Rapids. The study mirrored a Chicago study conducted in 1991 which was sponsored by the same organization, The Woodstock Institute. The Chicago study was a larger undertaking which analyzed over 90 mortgage companies in the Chicago Metropolitan Area, which consists of six counties. The purpose of these studies were to uncover the roles of the lending institutions within their communities by comparing mortgage lenders and depository institutions and the market each fulfilled (Dunham & Jackson, 1992).

Data used in the Lansing and Grand Rapids report included nation-wide and the two cities market shares of both depositories and mortgage companies. For an in-depth analysis, mortgage lending patterns were separated by loan type, i.e. conventional and FHA/VA loans, for both Lansing and Grand Rapids. After they were separated, they were compared and statistically analyzed (Dunham & Jackson, 1992). The findings of the second report were very similar to those of the first, which confirmed their hypothesis.

Both reports found that mortgage companies have been supporting a diverse market. Service areas of mortgage companies are found in both the central city and the fringe areas unlike their depository counterparts. Lending patterns did not vary between predominately black and white areas for mortgage companies, whereas the

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depository institutions' patterns varied greatly. Dunham and Jackson's (1992, p. 61)

analysis found that:

for every 1,000 single-family properties, mortgage lenders in the Grand Rapids and the Lansing metropolitan areas would have made about forty-four mortgage loans in the black neighborhood, but about sixty mortgage loans in the comparable white neighborhood.

A common denominator throughout the report was that the number of FHA/VA loans were extremely high in ethnically diverse and lower income areas (Dunham & Jackson, 1992). The importance of this finding is that current political trends that harbor less government involvement may jeopardize a lending source available to ethnically diverse and lower income populations.

Redlining, Is it Profitable? If forms of redlining continue to exist, is the practice of redlining profitable? An analysis done by Squires and O'Connor in the Spring of 1993 did a comparison to find if lenders who practice redlining make more money than those lenders who do not. The study "examined the relationship between lender profitability and the percentage of their loans and loan dollars that are invested in the Milwaukee's central city and to racial minorities throughout the metropolitan area" (Squires & O'Connor, 1993, p. 83).

Squires and O'Connor chose Milwaukee because an analysis conducted by the Atlanta Journal Constitution in 1989 found that of black and white loan denial rates, Milwaukee had the highest presence of racial disparity in the country. In order to measure the profitability of redlining, Squires & O'Connor (1993, p. 90) "examined

lender profitability, lending activity in the central city, and for 1990, lending to black borrowers.”

A target area was designated that encompassed the outlying areas of the central business district which included 12 percent of Milwaukee’s population and 54 percent of the area’s minority population. The findings of the report were to the contrary of what was expected. The study concluded “that lenders who conduct a relatively greater amount of their business in predominantly white outlying neighborhoods are not more profitable than lenders doing a relatively greater amount of their business in predominantly minority and central city areas” (Squires & O’Connor, 1993, p. 99). This is an important conclusion. The results of the study illustrate that profitability is not compromised in predominately minority urban areas and lenders who perceive these risks are misled.

Insurance Redlining

In the late 1970’s, insurance redlining began to receive greater attention by the federal government, industry and academics. The difficulty of obtaining insurance and the extensive costs of insurance in urban areas was recognized as a growing problem and one that needed attention. As early as 1979, the link between securing homeowner’s insurance in order to obtain a mortgage loan was made. The National Commission on Neighborhoods concluded that the “availability of financial services is essential for the viability of any community. Efforts to revitalize declining urban

neighborhoods must incorporate provisions for securing adequate financial services” (Squires & Valez, 1987, p. 64).

The practice of insurance redlining has contributed to urban disinvestment. In 1987, a study on insurance redlining, published by Squires and Valez, further elaborates on the effects of such business practices when profitability is the primary focus. The statistical analysis found that “the racial effect remains substantial even after controlling for variables such as income level, poverty status, age of housing and turnover rates” (Squires & Valez, 1987, p. 73).

The methodology used in the Squires and Valez analysis of insurance redlining was comprehensive. The three data sets that were used in the Squires and Valez (1987) analysis were; the number of policies enforce by zip code for Milwaukee County, direct premiums earned and losses for the state of Wisconsin and 1980 census data of the demographics of the area. Some of the methods found in the Squires and Valez article are used to conduct the study of the Tri-County Region for this report.

Further study by Squires, Valez and Taeuber in 1991 offer further information on the problems of insurance redlining. This particular analysis used two data sets from the Milwaukee area which consisted of insurance agencies and neighborhood characteristics. The purpose of the study was first, to find if there was a suburban bias in the location of insurance agents and second, to find out if the location of these agents is associated with the ethnic composition of the neighborhoods.

After the statistical analysis was completed, the study concluded that (Squires, Valez & Taeuber, 1991):

race clearly is associated with agency location, and the effect of race remains significant even after accounting for the effects of income, housing condition, owner-occupancy and related neighborhood characteristics that presumably influence the location of insurance agencies. (p. 581)

The report further explained that “the racial effect is in part a result of the concentration of the metropolitan area’s minority population coupled with the industry’s emerging preference for suburban locations” (p. 580).

In December of 1994, the National Association of Insurance Commissioners (NAIC) published a report on urban insurance problems. The report was a result of an investigation conducted in response to several anti-redlining bills introduced in Congress. These bills were introduced after a publication by The Association of Community Organizations for Reform Now, ACORN, alleged discriminatory business practices within the insurance industry. Furthermore, a Presidential Executive Order in January 1994 called for the Department of Housing and Urban Development (HUD) to establish and develop a special unit to enforce regulations to combat property insurance discrimination. Following, in May of that same year, The National Fair Housing Alliance filed formal complaints with HUD against Allstate Insurance Group and Nationwide Insurance Group. The complaint alleged that these insurers discriminated against minorities in Chicago, Atlanta, Louisville and Milwaukee (NAIC, 1994).

In response to such scrutiny, the association conducted an extensive investigation with the objective of (NAIC, 1994, p. 8):

understand[ing] the dimensions of the insurance problems urban residents encounter, to analyze the relevant factors underlying the problems, and [to] develop for consideration the full range of public policy and regulatory measures and industry solutions that should be applied to address the problem.

Although the study included both the availability of automobile insurance and homeowner's insurance, the focus of this analysis will only discuss the findings related to the homeowner's insurance market. The analysis by the NAIC consisted of a nationwide data call to query insurance agencies' policies. This data call provided the raw insurance data used in the statistical analysis of this thesis. The NAIC's findings did mirror those of prior studies that illustrate discrepancies in the insurance market. The findings include (NAIC, 1994, p. 29):

the number of agent appointments in relation to the number of housing units appears to be strongly and positively correlated with income but there is no consistent pattern with respect to minority concentration.

This finding confirms an aforementioned study done by Squires & Valez of insurance redlining in Milwaukee which states "for insurance companies, the primary concern is profitability" (1987, p. 73).

Furthermore, the NAIC (1994) found that "average premiums are generally higher in low-income zip codes with greater than 50 percent minorities than in low-income zip codes with less than 50 percent minorities" (p. 30). In conjunction with this finding, average premiums also tend to increase with minority concentration,

although this pattern does not hold true in all cases. For example, for broad-coverage policies in low-income zip codes, the average premium increases from \$5.53 per \$1,000 in low-minority zip codes to \$7.21 per \$1,000 in high-minority zip codes (NAIC, 1994).

Overall, the NAIC's (1994) conclusions confirm findings done in prior studies.

These simple geographic comparisons tend to support general concerns about the availability and cost of property insurance coverages in urban areas. The availability of voluntary market coverage and the extent of insurance coverage appears to be lower in cities and lower yet within high-minority, low-income areas within cities. Non-renewal and cancellation rates also are higher in minority and low-income zip codes (p. 30).

As discussed in this literature review, there is a vast amount of related work on the subject. This paper proposes another perspective by incorporating part of the methods used in the Squires & Valez (1987) discourse on insurance redlining and testing HMDA data, utilizing multiple regression. Through the analysis of the Tri-County Region, an overview of the current magnitude of racial disparity in mortgage redlining and its relationship to homeowner's insurance is examined. Thus, identifying possible problems within the region that require further attention and analysis.

CHAPTER 3

Legislation and National Trends

In the late 1960's, the passage of national legislation served as a catalyst for addressing the scope of the problem of redlining. With the enactment of the Federal Fair Housing Act (FHA) in 1968, Home Mortgage Disclosure Act (HMDA) in 1975, and two years later the Community Reinvestment Act (CRA), the U.S. Government began to attack the issue of redlining legislatively (Canner & Smith, 1991).

National legislation, Michigan legislation and current problems are discussed in this chapter. A historical perspective on federal legislation like the Home Mortgage Disclosure Act (HMDA), the Community Reinvestment Act (CRA), the Equal Credit Opportunity Act (ECOA), and the Financial Institutions Reform, Recovery Act (FIRREA) explains the need for government involvement and the enactment of such legislation. A series of studies found in the Federal Reserve Bulletin on HMDA over a period of three years illustrates current problems nationally. This three-year trend provides information on the nation as a whole and offers a point of reference for the analysis done on the Tri-County Region.

Federal Legislation and Current Studies

Mortgage Redlining

The enactment of the HMDA, the CRA, and later the ECOA, were to address the illicit practices of financial institutions. In theory, these proposals seemed revolutionary; in practice, the acts provided quick-fix solutions to a vast problem.

The Home Mortgage Disclosure Act, introduced by Senator William Proxmire of Wisconsin and later passed by Congress, was (Canner & Smith, 1991, p. 860)

in response to concerns, that by failing to provide adequate home financing to qualified applicants on reasonable terms and conditions, some depository institutions have sometimes contributed to the decline of certain geographic areas.

