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Disinvestment and Suburban Decline

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ABSTRACT

Beginning in the mid-1970s, U.S. suburbs started to experience many of the same problems typically associated with earlier inner-city decline including accelerating income decline, increasing family poverty, falling housing prices, growing income polarization, escalating crime, and increasing racial and ethnic diversity.

Conventional wisdom often lays the blame for neighborhood decline on who moves in and who moves out. This is understandable, as neighborhood migration is easily observable. It is the hypothesis of this research, though, that the less visible disinvestment of capital from suburban neighborhoods is an initial cause of suburban decline that precedes and coincides with the more observable physical, social, and economic indicators of decline.

Neil Smith's theory of gentrification provides the theoretical foundation for this dissertation. It is the effect of disinvestment that leads to a drop in both house value and in the capitalized ground rent, as reflected in declining relative sale prices and rents. Lower-income persons are often drawn to purchase homes or rent apartments in these declining neighborhoods, as they are more affordable compared to newer neighborhoods. This research applies Smith's theory to the Minneapolis-St. Paul region to determine is relevance in explaining suburban decline from 1980 through 2010. This analysis found disinvestment from inner suburbs, and that disinvestment increased and accelerated during the period of analysis. Although inner suburban disinvestment did not uniformly occur at the same time, and the geography of disinvestment took on a more sectoral rather than uniform pattern.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF MAPS

LIST OF TABLES

RESEARCH PROBLEM

Suburbs are in decline. Beginning in the mid-1970s, U.S. suburbs started to experience many of the same problems typically associated with earlier inner-city decline (Bier, 2001, p. 1; Bollens, 1988, p. 283; Caris, 1996, pp. 1–2, 32; Culver, 1982, pp. 3–12; Downs, 1973, p. 1; Hanlon & Vicino, 2007, pp. 252, 270; Jargowsky, 2002, pp. 39-71; Listokin & Beaton, 1983, p. 4; Orfield, 2002, p. 7; Short, Hanlon, & Vicino, 2007, pp. 646, 653). Suburbs are experiencing accelerating income decline, increasing family poverty, falling housing prices, growing income polarization, escalating crime, and increasing racial and ethnic diversity (Berube & Frey, n.d., p. 1; Fernandez & Pincus, 1982, p. 93; Green Leigh & Lee, 2005, p. 28; Green Leigh & Lee, 2007, p. 146; Hanlon, 2008, pp. 429–433; Hanlon, 2010, pp. 12–27, 45–46; Kneebone & Garr, 2010, p. 1; Lucy & Phillips, 2000, p. 170; Lucy & Phillips, 2006, pp. 93, 112–116, 159; Orfield & Luce, 2010, p. 45; Puentes & Warren, 2006, pp. 5–10; Swanstrom, Casey, Flack, & Dreier, 2004, pp. 4–10). While most declining suburbs were inner suburbs adjacent to their central city, suburbs experiencing relative income decline tended to group together spanning inner, middle, and outer suburbs (Lucy & Phillips, 2000, pp. 172–173; Lucy & Phillips, 2006, pp. 93, 101).

Studies of suburbs in the Minneapolis–St. Paul metropolitan region show a similar experience. Between 1980 and 2000, 15 (12%) of 125 suburbs experienced declining population, declining income, and increasing poverty (Hanlon, 2008, p. 436). Lucy and Phillips (2006, pp. 97, 132) found that between 1980 and 2000, 16 (17%) of 96 suburbs declined in population, and 44 (46%) declined in median family income. Orfield (2002, p. 35) classified 107 (33%) of 324 suburbs in the Minneapolis–St. Paul

region as at risk, meaning that these suburbs suffer from a decreasing financial capacity to address rising social needs. Declining suburbs were found adjacent to one of the central cities, and particularly in the Northwest and South or in the rural areas of the counties (Orfield & Luce, 2010, p. 44).

Conventional wisdom often lays the blame for neighborhood decline on who moves in and who moves out (Caris, 1996, p. 5; Caris, Wyly, & Smith, 2001, p. 497). This is understandable, as neighborhood migration is easily observable. But it is the hypothesis of this research that the less visible disinvestment of capital from suburban neighborhoods, like the inner-city neighborhoods before them, is an initial cause of suburban decline that precedes, and coincides with, the more observable physical, social, and economic indicators of decline (Caris, 1996, pp. 3–4, 32).

The theoretical foundation of this research is Neil Smith's theory of gentrification, known also as rent gap theory. Originally developed to explain inner-city gentrification, Smith's theory says that capital disinvestment leads to neighborhood physical, social, and economic decline and is a precursor to gentrification (Caris, 1996, pp. 3–4, 32; Smith, 1996, p. 67). The purpose of this study is to identify, describe, and theorize the existence of capital disinvestment in suburban cities in the Minneapolis–St. Paul metropolitan area from 1980 to 2010 as a significant contributing factor to suburban decline.

ADVANCING THE SCIENTIFIC KNOWLEDGE BASE

The research regarding suburban decline appears to be mostly descriptive, focusing on identifying its characteristics and location (Berube & Frey, n.d., p. 1; Fernandez & Pincus, 1982, p. 93; Green Leigh & Lee, 2005, p. 28; Green Leigh & Lee,

2007, p. 146; Hanlon, 2008, pp. 429–433; Hanlon, 2010, pp. 12–27, 45–46; Kneebone & Garr, 2010, p. 1; Lucy & Phillips, 2000, p. 170; Lucy & Phillips, 2006, pp. 93, 112–116, 159; Orfield & Luce, 2010, p. 45; Puentes & Warren, 2006, pp. 5–10; Swanstrom et al., 2004, pp. 4–10). This research adds to the body of work that attempts to better understand the causes of decline, specifically suburban decline. This research builds on and expands Caris's (1996) earlier work, the only other application of Smith's theory to a suburban geography, by applying Smith's theory to the suburbs in the Minneapolis–St. Paul metropolitan area which covers approximately 190 suburbs in seven counties.

This research is relevant for public policy makers at the local, regional, state, and federal levels, as decline can have significant effects on local government service delivery as well as families and individuals. Depending on the level and concentration, decline places added fiscal stress on municipalities, school districts, and counties as the demand for services increases while the financial ability to meet these needs decreases (Orfield, 2002, p. 35). At the more extreme end of decline are significant concentrations of poverty that can have substantial effects on individuals and families that live in these neighborhoods (Jargowsky, 1997, pp. 1, 4; Orfield, 1997, p. 18; Orfield & Luce, 2010, p. 86; Temkin & Rohe, 1996, p. 159). According to Jargowsky (1997, p. 4), "poor neighborhoods have an independent effect on the social and economic outcomes of individuals even after taking account of their personal and family characteristics, including socio-economic status." The consequences of neighborhood poverty or of the neighborhood effect can operate through variety of means: a culture that emphasizes short-term goals instead of long-term planning, limited role models and stabilizing institutions, underfunded schools, and reduced access to jobs. In these ways, the

neighborhood can “influence the choices children make, the breaks they get, and the way they are treated by family, peers, and employers” (Jargowsky, 1997, pp. 1, 4). Because of their economic status, the individuals and families, especially children, become trapped in these neighborhoods because they cannot afford to move.

According to Soloman and Vandell (1982, p. 81), the lack of effective policies to combat decline is attributable to confusion over the sources or causes of the decline. This confusion, in turn, can be traced to a lack of agreement about the fundamental theories that provide a framework from which decline can be understood and effective policies implemented. If suburban communities are to maintain their physical, social, and economic health, research regarding the causes of decline, specifically the role played by capital, is important in developing effective public policies that work to prevent and address the consequences of decline. Furthermore, it can help identify and amend current public policies that are ineffective in addressing decline or may exacerbate decline.

This research attempts to answer the question, “Does residential disinvestment by real estate interests (that is, homeowners, landlords, lenders, real estate agents, government, and developers) contribute to the decline of inner suburbs?” Should the evidence support the hypothesis, this research will tell us a number of things:

(1) That capital disinvestment from residential property has contributed significantly to the decline (physical, social, and economic), over the last 30 years (1980–2010), of inner suburbs.

(2) That the political-economy perspective of neighborhood change, and more specifically, Smith's theory of gentrification, provides a theoretical foundation that helps explain suburban decline.

(3) That policy solutions addressing declining inner suburbs ought to focus on public policies that result in:

(a) An increase in private capital investment, by reducing risk and increasing the comparative profitability relative to investment in outer suburbs.

(b) Local, county, regional, and state government investment that funds the last stages of devalorization making the reuse, rehabilitation, or redevelopment of the residential housing stock of inner suburbs possible by equalizing risk and profitability of investment in inner suburbs compared to outer suburbs.

(c) Identifying and amending current policies that encourages or provides an unfair advantage for private investment at the periphery.

THEORETICAL FOUNDATION

This section provides the theoretical context for this dissertation. The first part of this section provides a brief review of the three major perspectives of neighborhood change and their major variations based on a classification by Temkin and Rohe (1996, pp. 160–164). The three perspectives are the (1) ecological, (2) subcultural, and (3) political economy (Schwirian, 1983, p. 92; Soloman & Vandell, 1982, pp. 81–88; Temkin & Rohe, 1996, pp. 159–170; van Beckhoven, van Kempen, & Bolt, 2005, p. 6; Vardy, 1986, pp. 1–3). The second part of this section provides an overview of Smith's theory of gentrification. Smith's theory is the theoretical foundation for this research and is

situated with the political economy perspective (Temkin & Rohe, 1998, pp. 65, 67). Discussing the three major perspectives of neighborhood change is important because each forms the foundation for certain public policy solutions to combat neighborhood decline. While not necessarily mutually exclusive, effective public policies ought to recognize that a public policy foundation may include, to a greater or lesser degree, parts of each perspective.

Ecological Perspective

The ecological perspective is the oldest of the three perspectives, originating in the Chicago School of Sociology in the 1930s. The roots of the ecological perspective are grounded in the concepts and principles of plant and animal ecology (Berry & Kasarda, 1977, p. 4; Gottdiener, 1994, p. 27; Lake, 1983, p. xvi; Park, 1983, p. 54). This perspective includes all variations that are highly deterministic, meaning that forces larger than the neighborhood are the source of change. Human agency or the actions of the residents respond to stimulus, such as changes in transportation or communication technologies, but are inconsequential as the primary source or initiators of neighborhood change and stability (Hawley, 1950, p. 328; McKenzie, 1925, pp. 68–70, 75). This perspective includes the work of both sociologists and economists, as both share many of the assumptions regarding urban space and individual autonomy (Temkin & Rohe, 1996, p. 160).

According to the ecological perspective, neighborhoods across the metropolitan area are in a continual cycle of change (Downs, 1981, pp. 61–71). Neighborhood change is initiated by forces larger than the neighborhood that result in an alteration in the social and economic characteristics of neighborhoods. Changes in neighborhood

characteristics are triggered by forces that include, but are not limited to, changes in transportation routes or technologies, population growth, communications technologies, the establishment of new industries, physical obsolescence of buildings, construction of important public or private structures, and changes in the economic base (Hawley, 1950, p. 400; Park & Burgess, 1925, p. 23). With each triggering event, a new round of competition for space between groups is initiated (van Beckhoven et al., 2005, p. 7). Eventually, neighborhoods experience a change in their social and economic characteristics as new groups resettle into the neighborhood after the triggering event (Logan & Molotch, 1987, p. 5). The relocation of these groups based on their economic, racial, or ethnic status is considered a natural outcome of the competition for space.