By implementing the HMDA, required data on applicant approvals and denials would be used for (Canner & Smith, 1991, p. 860):

1. Help[ing] determine whether financial institutions are serving the housing needs of the communities in which they are located.
2. Providing information about the distribution of loan originations.
3. Households could better decide where to invest their savings.

After the HMDA was amended in 1989 by the Financial Institutions Reform, Recovery and Enforcement Act (FIRREA), data were used to identify a presence of discriminatory lending practices and help to enforce anti-discriminatory laws. The enactment of the FIRREA by Congress made more information public, including the background of the applicant. Another addition made possible by the FIRREA was the

inclusion of financial institutions that had not been considered prior to the amendment, such as non-depository lenders and thrift holding companies. The HMDA, after the implementation of the FIRREA, now encompassed a wider scope of financial institutions (Canner & Smith, 1991).

With the development of the Community Reinvestment Act (CRA), the federal government attempted to address some issues of mortgage redlining that HMDA ignored. The CRA attempted to further address the problem of mortgage redlining by (Canner & Smith, 1991, p. 876)

requir[ing] federal agencies to encourage depository institutions to help meet the needs of their communities, including low- and moderate income neighborhoods, consistent with safe and sound lending practices.

The CRA established a process using twelve criteria to evaluate the records of financial institutions to determine the presence of discriminatory practices. In conjunction with the HMDA, the CRA would serve as measure of performance for applicable financial institutions by the following criteria (Canner & Smith, 1991, p. 877):

1. The geographic distribution of the institution's credit applications, extensions, and denials.
2. The institution's record of originating or purchasing residential mortgage loans, housing rehabilitation credit, home improvement loans, and loans to small businesses and small farms within its community.
3. Evidence of prohibited discriminatory or other illegal credit practices.

In 1988, Congress passed the Equal Credit Opportunity Act. The ECOA, in conjunction with the Fair Housing Act comprises the Fair Lending Laws. These laws added strength to the HMDA (Taibi, 1994). However, this additional strength was not felt until FIRREA was enacted and expanded the information needed to be disclosed. With the addition of race and gender in these data, an in-depth analysis of the financial institutions' compliance with the federal regulations could be determined.

Though the development of these acts have aided in data collection, they have failed to address the entire scope of problem. Instead, legislation functions as a gauge of the problem through disclosure and additional policy that encompasses the entire spectrum of redlining and discriminatory lending practices by recognizing the sheer interdependence of the economy needs to be incorporated into current legislation. Although each of the acts do need improvements, they should not be faulted in their entirety, for they have provided an initial step in the right direction. This interdependent relationship needs to be further explored especially with insurance companies' role within the housing market.

Insurance Redlining

Currently, there is no federal legislation that directly regulates the insurance industry's role in redlining. Three steps have been taken by the federal government to regulate insurance underwriting practices, but are all dated. The first of these three steps is a Supreme Court Ruling in 1944, when the court "reversed its previous ruling

and held that the insurance business is engaged in interstate commerce and is subject to federal regulation” (Dunn v. Midwestern Indemnity, 1979, p. 1106). A year later the second step followed with the enactment of the McCarran Act. The Act “continued regulation and taxation by the states are in the public interest, but does not preclude federal regulation of the business of insurance” (p. 1107).

Later, Congress appointed a National Advisory Panel on Insurance in Riot-Affected Areas, after the riots of the 1960’s had taken its toll on America’s large cities. Amongst its findings, the Panel explained (Dunn v. Midwestern Indemnity, 1979, p. 1109):

Insurance is essential to revitalize our cities. It is a cornerstone of credit. Without insurance, banks and other financial institutions will not-and cannot make loans. New housing cannot be constructed and existing housing cannot be repaired. New business cannot be opened and existing businesses cannot expand, or even survive.

The third step, taken by the federal government, followed the Panel’s recommendations. As a result in 1968, the Urban Property Insurance Protection and Reinsurance Act (UPIPRA) was enacted.

UPIPRA sets forth the operating structure of the state FAIR plan. It does not expressly address the issue of discriminatory insurance redlining based on race. UPIPRA was enacted to protect private insurance companies from the risk of catastrophic losses which resulted from riots or civil disorders (Dunn v. Midwestern Indemnity, 1976, p. 1111).

Although the National Advisory Panel on Insurance in Riot-Affected Areas did make an important link between the need for insurance in solidifying a credit

transaction, nothing additional was done to regulate the role of private insurance.

UIIPRA simply set up the framework for state Fair Access to Insurance Requirements (FAIR) plans which continue in 31 states today.

The Federal Insurance Administration (FIA) was put in charge of running the riot reinsurance program and maintaining the state FAIR plans and, in 1974, the agency issued an important report on the performance of residual market mechanisms in addressing urban insurance availability problems. The FIA concluded that voluntary market and residual market mechanisms had failed to provide adequate availability of property and automobile insurance coverages to all insurable risks and it proposed an alternative “Full Insurance Availability” system which would address critical insurance needs (NAIC, 1994, p. 14).

The state FAIR plans continue to fulfill a market that is desperately needed.

Plans vary from state to state and are limited in coverage offered. State FAIR plans do not offer the same types of coverage as private insurance companies, which severely limit compensation to those affected. As further explained in a 1994 study by the NAIC, “the FAIR plan market share is positively related to minority concentration and negatively related to household income” (NAIC, 1994, p. 29). This illustrates that for the most part, minorities within urban areas are limited to state FAIR plan insurance, thus limiting compensation.

Michigan Legislation

Mortgage Legislation

In 1978, Michigan enacted Public Act 135 which added to the information lending institutions within Michigan needed to disclose regarding home mortgages.

The Act took federal legislation further by establishing a Financial Institutions Bureau

responsible for gathering and publishing these data submitted annually. The Act "require[d] state chartered institutions to provide a detailed account by census tract of the number of applications denied and the reasons for such denials" (Kanter & Nystuen, 1982, p. 310).

Michigan Public Act 173, The Mortgage Brokers, Lenders and Servicers Licensing Act, plays a role in redlining as well. Act 173 details what is required from such institutions by law. The Act "define[s] and regulate[s] mortgage brokers, mortgage lenders and mortgage servicers; prescribe[s] the powers and duties of the Financial Institutions Bureau" (Michigan Public Act 173, 1987, p. 1). Both acts worked in conjunction in regulating financial institutions by requiring further disclosure, to prevent mortgage redlining.

With the expansion of the HMDA through the FIRREA, Michigan amended the Act to eliminate the need for financial institutions submitting two reports. The expansion of the HMDA, to include details on the applicant such as race, gender and income, nullified the need for state legislation on such disclosure. The last annual report by the Financial Institutions Bureau was published in 1990. Michigan no longer saw the need for this reporting mechanism because new the HMDA data required sufficed (Michigan Financial Institutions Bureau, 1990).

Insurance Legislation

In response to federal state FAIR plans, Michigan enacted its own version entitled Michigan Basic Property Insurance in the early 1970's. Michigan Basic is one of the largest operating state FAIR plans in the country. Basically, Michigan Basic designed a pool, in which private insurance companies would pay fees according to their margin of profitability, in order to render services to individual property owners who were denied private insurance. Michigan Basic is a non-profit corporation that operates on the pooled resources and premiums charged to clients. There are no agents employed with Michigan Basic, instead if a client seeks insurance from a private agency and is turned down, that agent servicing the client applies for Michigan Basic and is retained as the agent for the property owner under a Basic Plan.

Although there are limitations, Michigan Basic has grown in size and policy coverage to meet the growing needs of those turned down for private insurance for various reasons including the simple location of the property owned. Three policies are offered through Michigan Basic and they are; basic fire, homeowner's package policy and fire of commercial buildings. As compared to private policies, Michigan Basic is severely limited and encourages clients to retain private insurance.

Mortgage Redlining As Current Problem in the U.S.

Amendments to both the HMDA and the CRA have made it possible to further analyze the practices of financial institutions. Additional information now required from both acts allow for more in-depth study. A series of analysis of 1990, 1991 and 1992 HMDA data found in three separate issues of the Federal Reserve Bulletin, clearly illustrate a trend of discrimination among financial institutions (Canner & Smith 1991, 1992, 1994).

The study published in the Federal Reserve Bulletin by Canner and Smith (1991,1992,1994), was conducted over a period of three years, and gathered HMDA data which was analyzed and extrapolated in several issues of the bulletin. For the three years studied, there were wide disparities between denial rates of whites and minorities. These data did not vary much over the course of the three year period.

Although the approval rate for loan applications was high for all three years; 72.3 percent in 1990 (Canner & Smith, 1991), 71.2 percent in 1991 (Canner & Smith, 1992) and 81 percent in 1992 (Canner, Passmore & Smith, 1994), a high proportion of the small percentage of denials were minorities.

In 1990, 16.6 percent of loan applications were denied. As illustrated in Figure 3.1, 16.6 percent were conventional loan denials. Of that 16.6 percent, 14.4 percent of white applicants were denied, whereas 33.9 percent of blacks and 21.4 percent

Hispanics were denied. Only 12.9 percent of their Asian counterparts were denied, which is approximately a third of the denial rate of their black counterparts (Canner & Smith, 1991).

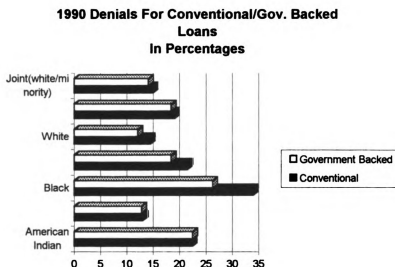


Figure 3.1: Note: 1990 Denials for both government backed and conventional loans for home purchases in percentages according to race. Source: Glenn G. Canner and Dolores S. Smith, "Home Mortgage Disclosure Act: Expanded Data on Residential Lending." Federal Reserve Bulletin. (1991: p. 870)

The figures for 1991 show an increase in overall denials at 18.9 percent which reflect changes in the economy. However, relative percentages of denial for minority applicants, as further illustrated in Figure 3.2, did not change drastically. Of the 18.9 percent of the denials, conventional loans, 17.3 percent were whites, but in contrast

37.6 percent were blacks and 26.6 percent were Hispanics. Again, the percent of Asians remained the lowest at 15 percent (Canner & Smith, 1992).

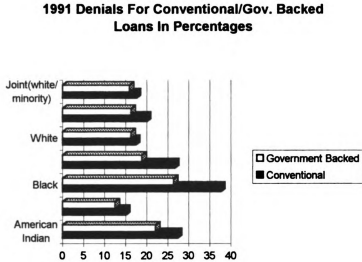


Figure 3.2: Note: 1991 Denials for both government backed and conventional loans for home purchases in percentages according to race. Source: Glenn B. Canner and Dolores Smith. "Expanded HMDA Data on Residential Lending: One Year Later." Federal Reserve Bulletin (1992: p. 808.)

As for 1992, denial figures on the whole dropped to 12.4 percent. Although there was a decrease in denials for blacks, relative to the decrease in white denials, the change loses its impact. As Figure 3.3 illustrates, 16 percent of whites were denied credit, while 36 percent of blacks and 27 percent of Hispanics were denied. Asian percent of denials did not change from 1991 at 15 percent (Canner, Passmore & Smith, 1994).

**1992 Denials For Conventional/Gov. Backed Loans
In Percentages**

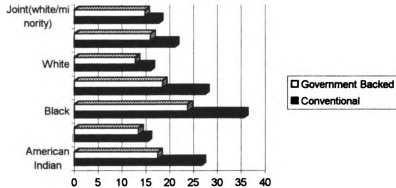


Figure 3.3: Note: 1992 Denials for both government backed and conventional loans for home purchases in percentages according to race. Source: Glenn B. Canner, William Passmore and Dolores Smith. "Residential Lending to Low-Income and Minority Families: Evidence for the 1992 HMDA Data." Federal Reserve Bulletin (1994: p. 86)

The disparity is found not only in conventional loans but in governmental backed loans as well. The disparity, though lower in numbers as compared with conventional loans, are proportional to the conventional loan figures and the racial characteristics of the applicant.

Although the series of studies in the Federal Reserve Bulletin by Canner and Smith did not specifically address the problem geographically, the data alone illustrates a trend of disparity according to racial characteristics. This study illustrates the value

of using HMDA data to find a presence of racial disparity. Thus, explaining the use of HMDA data in this thesis. The statistical analysis of the Tri-County Region's HMDA data will indicate if national trends are present locally.

Using HMDA data within a geographic region will help to specifically address the problems of redlining within an area. The integration of HMDA data and GIS, Geographical Information Systems* may offer a solution. This integration will enable the plotting of HMDA data to give a geographical representation of redlining.

There are other factors for denial of candidates, such as income. Generally speaking, the higher the income, the lower the probability of denial. In conjunction with this assumption, the argument can be made that minorities on average constitute a greater proportion of the population in lower income brackets; thus, they would be expected to be denied more often. However, the income status of applicants is unable to account for the entire disparity between the denial rates of minorities and whites. Within lower income brackets, discrimination still occurs. According to the 1991 study of the 1990 HMDA data found in the Federal Reserve Bulletin by Canner and Smith (1991), "among applicants whose incomes place them in the lowest income group, the denial rates for blacks, Hispanics and Asians were 40.1 percent, 31.1 percent and 17.2 percent respectively, compared with 23.1 percent for white applicants" (p. 870).

* *Geographical Information System* is a computerized mapping system that has the capability to store data separate from a drawing and use that data to produce a meaningful map for analysis (Arbeit, 1988).

A recent investigative report conducted by Loeb, Cohen and Johnson (1995) in U.S. News and World Report, further implicates the continual problem of redlining in America's cities. The investigation took six months and used nine sets of banking and insurance data which included over 24 million mortgage records.

An overview of the study's results is as follows (Loeb, Cohen & Johnson, 1995):

First, nearly 50 percent of poor and minority homeowners cannot obtain full property insurance and the few that do, pay approximately twice as much as their white counterparts in mostly white, middle-class areas. A ratio of \$7.21 per \$1,000 for high-minority, low-class areas to \$3.53 per \$1,000 for low-minority, middle-class neighborhoods. Second, although federal regulations are in place to encourage community investment, an increasing amount of banks are leaving impoverished areas. Third, even with current federal regulations, the survey revealed, much like the Federal Reserve Bulletin's study, that amongst mortgage applicants, discrimination remains. The denial rate was 37 percent for blacks while it was only 18 percent for whites.

In addition to these three main discoveries, the study discussed the problems with homeowner's insurance, which is a necessity in purchasing a home and the locations of banks within high minority areas. Taking these two factors into account, indications of redlining become more defined.

There is no current legislation that governs insurance agencies to guarantee fair business practices to its customers. The only remedy available is found through federal

civil rights violations, which is currently being used in the investigation of three insurance companies. Allstate, Nationwide Insurance Enterprise and State Farm are all under investigation by the Department of Housing and Urban Development.

Allegations range from higher costs in high-minority neighborhoods, which are over double in some cases, canceling insurance policies with little reason and denying those who have attempted to get insurance because of their location within a high-minority, low-income area (Loeb, Cohen & Johnson, 1995).

Additionally, the investigation looked at the location of bank branches within areas of high minority, low-income areas and found a great disproportionment. The study also focused on this factor in order to see if the financial institutions were meeting the needs of minorities, because most banks have a history of lending to those within the area of the branch service. On the following page, Table 3.4 illustrates cities with the greatest disparity of bank locations between high minority areas and high white areas. Although Detroit did not rank within the top twenty, access to full-service bank branches remain a problem in high-minority, low-income areas.

Bank Branches Per 10,000 Residents

	High White Neighborhoods	High Minority Neighborhoods	Ratio	Homes In Minority Areas	Share of Loans In Minority Areas
Rochester, NY	4.7	0.6	8 to 1	32%	15%
San Diego	2.6	0.4	7 to 1	25%	12%
Baltimore	5.9	1.2	5 to 1	56%	28%
Denver	2.9	0.6	5 to 1	34%	14%
Long Beach, CA	2.6	0.6	4 to 1	41%	27%
Cincinnati	7	1.6	4 to 1	22%	15%
Atlanta	9	2.1	4 to 1	60%	14%
St. Louis	3.7	0.9	4 to 1	44%	15%
Santa Ana, CA	2.6	0.7	4 to 1	72%	67%
Austin, TX	2	0.5	4 to 1	16%	3%
Orlando, FL	3.5	1	4 to 1	14%	3%
Chicago	2.2	0.6	4 to 1	50%	22%
Philadelphia	3.2	1	3 to 1	45%	20%
Memphis	3.2	1	3 to 1	43%	10%
Miami	16.2	5	3 to 1	88%	66%
Milwaukee	2.2	0.8	3 to 1	27%	11%
New York City	2.7	1	3 to 1	38%	24%
Honolulu	10.1	3.8	3 to 1	90%	85%
Sacramento, CA	3.4	1.4	2 to 1	35%	23%
Tucson, AZ	2.9	1.3	2 to 1	20%	7%

Table 3.1: Note: Cities with the greatest disparities between the number of bank branch servicing high white areas and high minority areas. Source: Penny Loeb, Warren Cohen and Constance Johnson. "The New Redlining." U.S. News & World Report (1995: p. 53)

CHAPTER 4

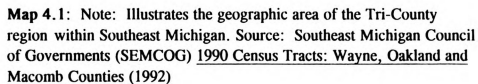
Data Analysis of the Tri-County Region

The following chapter will detail the geographic perspective of the three counties within the study area, explain the data and methodology used and discuss the results of the statistical analysis conducted.

Geographic Perspective of the Region

Since the Riots in the 1960's, Detroit has received a great deal of negative media attention. A presence of disinvestment is well known in Detroit's economy. This presence is one reason behind the designation of the city as an Empowerment Zone in 1995. This designation was to spark economic activity by providing federal and state funds for programs aimed at attracting business. Beyond the scope of matching funds and economic attractors, a large portion of urban disinvestment is revealed in lending and insurance patterns. This analysis examines the situation in order to evaluate the extent of mortgage redlining within the Tri-County Region.