The ecological perspective accepts that fact that neighborhood change leaves some neighborhoods better off than others. Inequality between neighborhoods is understood as a natural consequence of the competitive process and the differentiation of people (Logan & Molotch, 1987, p. 6). Consequently, ecological models of neighborhood change make it difficult to justify neighborhood stabilization efforts because (1) it is assumed that neighborhood change has a positive effect on residents, both those moving out and those moving in, and (2) efforts at stabilization are beyond the neighborhood's control, and therefore any effort will fail (Temkin & Rohe, 1996, p. 161). According to Mingione (1984, p. 64, as quoted in Logan & Molotch, 1987, p. 7), the ecological perspective ignores "any connection between urban social structures, and the general class structure of society, and between the urbanization process and the capitalistic accumulation process." Human action, cultural folkways, and political activities are also overlooked, as influencing the form of the built environment (Logan &

Molotch, 1987, pp. 7–8; van Beckhoven et al., 2005, p. 7). Collective human action is perceived as interfering with a smooth-functioning market and should be eliminated. The only role for public policy is to maintain a smooth-functioning market (Logan & Molotch, 1987, p. 7). The real weakness of this perspective, according to Logan and Molotch (1987, p. 9), is that it ignores the fact that "markets themselves are the result of cultures; markets are bound up with human interests in wealth, power and affection." Within the ecological perspective, the three major variations are (1) invasion/succession, (2) filtering, and (3) the bid rent. Within the ecological perspective, these theories represent the most common and most influential theories explaining neighborhood change and decline, and drive, to one degree or another, public policy approaches to prevent or address neighborhood decline.

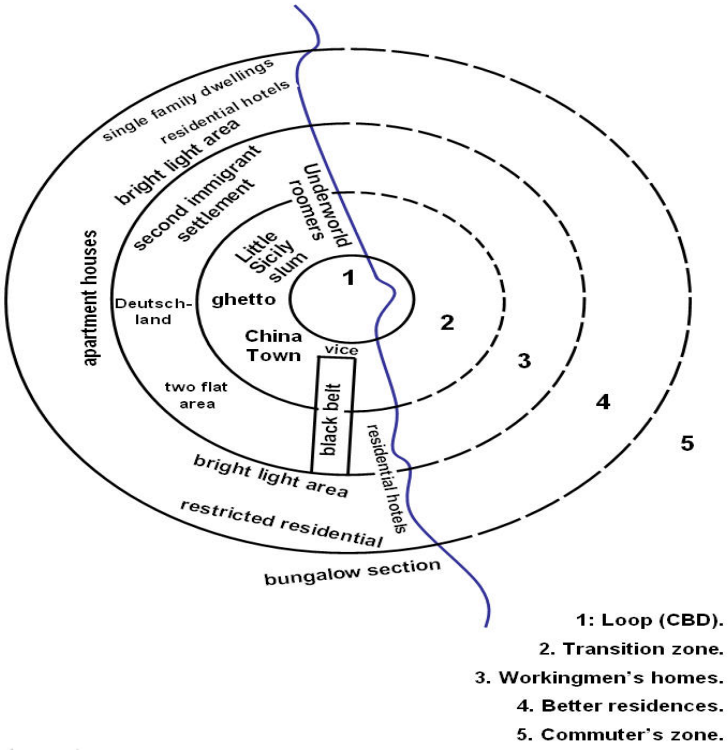
Invasion and Succession

Burgess's concentric ring model of urban expansion and change provides a spatial illustration of the process of neighborhood invasion and succession. Specifically, it explains how cultural and economic groups sift through different areas of the city over time (Ahlbrandt & Cunningham, 1979, p. 19). Although this model was developed based on the city of Chicago of the early 1900s, it is has been very influential in shaping the thinking of how metropolitan areas grow and change (Burgess, 1925, pp. 47–62).

According to Burgess (1925, pp. 47–62), the ideal model of city expansion is portrayed as a series of concentric circles that depicts successive zones of expansion and differentiation (Ahlbrandt & Cunningham, 1979, p. 18; Park & Burgess, 1925, p. 50). Figure 1 provides a graphic illustration of the Burgess model of urban expansion and form. The first zone comprises the central business district (CBD). This includes

department stores, office buildings, museums, and theatres. It is the headquarters for economic, social, and civic life. The area just outside the CBD comprises the wholesale business market, factories, and associated warehouses (Burgess, 1925, p. 50; Johnston, 1971, p. 66). The second zone is the “zone in transition.” It is characterized as a slum and as a place where immigrants settle as they enter the city (Barrett & Hall, 2012, p. 41; Burgess, 1925, p. 50; Hoyt, 1939, p. 20; Johnston, 1971, p. 66; Kaplan, Wheeler, & Holloway, 2009, p. 197). It draws the urban poor, the lower-income residents, and the seedier elements of society into an area where residents experience any number of social pathologies, divorce, crime, poverty, and juvenile delinquency (Berry & Kasarda, 1977, p. 5; Gottdiener, 1994, p. 31). Once the primary residential area when the city was smaller, it was invaded, in part, by wholesale and light manufacturing uses (Hoover & Vernon, 1962, p. 283; Hoyt, 1939, p. 20; Park & Burgess, 1925, p. 59).

Figure 1: The Burgess Model.



Those who still want to be close to work, and who have fled the zone in transition, occupy the third zone, or the zone of workingmen's homes. Second-generation immigrants who have moved up the economic ladder can now afford to move to better neighborhoods outside the zone in transition (Burgess, 1925, p. 50; Johnston, 1971, p. 66). The fourth zone, or the zone of better residences, comprises upper-end apartments and single-family homes. Small business owners and professional people occupy these neighborhoods (Burgess, 1925, p. 50; Johnston, 1971, p. 66). Lastly, the fifth zone is the commuter zone, which includes suburban areas or satellite cities and requires a lengthy commute to the CBD (Burgess, 1925, p. 50).

Growth in metropolitan-area population initiates the invasion and succession cycle and the competition for space among different ethnic and racial groups that results in neighborhood change (Badcock, 1984, p. 7; Gottdiener, 1994, p. 31; Keating & Smith,

1996, p. 25; Park & Burgess, 1925, pp. 57, 75). New immigrants, typically those with lower income and fewer employable skills, settle into or invade neighborhoods in the oldest parts of the city—that is, the zone in transition—because that is where the housing is most affordable and because jobs are within walking distance (Berry & Kasarda, 1977, p. 5; Gottdiener, 1994, p. 32; Kaplan et al., 2009, pp. 195, 197; Park & Burgess, 1925, p. 76). As a result of their growing economic affluence, they begin to move outward, invading areas occupied by other different ethnic and racial groups. As a result of the desire to maintain their social distance from the invading group, the existing ethnic or racial group moves farther out, invading newer and ethnically or racially different areas closer to the periphery (Kaplan et al., 2009, p. 195). This process is repeated until the wave of change has reached the periphery of the metropolitan area.

Succession occurs when the number of invading group members exceeds the number of the current ethnic or racial group members. The result is that different ethnic and racial groups are segregated into relatively homogeneous areas. These areas are considered to have emerged naturally because they are the result of competition among groups for space, and not the result of conscious planning (Berry & Kasarda, 1977, pp. 4–5; Gottdiener, 1994, p. 33; Keating & Smith, 1996, p. 25; Park, 1983, p. 58; Park & Burgess, 1925, p. 77). This change results in a qualitative difference in the economic, ethnic, and racial character of the neighborhood. (Kaplan et al., 2009, pp. 195, 197; Park & Burgess, 1925, pp. 68, 75). See Figure 1.

Burgess's model of invasion and succession assumes that (1) metropolitan growth, and therefore neighborhood change, occurs from the inside out, (2) economic and social status increases as one moves from the central city toward the suburban

periphery, and (3) the growth and change of the city relies heavily on ethnic, racial, and class variation (Ahlbrandt & Cunningham, 1979, pp. 18–19; Hanlon, 2007, p. 13; Johnston, 1971, p. 67). Criticisms of this model include the facts that (1) politics, power, and other forces that shape society play no role in neighborhood change, and (2) transportation and the economic logic of cities are inconsequential in shaping the urban environment (Hanlon, 2007, p. 13; Kaplan et al., 2009, p. 197).

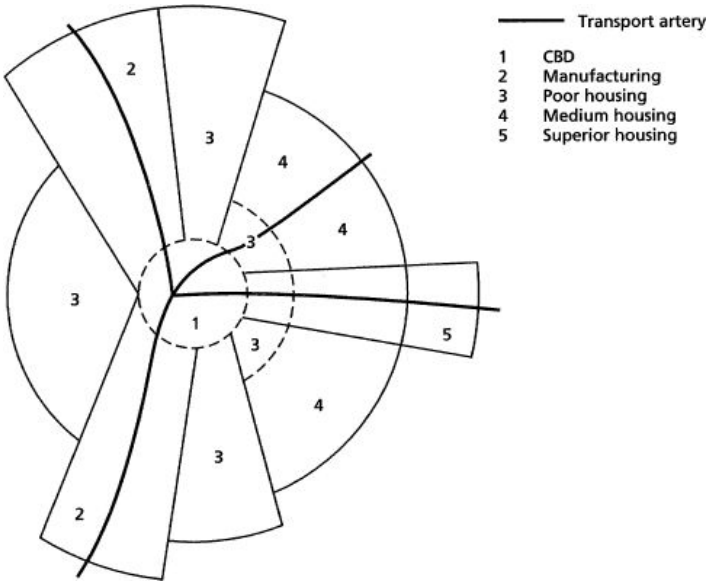
Related to the process of invasion and succession is the notion of a tipping point, which is typically defined as “the threshold after which there is an acceleration in the rate of white households moving out of the neighborhood” (Goering, 1978, p. 68; Kaplan et al., 2009, p. 65; Keating & Smith, 1996, p. 26; Ottensmann, 1995, p. 131). The tipping point has been used to explain the cause of white households leaving an area as the result of black and other minority groups moving in. Conclusions about the existence of a tipping point have been mixed (Hanlon, 2007, p. 13). However, the tipping point hypothesis is no longer suitable for explaining racial change (Lucy & Phillips, 2000, p. 180). According to Goering (1978, pp. 69, 77), “there is no social science evidence that supports the existence of a single, universally applicable tipping point which can explain and predict the point at which neighborhoods will irreversibly change from white to non-white. There is no single demographic proportion of nonwhites to whites which can be used as an a priori basis for predicting the timing or rate of white flight.” Macro-level factors, neighborhood factors, and personal factors make it difficult to attribute and predict the reason for household mobility to just the racial change of a neighborhood (Goering, 1978, pp. 70–75; Ottensmann, 1995, p. 138; Schwirian, 1983, p. 90).

Filtering

An early variation to Burgess's invasion and succession model of neighborhood change was the notion of filtering. Filtering was introduced in 1939 by Hoyt (1939, p. 121) and is implicit in his sectoral model of urban expansion (Hanlon, 2007, p. 14; Johnston, 1971, p. 79; Temkin & Rohe, 1996, p. 160). While working for the Federal Housing Administration, Hoyt examined patterns of rental values in 142 American cities for the purpose of predicting mortgage-lending risk. He concluded that a city's form did not follow Burgess's concentric ring model, but tended to conform more to a pattern of sectors (Adams, 1991, p. 108).

Hoyt catalogued the distribution of residential areas in each city. Generally, high-rent areas, which originated near retail and office uses and were farthest from industrial uses, tended to locate at the periphery in a few sectors along major transportation routes. The intermediate-rent areas typically surrounded or were adjacent to the high-rent areas. For both the high and intermediate areas, rents declined on all sides and the nearer the property was to the business center. Low-rent areas covered the balance of residential areas extending from the core to the periphery with no grade change in rents (Hoyt, 1939, pp. 74–76, 116, 120). Figure 2 provides a graphic illustration of Hoyt's model of urban expansion and form.

Figure 2: Hoyt's Model.



Hoyt also found that the high-, intermediate-, and low-rent areas did not always occupy their current locations. Over time, these areas changed or declined as a result of a shift in the character of its occupants (Hoyt, 1939, p. 112). As high- and intermediate-rent households occupied new housing at or nearer the periphery, lower-rent households moved into houses vacated by intermediate- and high-rent households, thus changing the character of the neighborhood. This process, responsible for neighborhood change, is called filtering.