The Tri-County Region includes Detroit proper and its surrounding communities. This geographic representation includes urban areas as well as suburban communities, which helps to give a broad perspective of redlining. (Map 4.1)



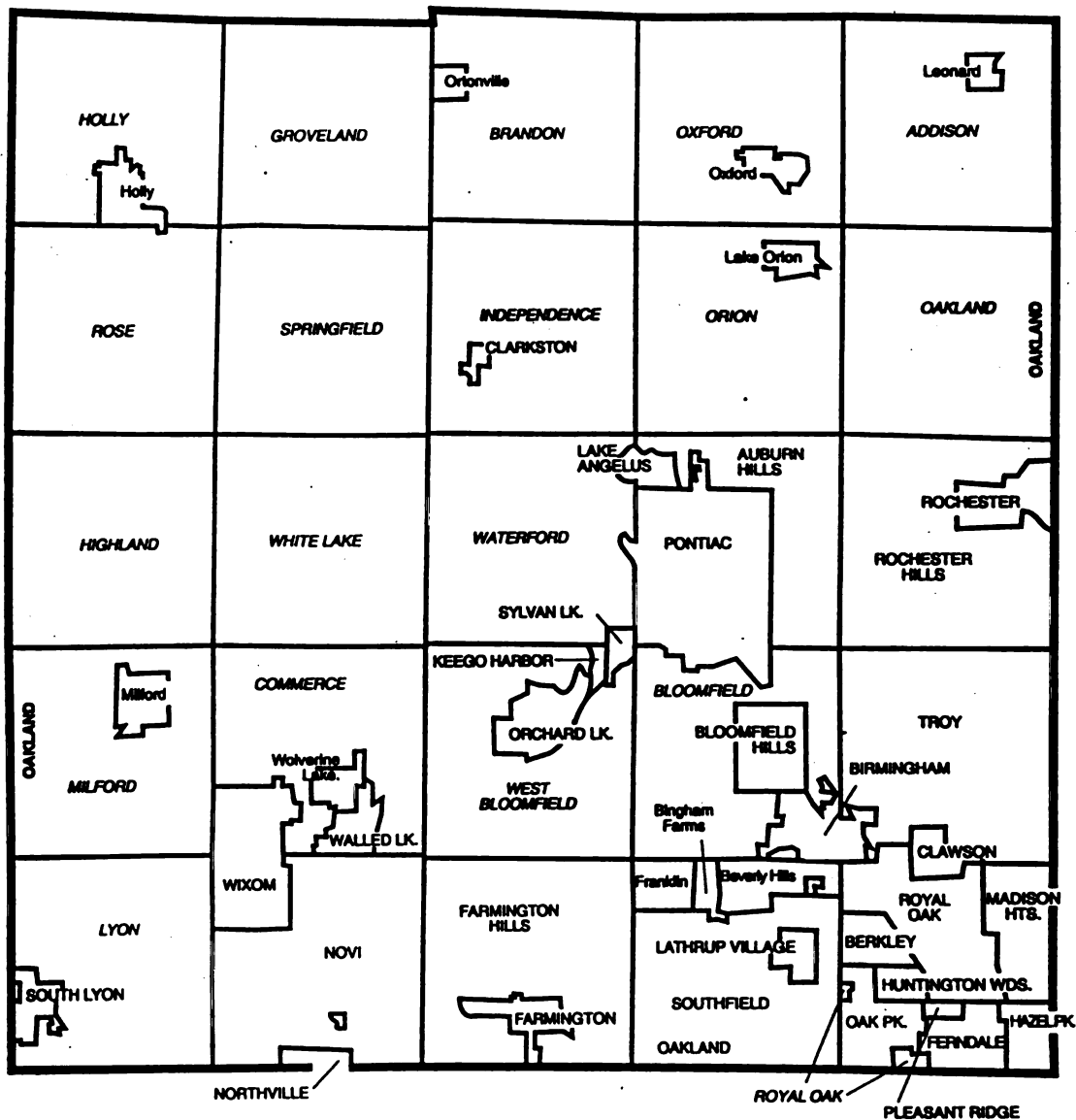
Wayne County is the most populated of the counties, within the region, with 2,111,687 residents. Of the three counties used in this study, Wayne has the largest black population of the three counties, with 40 percent of its population being black. It is the most urban and includes Detroit proper and immediate surrounding communities. (Map 4.2) The median household income for Wayne County, in 1989, was \$27,997 and is the lowest of the counties within the study area (SEMCOG, 1993).

Oakland County is the second most populated of the Tri-County Region, with 1,083,592 residents. Seven percent of the population is black. The county has experienced large suburban growth in the last decade and continues to grow. Oakland County is located to the northwest of Wayne County and includes many popular southeast Michigan suburbs. (Map 4.3) The median income for Oakland County in 1989 was the highest of the three counties at \$43,407 (SEMCOG, 1993).

Macomb County is the least populated of the Tri-County Region, with 717,400 residents. It also has the least black population of the three counties, with 1 percent black residents. Macomb County is located to the north of Wayne County and has experienced some suburban growth to the southern fringe and large growth in the central county region along M-59. For a geographic representation of the area,



Map 4.2: Note: Illustration of Wayne County geographic area.
Source: Southeast Michigan Council of Governments (SEMCOG)
and Wayne State University. 1990 Census Community Profiles for
Southeast Michigan. (1993, p. 150)



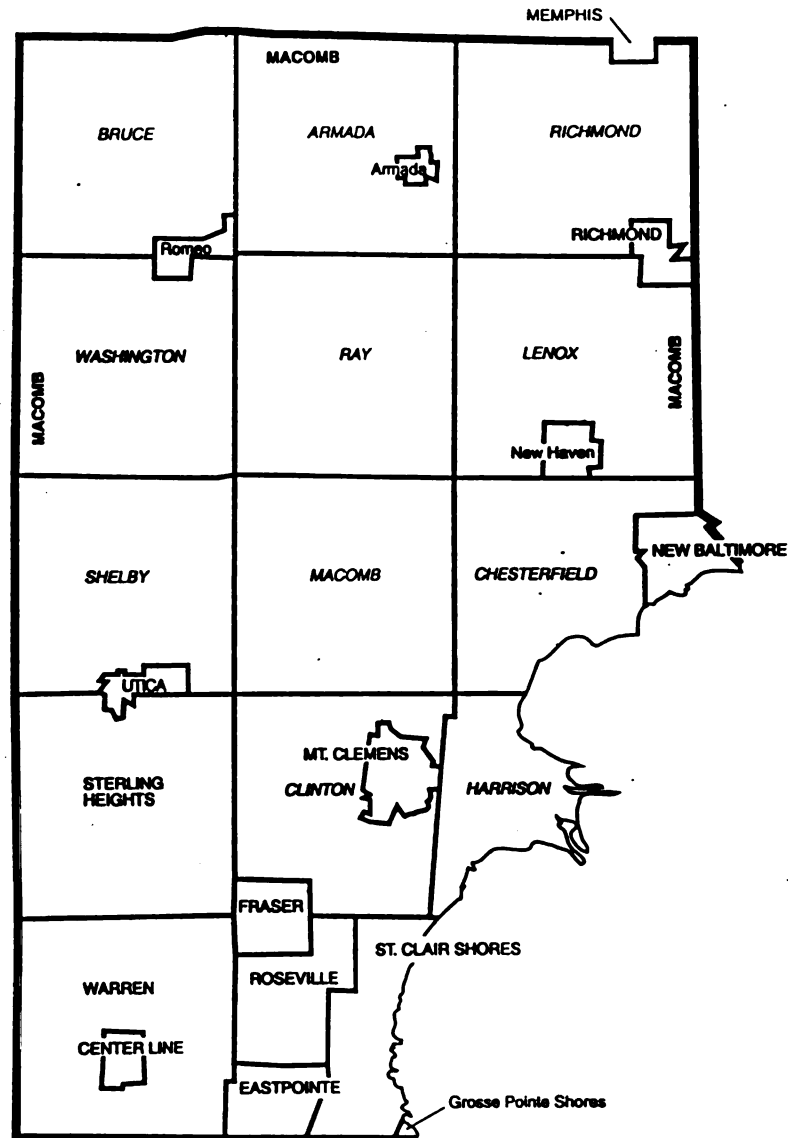
OAKLAND COUNTY

Map 4.3: Note: Illustrates Oakland County's geographic region.
 Source: Southeast Michigan Council of Governments (SEMCOG) and Wayne State University. 1990 Census Community Profiles for Southeast Michigan. (1993, p. 56)

please refer to Map 4.4. The median income for Macomb County in 1989 was \$39,931, falling right below Oakland County (SEMCOG, 1993).

Data and Methods

Data used in this analysis came from three different sources. First, 1992 HMDA data, published in 1993 and is the most recent data available, was gathered for the three counties. This data set included total number of mortgage loan applicants who applied for a loan in 1992 within the Tri-County Region, the percentage of black mortgage loan applicants', the percentage of mortgage loan applicant denials by racial extraction, and income on the applicant. These data are used to find a presence of racial disparity in lending patterns within the study area. The second data set was MCD demographic information from the Southeast Michigan Council of Governments. Data extracted from this source was the median income, percentage of black population and percentage of owner-occupied households for each minor civil division within the region. This served as a means of comparison of the average resident profile. Lastly, 1992 insurance data from the NAIC, which included number of policies enforce, number of cancellations and nonrenewals by insurer of voluntary market or private insurance and the percent of involuntary market or Michigan Basic Insurance by zip code was used.



MACOMB COUNTY

Map 4.4: Note: Illustrates the geographic region of Macomb County.
 Source: Southeast Michigan Council of Governments (SEMCOG) and Wayne State University. 1990 Census Community Profiles for Southeast Michigan. (1993, p. 2)

An explanation of the variables used in this analysis is as follows:

PCT 1: The percentage of white mortgage loan applicants' denied in 1992 within the Tri-County Region based on 1993 HMDA data.*

PCT 2: The percentage of black mortgage loan applicants' denied in 1992 within the Tri-County Region based on 1993 HMDA data.

PCT 3: The percentage of other mortgage loan applicants' denied, in this case includes all other minority extractions other than black, within the Tri-County Region based on 1993 HMDA data.

PCTOWN: The percentage of owner-occupied households for each MCD based on data from SEMCOG.

PCTINVOL: The percentage of involuntary market (Michigan Basic Insurance or state FAIR plan insurance) for the region based on 1992 NAIC insurance data.

PCTC: The percentage of private insurance or voluntary market insurance cancellations and nonrenewals by the insurer for the region based on 1992 NAIC data.

BLKPCT: The percentage of black population within each MCD based on data from SEMCOG.

DIFFINC: The percent difference between white and black mortgage loan applicants' incomes based on 1993 HMDA data.

DIFFDEN: The percent difference between white and black mortgage loan applicants' denied based on 1993 HMDA data.

REGDEN: The mean of all denied applicants for the region based on 1993 HMDA data

* Denials in this case included denials by financial institutions, withdrawn applicants and file closures for both conventional and government-backed loans. Thus leading to the same outcome of applications not approved.

In order to analyze the data successfully, insurance data by zip code and HMDA data by census tract was aggregated and put into common geographic units. Minor Civil Divisions or MCDs were chosen as the best common geographic unit for this analysis. A list of the 123 MCDs used in this analysis are included in the appendix of this thesis. Because minor civil divisions are used as a geographic unit by the census bureau, conversion of the HMDA data to MCDs was done with ease. The conversion of the insurance data by zip codes posed a slight difficulty. Using a MCD map with zip code boundary overlays of the three counties done by SEMCOG, these data were aggregated and converted into MCDs

Once data were aggregated to the same geographic unit, data sets could then be compared. To test for a significant difference between the means of white and black mortgage loan applicant denials a T-test was used. Thus, offering a preliminary indication of a presence of racial disparity. In addition to a T-test, correlation was used to find if this relationship was positive or negative. In order to identify specific relationships between the variables, multiple regression was used to test the HMDA data separately and then correlation was used to test the HMDA and insurance data.

HMDA Analysis

In order to obtain a schematic of current lending patterns, several statistical tests were conducted in an order and were used to build upon the results of the former tests conducted in this analysis. Correlation and T-tests were used to establish and clarify a relationship between the percent of black and white mortgage loan applicants' denied.

The correlation, further detailed in Table 4.1, was used to determine whether there was a positive or negative relationship between the percentage of white mortgage loan applicants' denied (PCT1) and the percentage of black mortgage loan applicants' denied (PCT2). The research hypothesis expected a negative correlation. This negative result would produce an absolute inversion and would indicate evidence of a totally racist market.

Table 4.1

Null Hypothesis	Research Hypothesis	Result
Ho: $r = \text{or} > 0$	H1: $r < 0$	$r > 0$

Note: Correlation conducted on PCT 1 and PCT 2

There was a significant positive correlation between the percentage of white mortgage loan applicants' denied and the percentage of black mortgage loan applicants' denied. The r value in this case was .3057. This means, as the number of white

mortgage loan applicants' denied increases, there is an increase in the number of black mortgage loan applicants' denied. This result indicates that there is no absolute inversion or evidence of a totally racist market but to note any presence of racial disparity, a T-test was conducted.

A T-test at 95% confidence level was used to compare the percentage of white mortgage loan applicants' denied and the percentage of black mortgage loan applicants' denied with the regional denial rate. This would compare the means of both percentages of white and black mortgage loan applicant denials and the regional denial mean. In the case of PCT1, illustrated in Table 4.2, it was hypothesized that PCT1 would fall below the region denial rate.

Table 4.2

Null Hypothesis	Research Hypothesis	Result
$H_0: PCT1 \geq REGDEN$	$PCT1 < REGDEN$	$PCT1 < REGDEN$

Note: T-test conducted on PCT 1 and REGDEN at a 95% confidence level.

It was expected that the percent white mortgage loan applicants' denied would be lower than the regional denial mean. As expected, the percentage of white mortgage loan applicants' denied was significantly lower than the regional denial rate.

As for PCT2, it was hypothesized that PCT2 would fall above the regional denial rate. This result was expected based on the aforementioned result of the percent of white mortgage loan applicants' denied falling significantly lower than the regional denial rate.

Table 4.3

Null Hypothesis	Research Hypothesis	Result
Ho: PCT2 \leq REGDEN	PCT2 $>$ REGDEN	PCT2 $>$ REGDEN

Note: T-test conducted on PCT 2 and REGDEN at a 95% confidence level.

The results indicate that the percentage of black mortgage loan applicants' denied was significantly higher than the regional denial rate. This clearly illustrates the anticipated racial disparity in the denial rates and further illustrates the discrepancies in lending patterns in the Tri-County Region.

In order to establish whether there was a significant difference between the denial rates of whites versus blacks within the region, a one-tailed T-test with a 95% confidence level was conducted. This test would further clarify any differences between the means of PCT 1 and PCT 2. It was hypothesized that PCT 1 would be significantly lower than PCT 2. Based on the presence of racial disparity thus far, the mean of the percentage of black mortgage loan applicants' denied within the Tri-

County Region would be expected to be greater than the mean percentage of white mortgage loan applicants' denied.

Table 4.4

Null Hypothesis	Research Hypothesis	Result
Ho: $PCT1 = PCT2$ or $PCT1 > PCT2$	H1: $PCT1 < PCT2$	$PCT1 < PCT2$

Note: One tailed T-test conducted on PCT 1 and PCT 2 at a 95% confidence level.

As anticipated, the result of the T-test illustrates that there is a significant difference between the denial rates of whites and blacks for the region and that white denial rates are significantly lower than those of black applicants. The t-value for this case is -5.27. In order to establish cause and effect of the discrepancies in the lending patterns, multiple regression was conducted.

Further analysis was done on the HMDA data for the Tri-County Region in order to examine the difference of denials between white and black applicants and if factors such as the difference of income between white and black mortgage loan applicants, black population, and percent owner-occupied households have an effect in

causing the disparities. The following equation illustrates the linear regression model used:

$$Y_i = a + b_1X_1 + b_2X_2 + b_3X_3 + e_i$$

Y_i = indicator of applicant denials

X = independent variable

a = constant

b_1 = regression coefficient

b_2 = regression coefficient

b_3 = regression coefficient

e_i = error/residuals

The following table illustrates the null hypotheses, research hypothesis and results of the multiple regression of the HMDA data for the Tri-County Region:

Table 4.5

Dependent Variable	Null Hypotheses	Research Hypothesis	Result
PCT1	BLKPCT = or < 0 DIFFINC = or > 0 PCTOWN = or < 0	BLKPCT > 0 DIFFINC < 0 PCTOWN < 0	BLKPCT > 0 DIFFINC < 0* PCTOWN < 0
PCT2	BLKPCT = or < 0 DIFFINC = or > 0 PCTOWN = or > 0	BLKPCT > 0 DIFFINC < 0 PCTOWN < 0	BLKPCT < 0* DIFFINC < 0 PCTOWN < 0
DIFFDEN	MEDINC = or > 0 DIFFINC = or > 0 BLKPCT = or < 0 PCTOWN = or < 0	MEDINC < 0 DIFFINC < 0 BLKPCT > 0 PCTOWN < 0	MEDINC < 0* DIFFINC < 0 BLKPCT < 0 PCTOWN < 0

Note: *Results with no significance from low t-values at 95% confidence level.

As illustrated in Table 4.5, there are rather significant results. It was expected that the lower the percent of white mortgage loan applicants' denied, the higher percentage of black population, the lower the difference of income, and the lower the percentage of owner-occupied households. The test results confirmed what was expected except for difference of income, which was insignificant. The results clearly indicate that the percentage of black population and percent owner-occupied households has an effect on the percent of white mortgage loan applicants' denied. The residuals

indicate a normal distribution and no statistical aberrations. Figure 4.1 illustrates the residuals for the multiple regression analysis on PCT 1.