According to Baer and Williamson (1988, p. 132), filtering theory first appeared in Great Britain in the mid-19th century, stating that by "increasing the number of first class houses for mechanics, the vacated tenements increase the supply for the second and third classes and thus all classes benefited." The concept of filtering did not appear in the United States until after the housing reform era (1870–1990) and the implementation of local government building codes (Baer & Williamson, 1988, p. 132).

According to Radcliff (1949), as quoted in Baer and Williamson (1988, p. 128),

filtering can be generally described as housing that “tends to move downward in the quality and value scales as it ages. Thus new housing introduced at or near the top descends gradually through successive stages of lower value. It is often contended that the need for additional housing on the part of lower-income groups can be met by the production of an adequate supply of new housing for upper-income groups. Thus, used homes would be released to be passed down to successively lower levels until the effect reached the bottom of the market.” (See also Bourne, 1981, p. 150; Carter & Polevychok, 2006, p. 7; Hanlon, 2007, p. 14; Lowry, 1960, p. 362.)

The change in neighborhood social and economic characteristics is the result of the filtering process. As housing gets older, functional obsolescence and maintenance costs increase. This motivates households to choose newer housing, that is, housing with less wear and tear and functional obsolescence that is being constructed at the fringe of the metropolitan area (Bourne, 1981, pp. 149-151; Pitkin, 2001, p. 4; Temkin & Rohe, 1996, p. 160). The assumption is that all households try to get the best housing they can afford (Baer & Williamson, 1988, p. 130). Lower-income households, who have themselves vacated lower-valued housing nearer the central city core, then occupy the newly vacated housing (Hoyt, 1939, pp. 121–122; Pitkin, 2001, p. 4; Temkin & Rohe, 1996, p. 160). As this process continues over time, there is a decline in neighborhood social status as lower-income households spread outward from the central city to occupy older suburban neighborhoods that were once occupied by higher-income households (Baer & Williamson, 1988, p. 136; Bier, 2001, p. 6; Hanlon, 2007, p. 15). According to Bauer (1938), as cited in Baer and Williamson (1988, p. 133), it is filtering that has caused the creation of inner-city slums. Unlike Burgess’s model, Hoyt’s model

of metropolitan growth and change occurs from the outside in, as higher-income households move to newer housing at the periphery, freeing up housing closer to the CBD for lower-income households (Ahlbrandt & Cunningham, 1979, p. 18).

Since the 1930s, federal government has implicitly embraced the filtering approach to providing housing for low- and moderate-income households. The role for all levels of government policy has been to promote the construction of housing for higher-income households at the urban periphery, as doing so ultimately results in housing for low- and moderate-income households through the filtering process (Kaplan et al., 2009, p. 226). Through a number of programs and tax expenditures related to housing, the federal government has encouraged the construction of housing at the periphery. The federal government funded the interstate highway system and provided funding for water and sewer improvements, which had the effect of opening up land for development at the periphery.

Often confused as the cause of residential and economic decentralization, that is, suburbanization, models of governmental spending on infrastructure as the cause of suburbanization must be rejected. According to Caris (1996, p. 20), the “investment in transportation technology can be conceived as an attempt by capital to overcome spatial barriers, and also as an investment in the secondary circuit of capital in response to economic crisis.” Advances in transportation technology and governmental infrastructure spending facilitated or made decentralization possible but is not its cause. In addition, the mortgage interest and property tax deductions, as well as FHA mortgage insurance, also encouraged homeowners to purchase more expensive homes, typically in areas of new growth at the periphery (Adams, Bjelland, Hansen, Laaken, &

VanDrasek, 1998, pp. 83–85; Baer & Williamson, 1988, pp. 133–134; Bier, 2001, pp. 8–10; Downs, 1981, p. 38). Even with the government's implicit role of encouraging growth at the periphery, to free up more affordable housing nearer the central city, the fact remains that 30% of all homeowners, and 45% of all renters in 2007 spend 30% or more of their income on housing which is considered unaffordable (Schwartz, 2010, p. 29). Filtering is failing thousands of household as a means of providing an affordable place to live.

Although filtering, as a theoretical construct, is fairly straightforward, it relies on a number of assumptions for which it seems there is very little empirical support. Some of the main criticisms of filtering include the facts that (1) the market is unable to absorb a sufficient number of new units for other units to filter down to lower-cost levels, because there are far fewer upper-income households than middle- and lower-income households; (2) a decrease in value that comes with age is not inevitable, as a housing unit may maintain its value if demand is sufficient; and (3) discrimination works within the filtering process, obstructing the flow of units to blacks (Baer & Williamson, 1988, p. 131).

Hoyt's model recognizes that neighborhoods move through stages from initial development to decline (Hoyt, 1939, p. 121). Others have developed similar cycle or stage models of neighborhood change, building on Hoyt's model. Yet all have agreed with Hoyt that as the neighborhood housing stock ages and becomes obsolete, the neighborhood declines, as those who can afford to move out do so, leaving the housing to be occupied by low- and moderate-income households (Kaplan et al., 2009, p. 227).

The first to develop a neighborhood life cycle model of neighborhood change were Hoover and Vernon (1962, pp. 183–198). Their model asserts that all neighborhoods undergo a process of change much like the life cycle of living beings. Neighborhoods are born, grow, age, decline, and are eventually abandoned (Downs, 1981, p. 68; Schwirian, 1983, p. 91). Through the neighborhood life cycle process, residential neighborhoods proceed through a series of five stages: (1) single-family subdivisions, (2) apartment development, (3) downgrading generally associated with conversion, (4) thinning out, and (5) renewal (Carter & Polevychok, 2006, pp. 8–11; Downs, 1981, pp. 63–65; Hanlon, 2007, p. 15; Schwirian, 1983, p. 91).

As a neighborhood moves from one stage to the next, a number of social, economic, and physical characteristics changes occur, including (1) an increase in minority population, (2) an increase in median age of residents, (3) an increase in the intensity of land uses and population density, (4) a decrease in household income and property value, and (5) an increase in the amount of deferred maintenance and obsolescence of residential structures (Schwirian, 1983, p. 92). According to Downs (1981, pp. 64–65), unlike Hoover and Vernon's model, neighborhoods can change in both directions (Kaplan et al., 2009, p. 227). The shortcoming of the life cycle model of neighborhood change is that it only describes the process and consequences of decline, but does not illuminate its cause. Consequently, public policies address the consequences, not the causes of decline.

Bid Rent

The bid rent variation of the ecological perspective focuses on consumer decisions regarding housing location that center on the trade-off between housing

services and residential location (Temkin & Rohe, 1996, p. 164). Early theoretical development of the relationship between rent and location is grounded in the work of von Thunen and his spatial analysis of agricultural rent. von Thunen claimed that the urban land market operated according to the same logic as the agricultural market (Alonso, 1983, p. 1).

According to the residential application of this theory, the consumer desires both the shortest commute possible to the central business district (CBD) and as much house and land as they can possibly afford. Satisfying these desires requires a trade-off, as the less expensive land is located farther from the CDB, and living farther from the CBD results in greater commuting costs in terms of time and money. The consumer, given his or her income and preferences, works to balance the opportunity for cheaper land nearer the periphery against the greater commuting costs that come from living farther from the CBD (Alonso, 1983, p. 6; Hanlon, 2007, p. 17; Pitkin, 2001, p. 5; Temkin & Rohe, 1996, p. 161). Locational satisfaction is achieved when the consumer believes the benefit of more space is equal to the increased costs of commuting to the CBD. The result is that higher-income households occupy residential housing farther from the CBD. Lower-income households occupy smaller housing on less land nearer the CBD, as they are unable to afford the higher commuting costs that come with living farther from the CBD, and because employment opportunities are greater nearer the CBD (Alonso, 1983, p. 7; Hanlon, 2007, p. 17).

Neighborhood social and economic makeup is the result of individual consumers competing or bidding against each other for residential locations. Neighborhood change occurs as the individual and/or household experiences changes in income and family

structure throughout the life cycle (Temkin & Rohe, 1996, p. 161). With each change in income and family structure, new decisions are made about where to live based on the trade-off between space for living and commuting costs.

Similar to the bid rent model is Tiebout's theory of pure local government expenditures. In both models, household location is based on preferences and trade-offs for and between certain locational attributes. But unlike the bid rent model, which explains the location of households as the trade-off between land and commuting costs, Tiebout's theory explains the location of households as the household's preference for public goods. "The consumer is, in a sense, surrounded by a government whose objective is to ascertain his wants for public goods and tax him accordingly…. [T]he government's revenue expenditure pattern for goods and services is expected to adapt to consumers' preferences" (Tiebout, 1956, p. 417). Bid rent theory assumes that (1) households have perfect mobility, (2) households have perfect knowledge about the different patterns of services and expenditures for each community, (3) there are a large number of communities to choose from, (4) restrictions due to employment are ignored, and (5) public services exhibit no external economies or diseconomies (Tiebout, 1956, p. 419). Neighborhood decline, under Tiebout's model, could then be explained as households not moving to, or moving from, cities or neighborhoods whose service package (type and level, and expenditures) meets preferences of the fewest number of households. Tiebout's theory is subject to the same weakness of ecological theories mentioned earlier.

The bid rent model is based on a number of assumptions: (1) the city is comprised of one central business district, (2) the geographic plane is uniform and

featureless in all directions, (3) there is transportation in all directions, and (4) every household has the same taste for housing and all households desire more housing. A major weakness of this theory is that it ignores the effects that public services and taxes (Tiebout's model), pollution, and natural and manmade amenities have on residential location decisions, and assumes their uniform distribution throughout the city (O'Sullivan, 2000, pp. 227–229).

Subcultural Perspective

The subcultural perspective is the second of the perspectives of neighborhood change. The subcultural perspective is a response to the perceived flaws of the ecological perspective's explanation of neighborhood change (van Beckhoven et al., 2005, p. 7). Subcultural apologists reject the primary assumptions of the ecological perspective (Pitkin, 2001, p. 6). First, they reject the social and economic determinism of the ecological perspective with its notion that neighborhood change is the result of markets, competition, and the allocation of resources based on price (Firey, 1944, p. 140; Pitkin, 2001, p. 2; Soloman & Vandell, 1982, p. 82; Temkin & Rohe, 1996, p. 162). According to Firey (1944, pp. 140–141), neighborhoods have symbolic qualities that represent certain cultural values, and they comprise aesthetic, historical, and familial sentiments (Suttles, 1972, p. 35). These symbols and sentiments are intrinsic qualities that act to retain, attract, and resist certain types of people. They transcend the economic utility of the neighborhood as the only organizing principle. The shortcoming of the ecological approach is that the "parameters capturing the strength of the social fabric or social support systems in a neighborhood are not included part of the modeling efforts" (Ahlbrandt & Cunningham, 1979, p. 20).

Secondly, the ecological perspective places the locus of neighborhood change on variables larger than the neighborhood, such as public improvements, demographic changes, and private construction. According to Ley (1974), as noted in Temkin & Rohe (1996, p. 162), “Neighborhood residents may derive satisfaction from a perceived unique social and cultural milieu which causes community residents to take proactive measures to maintain their neighborhood identity.” Ahlbrandt and Cunningham (1979, p. 29) state that “neighborhoods are composed of people, and in the last analysis, it is the willingness of residents to remain in their neighborhood, and to work to improve it that will determine the stability of the area. There is nothing inherent in the aging process that requires older neighborhoods to wear out. . . . Neighborhoods can be upgraded” (Ahlbrandt & Cunningham, 1979, p. 25). According to Temkin and Rohe (1998, p. 69), neighborhoods with strong sociocultural milieus are much more likely to defend their neighborhoods against potential threats. Weaker neighborhoods are much more likely to undergo decline.

Lastly, the subcultural perspective contends that neighborhoods are heterogeneous, composed of a wide variety of subcultures, and not, as the ecological perspective assumes, composed of one uniform culture (Pitkin, 2001, p. 7). According to Ley (1974), as noted in Temkin and Rohe (1996, p. 162), “Neighborhoods are not arrayed on an isotropic plan, differing solely by land use patterns resulting from varying land values.” This notion of neighborhood heterogeneity is confirmed through a number of ethnographic neighborhood studies that emphasize the role of ethnic identity in stabilizing neighborhoods. There are also other identity-based subcultures that are effective in neighborhood stabilization efforts (Pitkin, 2001, p. 7; Temkin & Rohe, 1996,

p. 162; Williams, 2011, p. 8).