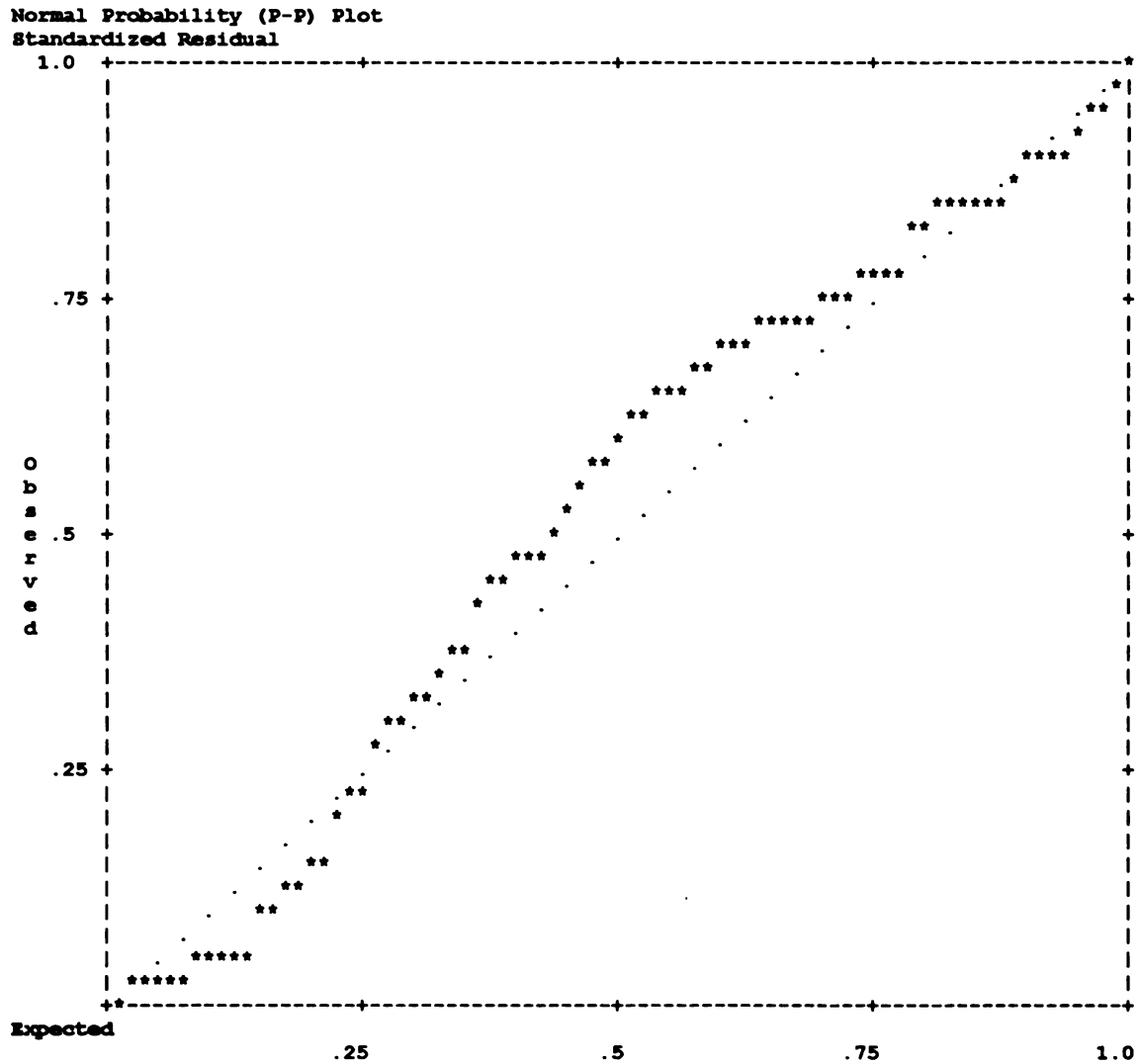


Figure 4.1: Note: Illustrates the residuals for the multiple regression analysis conducted on PCT1.

As for PCT2, it was expected that the lower the percent of black mortgage loan applicants' denied, the higher the percentage of black population, the lower the difference of income and the lower the percentage of owner-occupied households. The results illustrate that the lower the difference of income and the lower the percentage of owner-occupied units, the lower the black mortgage loan applicants' denied. As indicated by the result, the percent difference in income and percent owner-occupied units has a significant effect on the percent of black mortgage loan applicants' denied. An interesting result is that the percentage of black population remained insignificant. Thus, the percentage of blacks within this region does not factor into black applicant denial rates. Again, the residuals in this case indicate no statistical aberrations. Figure 4.2 illustrates the residuals for the multiple regression analysis on PCT2.

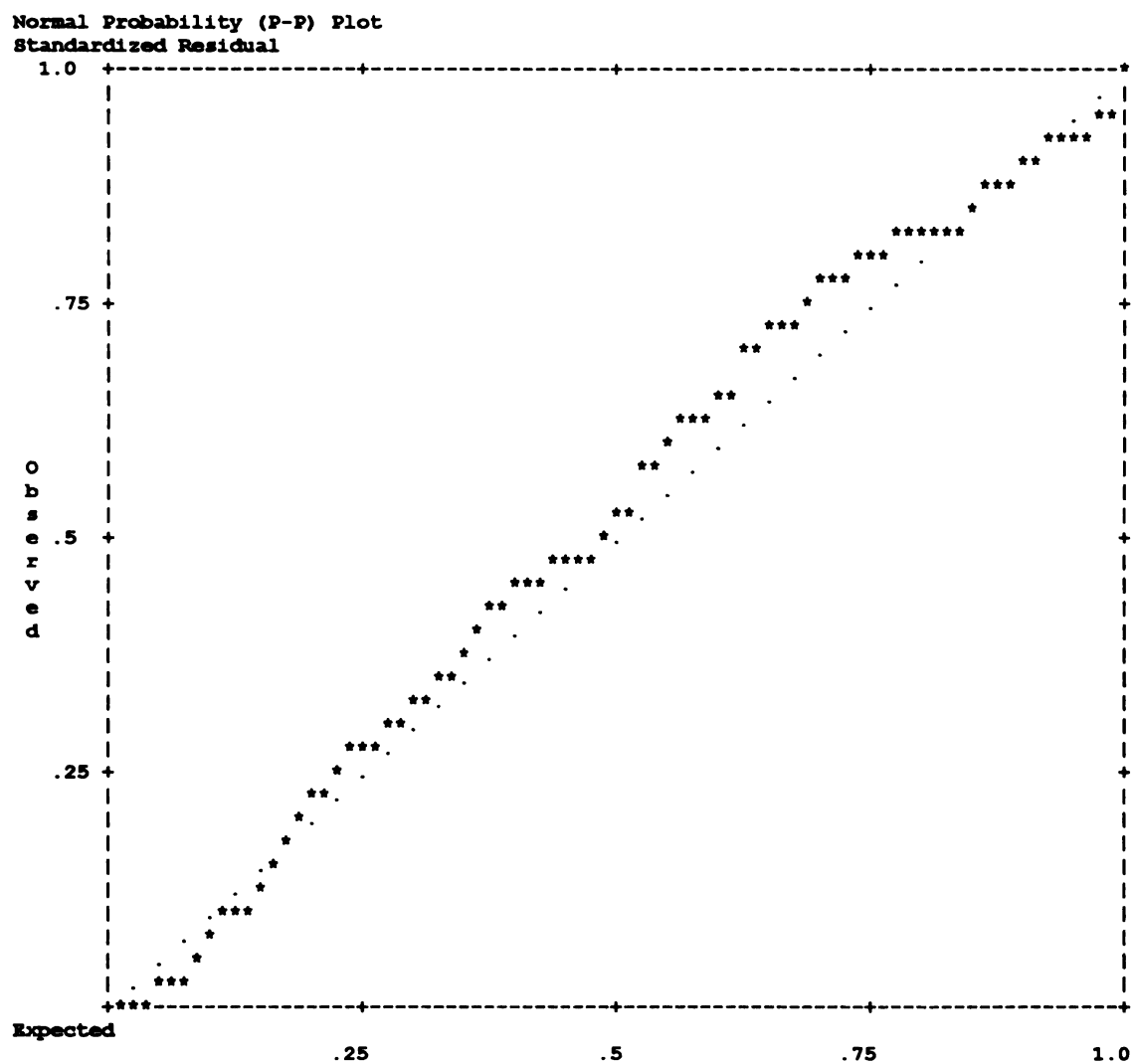


Figure 4.2: Note: Illustrates the residuals for the multiple regression analysis on PCT2.

In order to further examine the difference between white and black applicant denials, the difference between the two was taken and the factors of median income, difference of income, the percentage of black population and the percent of owner-occupied households were regressed on this difference. It was hypothesized that the lower the difference between white and black mortgage loan applicants, the lower the median income, the lower the difference of income, the higher the percentage of black population and the lower the percent of owner-occupied households.

The results of this test produced expected results. The results indicate that the percent difference in income between white and black applicants, the percentage of black population and the percentage of owner-occupied units have a significant effect on the percent difference between white and black applicants denied. Median income proved not to be a significant factor. Difference of income and percent owner-occupied were significant factors and were less than zero as expected. This explains that the lower the difference of income and percent owner-occupied, the lower the difference between white and black applicants denied. The percentage of blacks was expected to be greater than zero, but instead the opposite held true. The result was the null or the inverse in this case. This could be explained by the low black populations relative to the white population in both Oakland and Macomb counties. As found with the last two results, the residuals indicate no statistical aberrations. The residuals for this multiple regression analysis is found on the next page in Figure 4.3.