The subcultural perspective does not explain so much about how neighborhoods change, but how neighborhoods remain stable, in light of the influences larger than the neighborhood associated with the ecological and political economy perspectives. According to Temkin and Rohe (1996, p. 162), all neighborhoods do not follow the same course. If neighborhood change is the result of external forces, then why do some neighborhoods remain stable and others decline? The subcultural perspective provides one answer to this question.

Political Economy Perspective

The theoretical foundations of the political economy perspective were first applied to U.S. metropolitan areas in the 1970s as an alternative explanation to the ecological approach that understood the development of the city as a natural process flowing predictably from technological changes and population growth toward a state of equilibrium (Gottdiener, 1994, p. 74; Kaplan et al., 2009, pp. 11, 185). The push, in part, to develop an alternative approach to understanding the forces that shape the built environment were the ghetto riots of the 1960s that brought to light the fact that more than 20 percent of the U.S. population was experiencing daily poverty, unemployment, substandard housing, malnutrition, violent crime, and inadequate medical and education services. The ecological perspective could not provide an adequate explanation for these social inequities (Gottdiener, 1994, p. 71).

The political economy approach theorizes that the form of the built environment must be considered as tied to its mode of production (Gottdiener, 1994, p. 72). As Friedmann (1986, p. 69) states, “The city was no longer to be interpreted as a social

ecology, subject to natural forces inherent in the dynamics of population and space; it came to be viewed instead as a product of specifically social forces set in motion by capitalist relations of production." The major premise of this perspective is that urban areas are used by powerful elites to facilitate capital accumulation (Temkin & Rohe, 1996, p. 163). Neighborhood change results from an ongoing conflict between capitalist relations of production, and not, as the ecological perspective would have it, from a movement toward a state of equilibrium (Carter & Polevychok, 2006, p. 17; Pitkin, 2001, pp. 8–9; Schwirian, 1983, p. 94). Conflict is initiated as investors seek greater and greater profitability by raising rents, pursuing property renovation, conversion, or sale, which results in tenants being forced to move because units are no longer affordable or available. In other cases, development initiatives often move ahead, even in the face of strong local opposition, resulting in changes in the social and economic characteristics of the neighborhood (Logan & Molotch, 1987, p. 111).

Where the political economy and the ecological perspectives agree is that neighborhood change originates from forces larger than the neighborhood. Where they disagree is on the specific forces of change. For the political economist, forces of change originate in the social relations of production and accumulation, and are not the result of population growth and technological change (Pitkin, 2001, p. 8). An influential variation within the political economy perspective is the growth machine. The growth machine focuses on the role that land-based elites have in shaping the built environment and the struggle between exchange and use values.

The political economy perspective elevates the satisfaction of capital and associated real estate interests as the primary driver of growth and decline of the built

environment. As a supply side approach, its weakness is that it minimizes the demand side or the role consumer choice has in determining whether neighborhoods grow or decline. As such, the public policy solutions to prevent or reverse decline differ. The supply side approach emphasizes policies to prevent or reduce decline by making housing reinvestment profitable through public regulation of private real estate interests, as well as public financing/funding for housing rehabilitation, reuse and/or redevelopment. In contrast, demand side public policies, focus on maintaining and improving a broader set of neighborhood characteristics to attract people. These include, but are not limited to policies around school quality, crime, recreational amenities, shopping, and other elements that make for an attractive quality of life. But even these amenities require investment, and in the case of private investment they must be profitable before they are constructed. Furthermore, the political economy perspective ignores the role that intrinsic neighborhood qualities, such as aesthetic, historical, cultural or familial sentiments, exert in retaining and attracting residents. These qualities motivate residents to organize to preserve their neighborhood against the changes sought by real estate interest who value the built environment for is exchange, as opposed to its use, value.

Growth Machine

The growth machine explains the structure of the built environment as an expression of land-based elite interests, especially real estate interests. Coalitions of interests influence urban politics in an effort to expand the local economy, at the expense of other land-based elites in competing jurisdictions, for the purpose of

accumulating personal wealth. Competing jurisdictions can include regions, cities, or neighborhoods (Jonas & Wilson, 1999, pp. 3–4; Molotch, 1976, p. 309).

Land is a commodity that provides wealth and power; as such, the city is an aggregate or mosaic of land-based interests. Land's value is found in its exchange, which has the potential to increase the owner's financial well-being (Molotch, 1976, pp. 309–310). Land-based interests work to influence local politicians to steer scarce public and private resources to specific cities or neighborhoods, where elites own property, for the purpose of achieving financial well-being that comes from increases in land values or revenues. Public resources can include public infrastructure projects such as highways, airports, park developments, higher education campuses, traffic lights, and other forms of public investment. Private resources can include the location of industrial parks, business headquarters, and retail and residential development (Jonas & Wilson, 1999, p. 7; Molotch, 1976, p. 311). Because resources are scarce, some cities or neighborhoods do not receive resources, which can result in decline (Jonas & Wilson, 1999, p. 5).

Land-based interests directly benefiting from growth include real estate interests, such as owners, investors, lenders, developers, and real estate brokers. These interests benefit from the exchange value or profit from their real estate holdings through returns on land development, building construction, and the selling and renting of real estate. Also benefiting are interests that are not directly involved in real estate but profit by additional demand for local public and private goods and services as a result of population growth. These include local newspapers, utilities, universities, museums, theatres, organized labor, and small retailers (Carter & Polevychok, 2006, pp. 17–18;

Logan & Molotch, 2002, pp. 215–220; Molotch, 1976, pp. 310, 313; Molotch, 1999, p. 249; Temkin & Rohe, 1996, p. 163; van Beckhoven et al., 2005, p. 9). This collection of private interests, along with local government leaders, is known as the growth machine, which uses its influence and resources to promote growth in certain cities and neighborhoods (Jonas & Wilson, 1999, p. 5). The conflict between the growth machine and neighborhood residents is the result of how each sees property. The growth machine values property for its exchange value, while neighborhood residents value property for its use value.

Neighborhoods fulfill a variety of needs or uses, beyond that of making a profit. The needs include (1) the daily round, or access to schools, work, shopping, and so on; (2) informal support networks, such as babysitting, snow shoveling, yard work, job referrals, and so on; (3) the security and trust that come from familiarity with neighbors and the neighborhood physical environment; (4) identity, or the social standing that comes from being associated with a certain geographic location; (5) agglomeration benefits, which come from the concentration of large numbers of people; and (6) ethnicity, or the shared lifestyle that promotes interpersonal support (Logan & Molotch, 1987, pp. 18, 103–110). By contrast, the growth machine works to influence politicians to take a number of actions that direct public and private resources to certain cities or neighborhoods with the hope of earning a profit. These actions include (1) the location of unwanted public infrastructure, (2) redevelopment and renewal, (3) gentrification, (4) racial change, (5) site assemblage, and (6) suburbanization. All of these actions threaten to dislocate residents, break up neighborhoods, and/or result in environmental degradation (Logan & Molotch, 1987, p. 111).

The pursuit of profits by the growth machine threatens residents with the loss of the neighborhood benefits identified above. As Logan and Molotch (1987, p. 111) state, "the major challenge to neighborhood, as a demographic-physical construct as well as a viable social network, comes from organizations and institutions whose routine functioning reorganizes urban space. The stranger to fear may not be the man of different ethnicity on the street corner, but the bank president or property management executive of irrelevant ethnicity far from view." Both the subcultural and political economy perspectives emphasize establishing grassroots organizations to resist neighborhood change, but the political economy prompts neighborhoods to go further and compete for resources and influence if they are to resolve the conflict between exchange and use values in their favor (Jonas & Wilson, 1999, p. 6). The ecological perspective, by contrast, denies there is any role for the state in preventing or addressing the consequences of neighborhood change (Temkin & Rohe, 1996, p. 164).

Smith's Theory of Gentrification

Smith's theory of gentrification provides the theoretical foundation for this dissertation. The theory was presented in 1979, not as an explanation specifically for suburban decline, but as an alternative to consumer sovereignty or demand-side explanations of gentrification (Smith, 1979, pp. 538–539; Smith, 1983, pp. 278–280). It is situated within the political economy perspective because of the lead role that capital plays, along with those who control capital, in shaping the built environment (Caris, 1996, p. 36; Feagin & Parker, 1990, pp. 16–17).

The theory explains how inner-city gentrification is stimulated more by the ability to earn a profit than it is by the demand for inner-city living (Smith, 1979, p. 540).

According to Smith (1979, p. 545), gentrification is made possible when the “rent gap” between a neighborhood’s capitalized ground rent and its potential ground rent is large enough to allow a developer to pay all development costs (acquisition, demolition, relocation, construction and/or rehabilitation, utilities, interest, soft costs, etc.) and sell the property for a competitive profit. The rent gap is produced by the (1) depreciation of inner-city neighborhood housing, which lowers the capitalized ground rent, and (2) continued urban expansion that raises the potential ground rent (Smith, 1979, p. 545; Smith, 1996, p. 67).

The theory’s specific applicability in explaining suburban decline is its devalorization cycle. The cycle explains how the capitalized ground rent falls as the result of decisions by real estate interests to reduce or withdraw their capital from inner-city neighborhoods. It is this disinvestment that causes decline. This research hypothesizes that since about 1980, inner suburbs have been subject to the same disinvestment process experienced earlier by inner-city neighborhoods (Caris, 1996, p. 8). In other words, capital disinvestment has spread outward from the central city to the inner suburbs (Fainstein & Fainstein, 1986, p. 15; Smith, 1986, p. 23; Walker, 1981, p. 395).

Smith’s theory has two major parts. The first part places the devalorization cycle in a larger historical and structural context of urban development that highlights the prominent role that capital plays in shaping the built environment, specifically the factors that result in the movement of capital outward to the periphery (suburbanization) and away from the central city. According to Caris (1996, p. 28), “urban development, decline and redevelopment are viewed in terms of investment and disinvestment of

capital in the built environment" and "can only be understood as a part of the process of urban development in general." The second part describes the devalorization cycle that explains, in greater detail, the movement of capital out of inner-city neighborhoods as the result of decisions made by a diversity of real estate interests (Caris, 1996, p. 33; Kary, 1988, pp. 56, 58; Smith, 1979, p. 543; Smith & LeFaivre, 1984, p. 49). The result of both parts is that capital is directed out of the inner city farther out to the metropolitan periphery.

Part 1 – The Movement of Capital to the Periphery

The interaction between private enterprise's need for capital accumulation and the unique characteristics of the built environment provides the historical and structural context that explains movement of capital to the urban periphery and away from the fully developed central city (Smith, 1979, p. 541).

Capital Accumulation. Spurred by competition, all firms desire greater and greater surplus value (Mandel, 1973, pp. 35, 54; Smith & LeFaivre, 1984, p. 47). Growing surplus value makes firm expansion possible through the reinvestment of surplus value into labor and technology (Heilbroner, 1999, p. 158; Kaplan et al., 2009, p. 186; Mandel, 1973, p. 35). Reinvestment improves productivity and results in business expansion that leads to even greater surplus value (Heilbroner, 1999, pp. 158–159; Mandel, 1973, p. 60; Smith, 1979, p. 541). The consequence of a declining surplus value and contraction is bankruptcy or merger by a competitor (Smith, 1979, p. 541). Striving for increased surplus value translates, at the scale of the entire economy, into long-term growth and stability (Smith, 1979, p. 541).