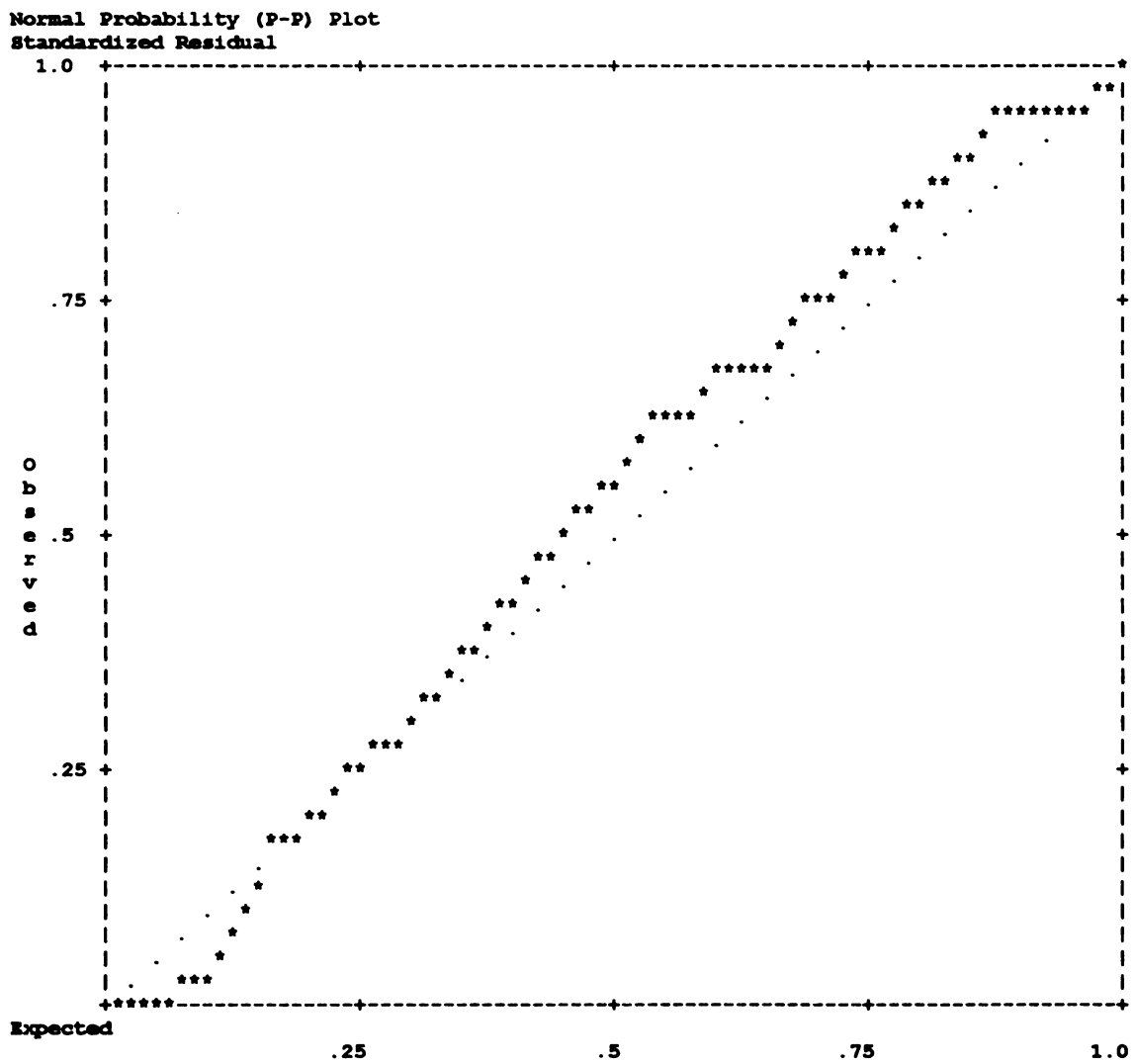


Figure 4.3: Note: Illustrates the residuals for the multiple regression analysis on DIFFDEN.

HMDA & INSURANCE ANALYSIS

Two correlation tests were conducted on insurance and HMDA data. The first correlation is used to find the relationship between involuntary market (state FAIR plan) and policy cancellations and non-renewals by the private insurer. Thus, the first hypothesis is that the higher the percentage of the involuntary market, there would be a higher the percentage of voluntary market (private insurance) cancellations and nonrenewals by the insurer. Table 4.6 expresses the null hypothesis, research hypothesis and the result.

Table 4.6

Null Hypothesis	Research Hypothesis	Result
Ho: $r = \text{or} < 0$	H1: $r > 0$	$r > 0$

Note: Correlation conducted on PCTINVOL and PCT C

There proved to be a positive correlation between the percent of involuntary markets or state FAIR plan areas and the percent of voluntary market cancellations and nonrenewals by the insurer. This confirms the notion that the higher the percent of involuntary markets, the higher the percent of cancellations and nonrenewals by private

insurers. The r value in this case was .578. This association clearly expresses that there is a problem obtaining and maintaining private insurance within these areas, once there is an influx of state FAIR plan insurance.

Does the relationship between homeowner's insurance and mortgage lending patterns have a significant impact on redlining in urban areas? The second correlation test used directly addresses this relationship. It was hypothesized that the higher the percentage of the involuntary market (state FAIR plan), there is a higher the percentage of black mortgage loan applicant denials.

Table 4.7

Null Hypothesis	Research Hypothesis	Result
$H_0: r = \text{or} < 0$	$H_1: r > 0$	$r > 0^*$

Note: Correlation conducted on PCTINVOL and PCT 2

*Result was not significant.

The final correlation test produced interesting results. Although there was a positive correlation the results were not significant. The r value in this case was .0396. There are many factors that could explain this result. Low percentages of black population within both Oakland and Macomb counties may be a factor and areas of involuntary markets are high in some rural areas of the region where there is low percentages of blacks.

Summation

Overall, the statistical analysis conducted on the Tri-County Region produced interesting results. Most of the results were expected and found to be significant in proving the main hypothesis of this thesis, which is that there is a significant degree of mortgage redlining. Although there was not a significant relationship between mortgage redlining and the percent of involuntary market or state FAIR plan, results indicate problems in obtaining and maintaining private homeowner's insurance in areas with a predominance of state FAIR plan insurance. These data clearly illustrate that there continues to be a disparity between whites and blacks within mortgage lending patterns. There also remains a significant difference between white applicants denied and black applicants denied. The residuals clearly indicate no statistical aberrations. Thus, confirming racial disparities in the Tri-County Region.

Various factors continue to play a role in the denial of blacks. The difference of income, the percentage of black population and percent owner-occupied households all significantly effect the denials of blacks. Lending patterns within the Tri-County area do show problems that are reflected by the nation. Denial rates continue to be where most of the disparity between white and black applicants are found.

Correlation conducted on the percentage of involuntary markets and voluntary market cancellations and non-renewals by the insurer clearly show a positive relationship. This confirms the NAIC's findings that there is a problem obtaining

private insurance in urban areas and voluntary market cancellations and nonrenewals by the insurer are partly responsible for this problem.

As for the hypothesis, that there is a relationship between homeowner's insurance and mortgage lending patterns, the results produced from the correlation analysis were not conclusive. Although a positive correlation was generated, the r value was insignificant. Thus, there may be other factors that lend itself to this relationship. Additionally, the low-black populations in Macomb and Oakland counties may have been a factor in producing insignificant results.

Analytical Limitations

There are limitations to the statistical analysis of the Tri-County Region. These limitations are not formidable but do need to be recognized. First, homeowner's insurance data used in this analysis was from a nationwide data call by the National Association of Insurance Commissioners, NAIC, as opposed to a neutral party. This was the only insurance data available because insurance companies are not required by law to disclose information. Furthermore, data from the NAIC were aggregated by zip codes and in order to be statistically analyzed it needed to be converted into Minor Civil Divisions or MCDs, which may have introduced a small percentage of error.

Another problem encountered in the analysis of the Tri-County Region, is that HMDA data does not include credit worthiness because it is difficult to quantify.

However, the auditing technique does allow for the inclusion of credit worthiness in its analysis. It is suggested that statistical analysis, like the one conducted in this thesis, is used to give a schematic of problem areas and then mapping residuals will give a geographic scope the problem. After the generation of maps, spot check audits could be conducted to target questionable business practices prevalent in an area.

Lastly, this study does not separate loan types. FHA/VA loans were factored into the total number of denials. It is suspected that the greatest disparities lie in conventional loan denials. Further study that builds upon this analysis using a separation of loan types could detail the disparity between them.

Chapter 5

Discussion and Conclusions

Visualize a beautiful home and the hopes of a young couple as they enter a lending institution to secure an investment. Results of this analysis clearly indicate that their opportunity for denial in the Tri-County Region increases because they are black.

Despite legislation designed to combat mortgage redlining, this study clearly illustrates a presence of racial disparity in mortgage lending denial rates in the Tri-County Region. There is a significant degree of redlining present and difficulty in obtaining and maintain homeowner's insurance parallels. Tests proved a significant difference between the percentage of white mortgage loan applicants' denied and the percentage of black mortgage loan applicants' denied. Black mortgage loan applicants were significantly denied more often than their white counterparts. These results confirm discriminatory practices by the private sector.

Racial disparity in mortgage lending patterns and insurance redlining affects the entire economy.

Although the racial dimension is among the most pressing and morally repugnant aspects of community disinvestment, the eroding job base, the small business credit crunch and the globalization of capital are problems that affect all Americans. These issues are racial but they require more than racial solutions (Taibi, 1994, p. 1470).

This is key in addressing the problem of redlining. Reformulating the problem based on geography in relation to racial characteristics cannot be the only remedy in this case because of the sheer interdependence of the economy.

Additionally, problems keeping with the spirit of the law become apparent when analyzing the mechanisms used in the CRA rating process. Currently,

banks are rated on 12 factors. Only three have anything to do with where loans are actually made [and] whether banks locate branches in poor neighborhoods. Three other rating factors relate only to paperwork. Banks are thus assessed, for example, on the quality of their brochures they publish about their lending philosophy (Loeb, Cohen & Johnson, 1995, p. 58).

Based on these factors, the CRA has become a measure of marketing to a target audience, instead of measuring true indicators of redlining. Eugene Ludwig, comptroller of the currency, concedes the point: "What the law asks us to evaluate is 'Are you meeting with the community? Are you advertising to the community'" (Loeb, Cohen & Johnson, 1995, p. 58).

This further explains how financial institutions continue practices of redlining and maintain satisfactory CRA ratings.

One bank asked the FDIC for a favorable CRA rating because some of its employees participated in a community window-washing project; the FDIC approved the request. Another bank asked the Federal Reserve for high CRA rating, in part because it established a \$60,000 line of credit for local businesses to purchase Girl Scout cookies. The Fed commended the bank for the effort (Loeb, Cohen & Johnson, 1995, p. 58).

These are only a few examples of how financial institutions can elude the requirements of the CRA.

This interdependence of the economy is why the current acts have not effectively addressed the problem. "These two prevailing civil rights paradigms cannot address the structural nature of disinvestment, because they implicitly accept a neoclassical economic ideology that is incompatible with genuine reform" (Taibi, 1994, p. 1467). It is recognized that any forced acceptance of investment does not help the economic well being of the community as a whole. This specifically addresses the affirmative action argument as relating to lending practices of institutions. To what extent are lending institutions socially responsible to their community?