But growth in surplus value and expansion is not continual; it is cyclical, moving

through phases of accumulation, over-accumulation, crisis, and recovery (Smith & LeFaivre, 1984, p. 47). Perpetual growth in surplus value cannot be maintained; rates of profit eventually begin to fall (Mandel, 1973, p. 69; Smith & LeFaivre, 1984, p. 47). As profits fall, private firms respond by introducing labor-saving technology to reduce labor costs and improve productivity and profitability—that is, surplus value (Heilbroner, 1999, p. 159; Mandel, 1973, p. 59). But the reduction in labor, through the substitution of labor-saving technology, reduces the firm's basis for surplus value (the exploitation of the worker) and results in a falling rate of profit (Heilbroner, 1999, p. 159). Because all firms are engaged in substituting technology for labor, the rate of profit falls across the economy and a crisis—that is, the low point of the business cycle—ensues (Harvey, 1983, p. 207; Heilbroner, 1999, pp. 160, 164). Production becomes unprofitable, bankruptcies and mergers occur, small firms fail, and layoffs result, leading to a drop in consumption (Heilbroner, 1999, p. 160).

When economic growth becomes hampered in the primary circuit of capital, private firms shift their capital from production to the secondary circuit of capital, or the built environment for the purpose of the continued expansion of surplus value (Badcock, 1989, p. 127; Harvey, 1983, pp. 202–203, 207; Harvey, 1985, pp. 6–7; Kaplan et al., 2009, p. 187; Smith & LeFaivre, 1984, p. 48; Walker, 1981, p. 406). The flow of capital into the secondary circuit is facilitated by capital markets and the state, and consists of investments in a "whole physical landscape for purposes of production, circulation, exchange and consumption" (Harvey, 1985, pp. 6–7; see also Harvey, 1983, pp. 202, 209, 211). The shift to the secondary circuit is made possible through the surplus in

capital and labor in relation to current production needs (Harvey, 1983, p. 202; Harvey, 1985, pp. 6–7).

Characteristics of the Built Environment. As Smith (1979, p. 541) states, investment in the secondary circuit of capital or built environment is a means for capital accumulation, but the idiosyncrasies of the built environment also act as a barrier to further accumulation (Harvey, 1983, p. 211; Harvey, 1985, p. 16; Smith, 1982, p. 147; Smith, 1986, p. 58). These characteristics include (1) the near-monopoly control of real estate, where individual landowners may choose not to sell their land for development, (2) the fixity of the building environment (real estate is fixed in place; therefore, development must wait until the current real estate reaches the end of its economic life, and consequently, new development must take place at other locations), and (3) the long turn over capital invested in real estate. Because the full benefits of real estate investment are obtained over a long period, investment in real estate is discouraged, especially if there are other, shorter, profitable investment vehicles. Fully built inner-city neighborhoods embodied these characteristics and therefore acted as a barrier to reinvestment, resulting in capital investment shifting outward to the metropolitan area periphery or suburbs (Clark, 1995, p. 1491; Hoyt, 1939, p. 362; Smith, 1979, p. 541; Smith, 1983, p. 284).

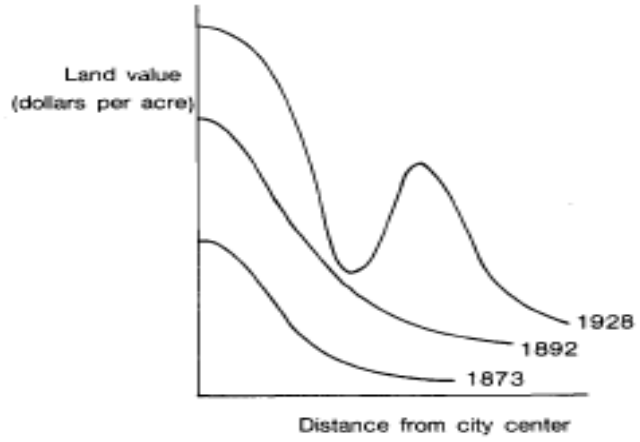
As capital moves into the secondary circuit, the markets allocate capital according to the potential for higher profits (Caris, 1996, p. 38; Smith, 1982, p. 148). Capital investment moves to the suburbs, and out of the central city, because returns are higher due to lower ground rents, compared to the central city (Downs, 1973, p. 1; Smith, 1986, p. 23; Smith, 2011, p. 235; Smith & LeFaivre, 1984, p. 48). While there are

many forces responsible for suburbanization, it is movement of capital into the secondary circuit and the idiosyncrasies of the built environment that explain the spatial expansion of the metropolitan area, or suburbanization (Ashton, 1984, pp. 60–63; Harvey, 1985, pp. 3–7; Smith, 1979, p. 541; Smith, 1983, p. 284; Smith, 1986, pp. 20, 22; Walker, 1981, pp. 395–404, 407).

Hoyt and Chicago. As an illustration of the interplay between capital accumulation and the characteristics of the built environment, Smith (1979, p. 541) cites Hoyt's (1933) work in Chicago. According to Smith (1979, p. 541), land values in early nineteenth-century eastern cites diplayed a conical form. Land values were highest nearest the central business district (CBD) and declined as the distance from the CBD increased (Hoyt, 1933, p. 297). Beginning after the depression of 1893–1897, industry, faced with the need to expand, moved out to the base of the cone, where land was cheapest and expansion was possible and profitable. Because of the characteristics of the built environment described earlier, the rehabilitation, reuse, and/or redevelopment of the central city was relatively more expensive, and so less profitable, compared to development in the suburbs. This movement of industry capital was followed by the movement of significant amounts of residential capital. At the same time that capital moved outward to the periphery, it was being withdrawn from the central city due to comparatively higher risk and lower investment returns, initiating a long period of inner-city decline (Smith, 1979, p. 542; Smith, 1982, p. 148; Smith, 1983, p. 285). The result of disinvestment was that inner-city land values declined relative to land values in the CBD and outer residential areas, where investment was still strong. The lower relative

land values of the central city are depicted by a depression or valley as shown in Figure 3 (Hoyt, 1939, p. 356).

Figure 3: The Evolution of Land Values in Chicago.



Hoyt (1933, pp. 355–356, 362) labeled this “valley” as “blighted” and described it as an area occupied by “races, nationalities and classes that are lowest on the social and economic scale.” It is an area with (1) low individual purchasing power, (2) a high percentage of rental collection losses, (3) physical deterioration of property, (4) obsolete improvements, and (5) occupied by buildings that are mostly more than 40 years old. In sum, Chicago is illustrative of how the drive for capital accumulation and the characteristics of the inner-city built environment drove industrial and eventually residential capital investment outward to the periphery (suburbs), where capital investment was more profitable due, in part, to lower land costs, and away from investment in the less profitable and more risky fully built central city (Hoyt, 1933, p. 320). The outcome of this process was relative decline or a valley in land values of the central city relative to the CBD and suburban land values and the physical, social, and economic decline of the area. There is evidence that this same process was

experienced in other older cities (Smith, 1979, p. 542; Edel & Sclar, 1975; J.T. Davis, 1965).

Part 2 –The Movement of Capital From Inner-City Neighborhoods, “Devalorization Cycle”

The devalorization cycle is a general framework explaining residential disinvestment from inner-city neighborhoods as a result of decisions by real estate interests (Caris, 1996, p. 33; Kary, 1988, pp. 56, 58; Smith, 1979, p. 543; Smith & LeFaivre, 1984, p. 49). The cycle is not inevitable, but it is an economically rational outcome of the land and housing markets (Smith, 1979, p. 543; Smith & LeFaivre, 1984, p. 49). This means that real estate interests value real estate primarily for what it can produce in profit—that is, its exchange value—rather than its use value; consequently, these interests desire to invest their capital where the potential for return on investment is the greatest. The consequence for inner-city neighborhoods is a reduction or withdrawal of capital, because investment returns are lower and risks higher compared to investment at the periphery (suburbs). According to Bradford and Rubinowitz (1975, p. 79), “While there is no Napoleon who sits in a position of control over the fate of a neighborhood, there is enough control by, and integration of, the investment and development actors of the real estate industry that their decisions go beyond a response and actually shape the market” (also see Checkoway, 1986; Fairbanks, 2000, pp. 32–33).

The devalorization cycle is recognized as a progression of changes in the physical condition and tenure of neighborhood housing (Smith, 1982, p. 147). The disinvestment cycle occurs at the neighborhood scale and results in a decrease in neighborhood house value and capitalized ground rent, which is reflected in lower sales

prices and rents relative to housing in newer neighborhoods. This decline in neighborhood sales prices and rents prepares the way for the profitable reinvestment of capital, or gentrification (Caris, 1996, p. 35; Kary, 1988, p. 58; Smith, 1979, p. 543; Smith, 1983, p. 288; Smith & LeFaivre, 1984, pp. 48–50). Not every neighborhood experiences the cycle, but those that do typically go through this cycle (Smith & LeFaivre, 1984, pp. 49–50).

The following is a brief description of the devalorization cycle. The cycle, which assumes the homogeneity of housing in terms of age and quality, occurs in five consecutive and overlapping stages: (1) new construction and the first cycle of use, (2) landlordism and homeownership, (3) blockbusting and blowout, (4) redlining, and (5) abandonment (Kary, 1988, pp. 56–58; Smith, 1979, pp. 543–545; Smith, 1983, pp. 288–292; Smith & LeFaivre, 1984, p. 49). During the first stage, the residential neighborhood is newly constructed and occupied. At this point, the ground rent is at its highest. As the neighborhood ages, its structures begin to depreciate (Appraisal Institute, 2007, p. 42; Appraisal Institute, 2008, p. 413; Kary, 1988, p. 56; Smith, 1979, p. 543; Smith, 1996, p. 63). Depreciation contributes to a reduction in the housing sale price relative to newer housing, but the total reduction in sale price also depends on how much the ground rent has changed (Appraisal Institute, 2007, p. 42; Smith, 1979, p. 543).

During the second stage, housing tenure and levels of investment begin to change. Homeowners, aware of the impending neighborhood decline, unless there is sufficient neighborhood-wide residential reinvestment, choose to sell their homes and seek newer homes where their housing investment will be more secure (Kary, 1988, p. 57; Smith, 1979, p. 544). The lack of investment and growing depreciation also initiates

a transition to rental tenancy (Kary, 1988, p. 57; Smith, 1979, p. 543; Smith, 1983, p. 288; Smith, 1984, p. 49; Smith, 1996, p. 63). In a declining market, underinvestment is a rational response by landlords, as they are unable to raise rents to a level that would repay their investment in structural improvements, maintenance, and repair, so disinvestment continues (Lake, 1979, p. 183; Lowry, 1960, p. 367; Smith, 1983, p. 289). Also, lenders become more hesitant in providing mortgage funding as declining rents and values weaken collateral value, making potential loans riskier (Smith, 1979, p. 543; Smith, 1996, pp. 65–66).

At this point, neighborhood-housing values begin to decline, and capitalized ground rent falls below potential ground rent (Smith, 1979, p. 544). Declining housing values are a function of physical deterioration and functional obsolescence of neighborhood housing. Falling capitalized ground rent is a function of external obsolescence, or the effect that depreciated structures across the neighborhood have on the desirability for the neighborhood as a place to live (Appraisal Institute, 2007, pp. 286, 306; Appraisal Institute, 2008, pp. 392, 442–443; Blackmore, 1943, p. 267; Kary, 1988, p. 58; Pavlov & Blazenko, 2005, p. 329; Simons, Quercia, & Maric, 1998, pp. 158–159; Smith, 1979, p. 543). Because the capitalized ground rent and house value are combined in the sales price, the price at which a property is sold reflects, in part, changes in the capitalized ground rent (Smith, 1979, p. 543).

In sum, the effect of disinvestment is increasing depreciation. The effect of depreciation is a drop in demand for neighborhood housing, and this drop, both in the house value and in the capitalized ground rent, is reflected in falling sale prices and rents (Smith, 1979, p. 545; Smith, 1996, pp. 67–68). Any single property owner at this

stage will find it nearly impossible to justify the investment in the rehabilitation of their property, as the property resides in an area of decline and cannot attract the sale price or rent necessary to justify—that is, to recover—their investment (Smith & LeFaivre, 1984, p. 51).

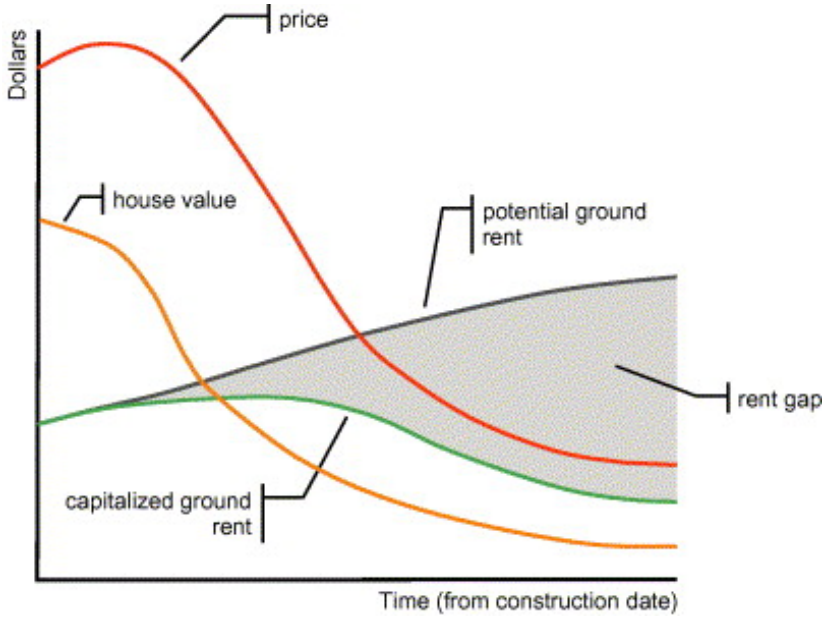
During the third stage, neighborhoods that did not transition to rental tenancy remain stable or experience a gentler decline. Milder decline is most likely caused by the limited capacity of homeowners to undertake necessary maintenance and upgrades (Kary, 1988, p. 57; Smith, 1979, p. 545). Real estate agents engage in blockbusting, where agents in a declining market exploit racist fears by getting white households to sell for a relatively cheap price and then sell them at a much higher price to minority families moving into the neighborhood (Bradford, 1979, p. 325). The effect is that new minority families have fewer resources to invest in home maintenance, which intensifies depreciation and falling values and rents (Smith, 1979, pp. 544–545; Smith, 1983, p. 291). Lastly, in a process called *blowout*, declining neighborhoods begin to push outward, against healthier middle-class neighborhoods that are sandwiched between expanding slum areas and wealthy neighborhoods. Owner occupants, in the areas being squeezed, sell their homes, often to landlords, and move to areas farther out (Harvey, 2009, p. 173; Smith, 1979, p. 544; Smith, 1983, p. 291). The fourth stage is characterized by redlining by larger lenders. Redlining is a "process by which goods or services are made unavailable, or are available only on less than favorable terms, to people because of where they live regardless of their relevant objective characteristics" (Squires, 1992, p. 2). The goods or services include home mortgage financing, home improvement financing, and even mortgage insurance (Ahlbrandt, 1977, p. 473;

Bradford, 1979, p. 314; Diappi & Bolchi, 2008, p. 8; Smith, 1979, p. 544; Smith, 1983, p. 291; Smith, 1996, p. 67). Larger financial institutions find that providing mortgage funds to suburbs, as opposed to inner cities, results in higher returns and lower risk of foreclosure and declining property values (Bradford, 1979, p. 320; Smith, 1979, pp. 544–545; Smith, 1983, p. 291; Smith, 1996, p. 66). As larger financial institutions withdraw capital, smaller lenders specializing in higher risk financing enter the neighborhood. Also, at this stage, landlords begin to subdivide their units, hoping to drive up the property's gross potential income, but ultimately this does not work and the landlord stops investing in maintenance and upgrades (Smith, 1983, p. 292).

In the final stage, after significant disinvestment and depreciation, landlords are unable to collect enough rent to pay basic operating costs, and properties in the neighborhood are abandoned. While the properties may remain structurally sound, they are abandoned because they are not profitable—that is, the economic life of the building has ended (Appraisal Institute, 2007, p. 287; Appraisal Institute, 2008, p. 413; Smith, 1979, p. 545; Smith, 1983, p. 292). In sum, the devalorization cycle explains the movement of capital out of inner-city residential neighborhoods as a rational act by real estate interests in search of greater profitability and lower risk. Over many years, as capital leaves inner-city neighborhoods, depreciation increases, resulting in a decline in house values and capitalized ground rent manifested in declining housing values and rents. As these housing becomes more affordable, lower income households move to these neighborhoods leading to the economic decline of neighborhood and blighted residential structures.

Rent Gap. The outcome after many years of devalorization is a rent gap that has grown so wide that real estate interests are sufficiently induced to reinvest in the central city (Feagin, 1986, p. 109; Smith, 1979, p. 545). See Figure 4 below. At this point, any of the real estate interests may initiate reinvestment, as returns are now commensurate with the risk and competitive with those found at the urban periphery. The needs of capital are paramount in explaining gentrification. The valley in land values that Hoyt detected, between the CBD and the outer residential areas in 1928, is to be understood as the geographic location of the rent gap reflecting the opportunity for profitable reinvestment.

Figure 4: Rent Gap



Smith's rent gap theory contradicts the neoclassic view that emphasizes consumer preferences as the principal cause of gentrification. As Smith (1979, p. 546) states, "these preferences are not prerequisites since they can be socially created," as in his example of the Society Hill neighborhood in Philadelphia. Society Hill, an area for well-to-do and upper- and middle-class households in the nineteenth century,

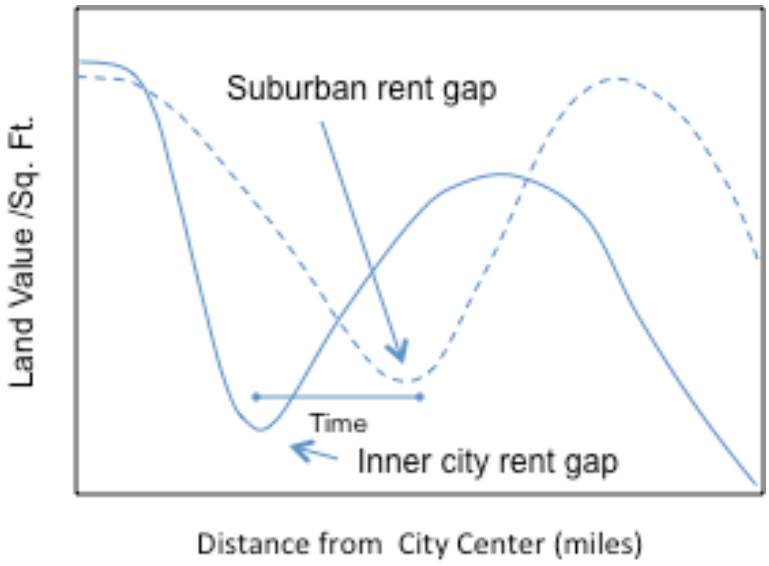
experienced significant decline with the advent of industrialization, remaining a slum up until about 1959. By 1970, this area had become transformed and returned to an area of higher and upper-middle-class households. Consumer preference, as a result of changes in lifestyle or the increased cost of commuting from some farther-out suburb, was identified as the most likely cause of the renewal (Smith, 1979, p. 540). However, while consumer preference or the needs of the gentrifier are necessary, "to explain the gentrification according to the gentrifier's actions alone, while ignoring the role of builders, developers, landlords, mortgage lenders, government agencies, real estate agents, and tenants, is excessively narrow" (Smith, 1979, p. 540). While, the relationship between the consumption and production of housing is interdependent, it is a relationship where the needs of production—that is, the need to earn a profit—are more influential than consumption in housing construction. The return to Society Hill was not so much the result of consumer preference as it was the ability of real estate interests to redevelop and rehabilitate these slum structures and sell or rent them for a profit. It is the needs of capital that constrain or set limits on the exercise of consumer preference with regard to the location of housing choice.

State's Role in the Devalorization Cycle. While Smith's theory emphasizes the role of private real estate interests in gentrification; the state plays an important role by reducing the limitations established by the idiosyncrasies of the built environment. It may assist in property assemblage (i.e., voluntary or involuntary sale), as it may become too costly and risky for a developer to attempt to assemble the requisite number of properties needed to construct a project of sufficient size required to absorb all of the additional costs. The state may also intervene, before a neighborhood

becomes a slum and harder to turn around, by purchasing properties and selling them to a developer at a price that makes reinvestment possible (Smith, 1979, p. 545). In this case, the state bears the costs of the last stage of devalorization. Tools such as tax increment financing, tax abatement, and grants are sources used to bear the last stages of devalorization. As gentrification occurs, ground rent becomes fully capitalized—that is, land is at its highest and best use, beginning a new cycle of devalorization (Smith, 1979, p. 545).

Applicability of Smith's Theory to Suburban Decline. The rent gap developed as the disinvestment process directed capital to the urban periphery, where the ground rent was less expensive, and away from the central city (Caris, 1996, p. 47). The valley of land values that Hoyt first recognized in Chicago in 1928 was evidence of the rent gap. With the substantial amount of suburbanization that occurred from the 1940s through the 1960s, the valley of land values "deepened and broadened due to the lack of productive capital investment" (Bowman & McDonald, 1979, p. 33; see also Smith, 1983, p. 285). Thus, over 65 years of suburbanization (1945–2010), it is expected that the valley in land values, or the rent gap, has extended into inner suburbs.

Figure 5: Suburban Rent Gap.

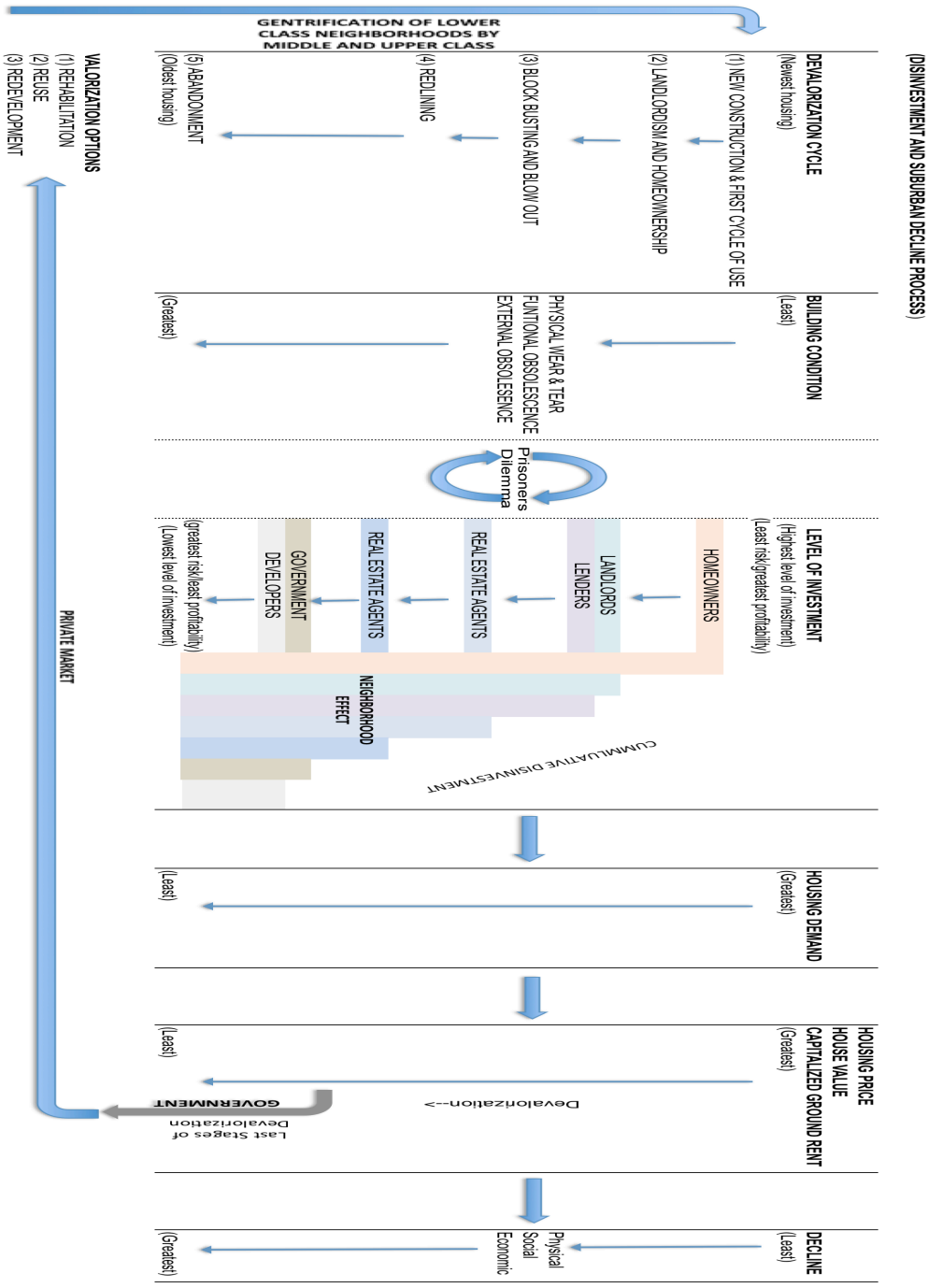


The decline of inner suburban neighborhoods is initiated and becomes apparent after many years or even decade of capital disinvestment in housing.