Social responsibility is an important factor in harboring the essence behind the CRA. There is always an expected risk in lending, thus the use of variable interest rates. To what extent are such risks "real" or "inculterated"? This extent varies according to the philosophy of the lending institution as well as society's expectations.

However, the problem with this argument is that discrimination is found even when the loan may be risky. Data found in the series in the Federal Reserve Bulletin clearly indicates that when applicants fall into the lowest income levels, a greater percentage of whites are approved, whereas their minority counterparts are not. The results, in this analysis, of the T-test between white mortgage loan applicants' denied and black mortgage loan applicants' denied for the Tri-County Region clearly show a significant difference between the two with white denial rates significantly lower than

black denial rates. Again, this is where subjective criteria interplays with real or imagined risks associated with race.

The study by Squires and O'Connor (1993) confirmed that lenders who do redline are not any more profitable than those who do not practice redlining. This is an important conclusion because it directly addresses this subjective criteria interplayed with real or imagined risks associated with race. This conclusion clearly illustrates the perceived risks of lenders, who avoid lending in predominately minority urban areas, are greater than reality.

The problem that has occurred with using civil rights as a focal point in solving the problem of redlining is that it is easy to lose sight of the big picture. If an individualistic approach is not a viable solution, because of the interdependence of the economy, then a civil rights approach, in conjunction with policy that addresses the economic vitality of the community, is the best alternative.

The effects of these acts on small lending institutions may be detrimental. Although banks offset the risk of loans through interest rates, small lending institutions cannot afford to take high risks on limited resources. What has been found with the recent expansion of the HMDA is that many small banking institutions have suffered because of the lack of resources to meet the requirements of these acts. Large lending institutions have absorbed the impact and have also taken advantage of these small lending institutions closing down by either buying them out or eliminating the

competition. Therefore, keeping in mind that one of the most efficient ways of harboring the CRA within the community is to promote the vitality of small lending institutions in the community. Provisions in the development of policy that specifically addresses these small lending institutions is necessary.

In addition to current financial institutions, homeowner's insurance companies should be held responsible for fair business practices. Currently, there is no legislation regulating the homeowner's insurance industry and its affects on redlining. Insurance companies are directly involved because in order for a home mortgage to be processed homeowner's insurance is required. As proved in the correlation analysis between the percentage of involuntary markets and the percentage of voluntary market cancellations and nonrenewals by the insurer there is a problem with the availability of private homeowner's insurance. This availability problem is present in obtaining and maintaining homeowner's insurance which directly affects the financial security of the applicant and his/her community.

Michigan has one of the largest state FAIR plan insurance programs in the country, yet it still has problems as illustrated in this analysis of the Tri-County Region. Insurance companies should be held responsible for fair business practices. Although increased governmental regulation is not popular, disclosure should be mandated to obtain a perspective of the problem. The NAIC has admitted there is a problem with the availability of insurance within urban areas and has confirmed it

through independent statistical tests. However, they do not recommend disclosure because of costs. Large financial institutions have had no problems meeting the cost of disclosure, the insurance industry should not. Furthermore, at the cost of those unable to obtain insurance, profitability remains the industries primary focus. This is confirmed by the study done by the NAIC (1994) and a study done by Squires and Valez (1987).

Current legislation does require reform and change is needed in order to perpetuate economic vitality in needed areas. Current legislation has been useful in gathering extensive raw data to gauge the problem of mortgage lending. As seen in the data found in the 1991, 1992 and 1994 issues of the Federal Reserve Bulletin, little has changed over the course of 1990, 1991 and 1992 (Canner & Smith, 1991, 1992, 1994). Due to the value of the HMDA data and the CRA ratings, it becomes clear that proposed legislation that would eliminate 88 percent of financial institutions currently regulated by the CRA would be detrimental.

The issue of redlining is problematic because of the wide variety of elements that create the interdependence of the economy. Financial institutions do have a social responsibility to their community because they are federally insured by tax dollars. However, in order to stay in business, they cannot be expected to practice "altruistic" lending in every case proposed. Incentives for small lending institutions within the community to invest and remain in their area will help to off-set some of the costs of

these acts. Policy that considers how to curtail the extensive denial rates of minority applicants will also help to address the problem holistically.

Administrative reactions to financial institutions' compliance with these acts have proven to be the most acceptable process by both the federal government and the courts. However, to expedite the compliance of lending institutions, the process needs to be accelerated through implementing advanced technological systems that can handle the volume of data generated. In addition, the acts themselves need to be amended to clarify when legal action should be taken and if damages are appropriate to further compliance of lending institutions. Furthermore, integrating current HMDA data and geographic databases, like GIS, will help to incorporate a clear geographical picture of affected areas. Administering the same requirements to insurance companies and mandating data be gathered by census tracts and blocks, as HMDA data is required, will help to measure current problems and implement regulation.

Further study which includes a larger sample of data and a separation of loan types would help to specify problem areas. This separation of loan types will illustrate if problems lie in conventional loans or in FHA/VA loans. It is expected that there are significant problems with minorities obtaining conventional loans. Auditing bank procedures and analyzing bank locations relative to urban areas would show if financial institutions within the region are living up to their CRA commitment and to clarify applicant credit worthiness. Future study should also include mapping the residuals

from the multiple regression analysis to give a geographic representation of problem areas to target.

Additionally, analyzing bank branch ratios and homeowner's insurance patterns will further reveal the effects of qualitative factors on redlining. It has been shown that these factors have had an effect but more research needs to be conducted in order to expose the extent of the problem. Homeowner's insurance providers have been ignored in this respect and there is no current legislative remedy. Legislators and the public need to be aware of the adverse effects of homeowner's insurance companies' dubious practices involving redlining.

Legislation that promotes disclosure would make it possible to conduct larger studies on insurance redlining. The data disclosed should also conform to census tract geography which would make it easier for larger studies to take place. Currently, the industry uses zip code boundaries to aggregate information. This makes it very difficult to transfer the data if the study area is any larger than used in this analysis.

The positive association found between the percentage of involuntary markets (state FAIR plan) and the percentage of voluntary cancellations and nonrenewals by the private insurer, clearly illustrate a lack of availability of insurance for those within involuntary markets. These results confirm studies done by the NAIC (1994) and Squires and Valez (1987). This lack of availability of insurance for those within urban

areas confirmed by such studies should promote the need for disclosure and further study.

Subsequent hypotheses further proved there is a significant degree of redlining within urban areas. There is a significant disparity between the denial rates of white and blacks. Residuals in all cases show no statistical aberrations. Thus, the results are conclusive and preclude the need for further study and reform. However, complete elimination of government involvement is not the answer. As seen by the abuse of insurance companies, government regulation is needed to ensure fair business practices. Regulations that address the entire spectrum of the problem would be best suited. Although government involvement has lost popularity, this proposes to be the best method of curtailing redlining.

Awareness is the key. Discrimination has not disappeared with the 1960's. The results confirm the need for constant monitoring and disclosure by both the mortgage and insurance industries. Holding the private sector responsible for dubious practices should be consistent.

Historically, the U.S. government has reacted to the problem of redlining through legislation. In order to further address the problem holistically, proactive measures will prove to be best in clarifying current standards. Due to the interdependence of the economy, redlining has proven to deteriorate the economic

vitality of some areas. This deterioration effects the entire economy. Therefore, continued efforts at curtailing this social enigma will prove to benefit all.

APPENDIX A

Minor Civil Divisions Used in this Analysis

Allen Park	Harrison Twp	Ray Twp
Armada	Hazel Park	Redford Twp
Auburn Hills	Highland Park	Richmond
Belleville	Highland Twp	Richmond Twp
Berkley	Holly	River Rouge
Beverly Hills	Holly Twp	Riverview
Birmingham	Huntington Woods	Rochester
Bloomfield Hills	Huron Twp	Rochester Hills
Bloomfield Twp	Independence Twp	Rockwood
Brandon Twp	Inkster	Romeo
Brownstown Twp	Keego Harbor	Romulus
Bruce Twp	Lake Angelus	Rose Twp
Canton Twp	Lake Orion	Roseville
Centerline	Lathrup Village	Royal Oak
Chesterfield Twp	Lenox Twp	Royal Oak Twp
Clarkston	Leonard	Shelby Twp
Clawson	Lincoln Park	South Lyon
Clinton Twp	Livonia	Southfield
Commerce Twp	Lyon Twp	Southfield Twp
Dearborn	Macomb Twp	Southgate
Dearborn Hts.	Madison Hts	St Clair Shores
Detroit	Melvindale	Sterling Hts
East Detroit	Milford	Sumpter Twp
Ecorse	Milford Twp	Sylvan Lake
Farmington	Mt. Clemens	Taylor
Farmington Hills	New Baltimore	Trenton
Ferdale	New Haven	Troy
Flatrock	Northville	Utica
Franklin	Northville Twp	Van Buren Twp
Fraser	Novi	Walled Lake
Garden City	Oak Park	Warren
Gibraltar	Oakland Twp	Washington Twp
Grosse Ile	Orchard Lake Village	Waterford
Grosse Pointe	Orion Twp	Wayne
Grosse Pointe Farms	Ortonville	West Bloomfield
Grosse Pointe Park	Oxford	Westland
Grosse Pointe Shores	Oxford Twp	White Lake Twp
Grosse Pointe Woods	Pleasant Ridge	Wixom
Groveland Twp	Plymouth	Wolverine Lake
Hamtramck	Plymouth Twp	Wood Haven
Harper Woods	Pontiac	Wyandotte

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