Without new housing investment, demand for housing in the older neighborhoods—relative to newer housing at the metropolitan periphery—declines, because of its worn physical state and functional obsolescence, resulting in a decline in neighborhood housing values (Adams, 1991, p. 109; Ahlbrandt & Brophy, 1975, pp. 9–11; Caris, 1996, pp. 4, 32; Diappi & Bolchi, 2008, p. 8; Smith, 1983, p. 292; Walker, 1981, pp. 385, 407). Lower-income persons are often drawn to purchase homes or rent apartments in these declining neighborhoods, as they are more affordable compared to newer neighborhoods (Hanlon, 2010, p. 147). Building deterioration accelerates because lower-income households and landlords in these neighborhoods have a greater difficulty in paying for and justifying investment—that is, property maintenance and improvements (Ahlbrandt & Brophy, 1975, p. 5; Baer & Williamson, 1988, p. 127;

Hanlon, 2007, p. 16). Noticeable deterioration may even intensify as property owners become aware of the deterioration and, as a result, may be less inclined to make improvements for fear of not achieving a reasonable return (Caris, 1996, p. 5). Figure 6 provides a conceptual visual depiction of the devalorization process and the resultant neighborhood decline.

Figure 6: Devalorization Process and Neighborhood Decline.



The vie e ecological school of thought that places the initial cause of neighborhood decline on who moves into the neighborhood, specifically lower-income and minority households

(Caris, 1996, pp. 39, 43; Caris et al., 2001, pp. 497–498; Kaplan et al., 2009, p. 185; Park & Burgess, 1925, pp. 68, 75). In fact, however, capital begins leaving a neighborhood many years or even decades before lower-income residents show up (Caris, 1996, pp. 5–6, 32, 39–40; Caris et al., 2001, pp. 501, 503).

CONTRIBUTION TO THEORY

Causes of neighborhood change fall into one of three perspectives; these are the (1) ecological, (2) subcultural, and (3) political economy perspectives. Beginning in the 1920s, the ecological perspective and its variants argued that neighborhood change was initiated by forces larger than the neighborhood, such as transportation improvements or the establishment of new industries. The individual in the neighborhood, is powerless against these forces, and responds to these forces by choosing to move from one neighborhood to another. The cumulative effect of these moves leaves some neighborhoods better off than others and is seen as a natural consequence of the competition between groups for space. Because these changes are understood as uncontrollable by, and beneficial to, residents, efforts at neighborhood stabilization are hard to justify. Consequently, there is no real role for public policy other than to ensure a smooth-functioning market.

In the 1930s, the subcultural perspective appeared as a response to the flaws of the ecological perspective. The subcultural perspective rejects the economic determinism of the ecological perspective, and claims that neighborhoods have certain cultural, aesthetic, historical, familial qualities that act to retain, attract, and resist certain types of people. Furthermore, while forces larger than the neighborhood, intrinsic in the ecological and political economy perspectives are responsible for initiating change, the

fact that neighborhood residents derive satisfaction from these unique neighborhood qualities motivates them to become proactive in maintaining their neighborhood identity in the face of these forces. Moreover, the subcultural perspective rejects the notion, implied in the ecological perspective, that all neighborhoods are composed of one uniform culture. In fact, neighborhood heterogeneity is confirmed through a number of ethnographic neighborhood studies that emphasize the role of ethnic identity in stabilizing neighborhoods. According to Temkin and Rohe (1996, p. 162), all neighborhoods do not follow the same course. If neighborhood change is the result of external forces, then why do some neighborhoods remain stable and others decline? The subcultural perspective does not so much provide an explanation for neighborhood change as it does neighborhood stability, which results from strong neighborhood attachment in the face of capital interests and the need for profits.

Lastly, making its appearance in the 1970, in response to the ecological perspective's weakness in explaining urban problems, was the political economy perspective, which emphasizes the struggle between capitalist relations of production. The political economy perspective claims that neighborhood change is the result of the conflict of between capital and labor, and the drive by powerful elites to facilitate capital accumulation. Conflict is initiated when investors seek greater and greater profitability by raising rents, pursuing property renovation, conversion, or sale, which results in tenants being forced to move because units are no longer affordable or available. In other cases, development initiatives often move ahead, even in the face of strong local opposition, resulting in changes in the social and economic characteristics of the neighborhood.

In the face of these larger forces, both the subcultural and political economy perspectives emphasize establishing grassroots organizations to resist neighborhood change. But organizing is not enough, the political economy perspective directs the neighborhood organization to petition city hall for resources and greater influence in the battle between capital's pursuit of exchange value and the neighborhood organization's goal of maintaining their neighborhood use value. Both the political economy and ecological perspectives agree that neighborhood change originates from forces larger than the neighborhood. Where they disagree is on the specific forces of change. For the political economist change is the result of the ongoing drive for capital accumulation, not as the ecological perspective claims from population growth or technological change.

This dissertation is an attempt to apply Smith's theory of gentrification to help understand and explain the cause of suburban decline. Smith's theory falls into the political economy perspective because of its emphasis on the role of capital, and the capitalist mode of production in explaining the form of the built environment. While this dissertation does not claim that the other theoretical perspectives, particularly the ecological perspective, have no value in explaining suburban decline. It does assert that Smith's theory provides a more comprehensive explanation for suburban decline, because the satisfaction of the needs of capital, in the growth and decline of the built environment, is so fundamental and essential. The entire privately built environments is a result of countless decisions grounded in the fact that investment in the built environment must produce an acceptable return. According to Smith (1979, p. 540) gentrification must take into account, the often ignored, role of the producers that is, builders, developers, landlords, mortgage lenders, government agencies, real estate

agents, as well as consumers in the production, of the built environment. Smith's theory emphasizes the satisfaction of the needs of capital, as the main force in growth, as well as decline, of the built environment, while the ecological perspective emphasizes the role consumer demand in response to forces larger than the neighborhood. According to Smith (1979, p. 540) the "relationship between production and consumption of the built environment is symbiotic, but it is a symbiosis in which production dominates." This dissertation asserts that the ecological perspective has become to dominate in the thinking regarding neighborhood decline, while the political economy perspective has largely been ignored. This is probably because, in part, that the promotion of economics, and the notion of the consumer as sovereign, as means to defining and solving any problem have so blinded and constrained the thinking of people, that they can envision no other way of looking at, or solving problems. Moreover, it is also because the role of capital in neighborhood decline is not directly visible compared to the movement of people in an out of a neighborhood. As was stated earlier, conventional wisdom often lays the blame for neighborhood decline on who moves in and out (the ecological perspective), as this is easily and immediately observable, whereas, the role of capital in neighborhood decline (political economy perspective) is much less visible, and the consequences of its withdrawal or reduction may not be experienced till many years after the fact. This dissertation attempts to raise awareness of the significant role that capital plays in suburban decline.

Empirical studies of Smith's theory of gentrification, that this author could find, are few. Badcock's (1989, p. 141) study of 30 local government areas in metropolitan Adelaide, Australia; Clark's (1988, pp. 251–252) study of six areas in Malmo, Sweden;

Hammel's (1999, p. 141) study of nine redevelopment parcels in Minneapolis; and Kary's (1988, pp. 69–72) study of the Cabbagetown/Donvale neighborhood in Toronto all found evidence, to a greater or lesser degree, supporting Smith's theory of gentrification, specifically, the rent gap and the valley in land values.

Caris's (1996, pp. 202, 212) study of 37 municipalities in Camden County, New Jersey, is unique in that he applied Smith's theory, initially proposed as an explanation for inner-city decline, to a new geography: the suburbs. Caris's analysis suggested that signs of disinvestment appeared in certain inner and older suburbs as early as the mid-1970s. The study found that (1) disinvestment occurred in suburbs adjacent to the central city of Camden, (2) there were areas characterized by weak investment, indicating emerging disinvestment, and (3) disinvestment was sectoral in nature. This author could find no other application of Smith's theory to a U.S. suburban geography and the question of suburban decline.

This research applies Smith's theory of gentrification to the suburbs in the Minneapolis–St. Paul metropolitan area to determine its applicability in explaining suburban decline, specifically, inner suburban decline. Consequently, this research contributes to existing theory in three ways: (1) it adds to the theory's limited empirical base, (2) it builds on Caris's (1996) research as a second application of Smith's theory to a U.S. suburban geography and the question of suburban decline, and (3) it expands on Caris's (1996) research by applying Smith's theory to a much larger geographic area, the seven-county Minneapolis–St. Paul metropolitan area, in contrast to Caris's single-county application.

In summary, this study examines the role of capital disinvestment from residential housing stock in inner suburbs as a cause of decline. Specifically, this dissertation is the first application of Smith's theory of gentrification, as a theoretical explanation for suburban decline, to a large metropolitan area, and only the second application of Smith's theory to the question of suburban decline. This dissertation hopes to reveal the largely hidden influence of capital—that is, residential capital disinvestment—as a primary cause of the physical, social, and economic decline of inner suburbs.

RESEARCH HYPOTHESES

This research attempts to identify disinvestment, evidenced by the spread of the valley in land values to the inner suburbs. Specifically, this dissertation attempts to answer three questions: (1) Is inner suburban disinvestment greater compared to outer suburbs, (2) Has inner suburban disinvestment increased to a greater degree compared to outer suburbs, and (3) Has inner suburban disinvestment accelerated faster compared to outer suburbs during the period 1980 through 2010. It is hypothesized that the answer to these three questions is, yes.

The specific hypotheses, identified below, are chosen based upon two characteristics: (1) the definition of inner suburbs that identifies the geography of disinvestment, and (2) when, according to Smith's theory, disinvestment begins. First, an inner suburb is defined as any suburb that shares a boundary with a central city, or a suburb that shares a boundary with another suburb that is adjacent to the central city where more than 50 percent of the housing stock was built before 1969 (Hanlon, 2010, p. 33). Inner suburbs are primarily composed of single-use subdivisions constructed beginning near the end of WWII. Given the location of inner suburbs, and the

assumption that the metropolitan area is mono-centric with growth proceeding outward from the center, it is hypothesized that, as suburbanization, which began after 1940 has continued, disinvestment evidenced by the valley in land values has spread outward from inner city residential neighborhoods to inner suburbs. It is implied that the older the housing, the more it experiences physical wear and tear, function and external obsolescence, which indicates disinvestment.

Second, the years of analysis where chosen based upon when inner suburban disinvestment is assumed to have started, and the availability of data. According to Smith, disinvestment becomes noticeable near the end of the first cycle of use (Smith, 19789, p. 543). The length of the first cycle of use is not specifically defined by Smith, but is can be assumed it begins 15 to 25 years after the residential subdivision is first constructed, as depreciation (see definition p. 60) takes time to become noticeable. Consequently, as the initial development of inner suburbs started roughly after 1940, it would suggest that inner suburban disinvestment started somewhere between 1955-1965, (1940+15, and 1940 + 25) which would indicate the end of the first stage of the devalorization cycle. Furthermore, beginning the analysis before 1980 was not possible given the fact that the data used in this dissertation, (median home value, and median gross rent) were unavailable in the form required.

Hypothesis 1: For the years 1980, 1990, 2000, and 2010, the level of residential disinvestment is greater in inner suburbs compared to outer suburbs. Null Hypothesis: The level of disinvestment is no greater in inner suburbs compared to outer suburbs.

Hypothesis 2: For the periods 1980 to 1990, 1990 to 2000, 2000 to 2010, and 1980 to 2010, the rate of disinvestment is greater in inner suburbs compared to outer

suburbs. Null Hypothesis: The rate of disinvestment in inner suburbs is no greater compared to outer suburbs.

Hypothesis 3: Comparing the rate of change between the decades of 1980–1990 and 1990–2000, and between 1990–2000 and 2000–2010, the rate of disinvestment in inner suburbs is accelerating compared to outer suburbs. Null Hypothesis: The rate of acceleration of disinvestment in inner suburbs is no greater compared to outer suburbs.

DEFINITION OF TERMS

(1) *Capital accumulation*: The reinvestment of surplus value, in labor and technology, in search of greater surplus value (Heilbroner, 1999, p. 158).

(2) *Capitalized ground rent:* The actual quantity of ground rent that is appropriated by the landowner given the present land use (Smith, 1979, p. 543). Ground rent in Smith's definition is the same as land value.

(3) *Decline:* Changes in the housing market (falling property values), physical changes (deteriorating structures), and social changes (migration of lower-class households and declining financial status of the population) (Caris, 1996, p. 32).

(4) *Depreciation:* The difference between the reproduction or replacement cost of an improvement and its market value (Appraisal Institute, 2007, pp. 283, 286). Depreciation reduces the value of an existing structure in comparison with its replacement or reproduction cost. Depreciation is caused by physical deterioration, functional obsolescence, and external obsolescence (Appraisal Institute, 2007, p. 283; Smith, 1979, p. 543; Smith, 1996, p. 63).

(5) *Devalorization:* The reduction in house (structure) value, due to depreciation, plus the reduction in ground rent (Smith, 1979, p. 543).

(6) *Disinvestment:* The withdrawal or diminishment of capital investment, homeowners, landlord, and lenders, in certain urban areas (Caris, 1996, p. 3)

(7) *Economic life:* The period over which improvements to real property contribute to property value (Appraisal Institute, 2007, p. 287; Appraisal Institute, 2008, p. 413).

(8) *External obsolescence:* A reduction in the utility, salability, or rentability of the building due to a negative influence outside the property—for example, the physical condition of neighboring properties, or improvements in building technology that result in the same structure being produced at a lower cost, or a structure with poor access to transportation and transit routes (Appraisal Institute, 2007, pp. 286, 306; Appraisal Institute, 2008, p. 413; Smith, 1979, p. 543).

(9) *Functional obsolescence:* A product flaw in structure, material, or design (compared to current market standards) that reduces a structure's function, utility, or value (Appraisal Institute, 2007, p. 285; Appraisal Institute, 2008, pp. 392, 413; Smith, 1979, p. 543).

(10) *Gentrification:* The redevelopment and rehabilitation of inner-city areas by middle and upper classes (Smith, 1984, p. 53).

(11) *Highest and best use:* The reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, and financially feasible, and which results in the highest value. The four criteria that highest and best use must meet are legal permissibility, physical possibility, financial feasibility, and maximum productivity (Appraisal Institute, 2007, p. 221).

(12) *Inner suburb:* Any suburb that shares a boundary with a central city, or a suburb that shares a boundary with another suburb that is adjacent to the central city where more than 50 percent of the housing stock was built before 1969 (Hanlon, 2010, p. 33).

(13) *Minneapolis–St. Paul metropolitan area:* All cities and townships in the counties of Hennepin, Ramsey, Anoka, Washington, Carver, Dakota, and Scott.

(14) *Outer suburb:* Any suburb not classified as an inner suburbs.

(15) *Potential ground rent:* The amount of ground rent that could be capitalized under the land's highest and best use (Smith, 1979, p. 543).

(16) *Physical deterioration:* The result of the wear and tear that a building experiences from regular use over time, reducing its value (Appraisal Institute, 2007, p. 284; Appraisal Institute, 2008, p. 413; Smith, 1979, p. 543).

(17) *Primary circuit of capital:* Investments that are necessary for and directly related to production, such as raw materials, labor, machines, and tools that are used to make products (Kaplan et al., 2009, p. 186).

(18) *Real estate interests:* Homeowners, landlords, lenders, real estate agents, and developers (Smith, 1979, pp. 545–546).

(19) *Redlining:* Lender behavior that, without justification, denies or limits credit to specific neighborhoods (Barth, Cordes, & Yezer, 1979, p. 102; The Urban Institute, 1999, p. 12).

(20) *Rent gap:* The disparity between the potential ground rent and the actual ground rent capitalized under the present land use (Smith, 1979, p. 545).

(21) *Residential disinvestment:* Disinvestment from owner-occupied and rental property as determined separately.

(22) *Secondary circuit of capital:* Investments necessary for, but not directly related to, production or consumption. The circuit consists of (1) a fixed asset fund, which consists of items used to aid production, such as industrial and commercial buildings, highways, and roads, and (2) a consumption fund, which consists of items used to aid consumption, such as houses, roads, parks, sidewalks, and so on. Some items, such as roads and sewer systems, can be part of both funds (Harvey, 1978, pp. 9–10).

(23) *Surplus value:* The difference between what workers earn to produce an item and what the item sells for. Part of surplus value goes to pay rent, taxes, and other costs of doing business as well as the owner's profit (BookCaps, 2011, pp. 30, 37; Heilbroner, 1980, pp. 109–110; Heilbroner, 1999, p. 157; Mandel, 1973, p. 37).

GENERAL METHODOLOGY

The general methodological approach chosen for this research is quantitative. Previous empirical studies of Smith's theory of gentrification (Badcock, 1989; Clark, 1988; Hammel, 1999; Kary, 1988; Ley, 1986) also reflect a quantitative approach. Furthermore, this study attempts to build on, at the metropolitan area scale, quantitative research that was completed in Camden County, New Jersey, in 1996 (Caris, 1996, p. iii). Caris's (1996, pp. 202, 212) study of 37 municipalities in Camden County, New Jersey, is unique in that he applied Smith's theory, initially proposed as an explanation for inner-city decline, to a new geography: the suburbs. Caris's analysis suggested that signs of disinvestment appeared in certain inner and older suburbs as early as the mid-

1970s. The study found that (1) disinvestment occurred in suburbs adjacent to the central city of Camden, (2) there were areas characterized by weak investment, indicating emerging disinvestment, and (3) disinvestment was sectoral in nature. This dissertation applies Smith's theory to a larger geography, a large metropolitan area to provide a more comprehensive evaluation of the relevance of Smith's theory to the experience of suburban decline.

METHODOLOGICAL APPROACH AND RATIONALE

The methodological approach for this research is the descriptive case study. Smith's theory of gentrification, as a possible explanation for suburban decline, has been applied only once in a descriptive case study of Camden County, New Jersey, in 1996 (Caris, 1996, p. 129). To determine the degree to which Smith's theory may be applicable, further descriptive research is needed. The descriptive case study approach is chosen for this research because it provides the first application of Smith's theory, as an explanation for suburban decline, to one entire metropolitan area. Because much of the most notable and recent research describing suburban decline focuses on larger metropolitan regions, and their inner suburbs, it makes sense that this research, regarding the cause of decline, covers the same geography to determine the connection between the cause of decline and the geography of decline as described by the existing research. Furthermore, while the ability to generalize from the Minneapolis-St. Paul metropolitan area may be limited as this is the first application of Smith's theory to an entire metropolitan area, this research does provide a template that is easily applied to other metropolitan areas. And as this research is repeated in other metropolitan areas, the ability to generalize from the results improves.

VARIABLES

This research attempts to identify disinvestment in inner suburbs by locating the position and historical movement of the valley in land values that is associated with the level of capitalized ground rent. This research hypothesizes that the valley in land values that was first noticed in the central city has spread outward to encompass inner suburbs. If the evidence supports this hypothesis, then the capitalized ground rent would be relatively lower (indicating a greater level of disinvestment) in inner suburbs compared to outer suburbs farther from the central cities of Minneapolis and St. Paul.

It is disinvestment, defined as the withdrawal or diminishment of capital investment, homeowners, landlord, and lenders, in certain urban areas, by real estate interests (homeowners, landlords, lenders, real estate agents, developers) that, results in a lower capitalized ground rent. Disinvestment at the neighborhood scale results in increasing depreciation through little or no rehabilitation, reuse, and redevelopment of the existing housing stock. Disinvestment takes many forms and is undertaken by a variety real estate interests. Forms of disinvestment include the withdrawal or reduction of homeowner and landlord equity and/or the provision of construction and permanent financing by lenders for acquisition or rehabilitation (Seidman, 2005, pp. 133–157; Squires, 1992, p. 2). It includes actions undertaken by real estate agents and mortgage insurance companies. It also includes the lack of, or the withholding of public funding or financing by local governments, which creates the possibility rehabilitation and reuse, or for redevelopment by bearing the costs of the last stages of devaluation (Smith, 1979, p. 546). As depreciation increases, the demand for neighborhood housing decreases because consumers find this housing less desirable relative to newer housing. The

declining demand results in a lower relative capitalized ground rent, which creates the valley in land values evidenced by lower neighborhood home values and rents (Smith, 1979, p. 541).

Identifying the valley in land values requires measuring the level and change in the capitalized ground rent. This type of data is very difficult to impossible to obtain in the United States (Caris, 1996, p. 128; Hammel, 1999, p. 141). Of six empirical studies of Smith's gentrification theory that this author could find, studies by Badcock (1989, pp. 127, 129) and Kary (1988, p. 61) use area average sales price data to measure capitalized ground rent. Both Clark (1988, p. 247) and Hammel (1999, p. 121) use a combination of assessed land value and property sales data. The weakness of using property sales data is that the land value cannot be separated from the total sale price, and it only represents those properties that were sold and ignores the rest (Badcock, 1984, p. 129; Clark, 1988, p. 247). A weakness of assessed data is that it is only an estimate of market value (Hammel, 1999, pp. 124–126). A study by Ley (1986, p. 528) uses the ratio between metro area and inner-city house value and rental cost. But neither of these ratios identifies the existence or size of the rent gap (Clark, 1988, p. 245).

Because of the difficulty in directly measuring capitalized ground rent, Caris (1996, p. 128) uses measures of disinvestment (sale price, conventional financing, and tax delinquency data) to indirectly measure the level of capitalized ground rent—that is, the position and historical movement of the valley in land values. Tax delinquency assumes that if landlords are not paying their property taxes, they perceive the market to be declining, as reflected in lower rents (Lake, 1979, p. 183).

Measures of sale price, assessed value, and tax delinquency data are unavailable at the scale and time period needed for this research. Therefore, this research will use (1) median home value and (2) median gross rent to indirectly measure the capitalized ground rent and the historical level and movement of the valley in land values. The theoretical justification for using median home value and gross median rent is based on Smith's (1979, p. 541) statement that "since land and buildings are inseparable, the price at which buildings change hands reflects the ground rent level." Unlike sales price, median home value and median gross rent reflect the value of all properties in the city, but suffer from the same shortcomings as using the sale price and assessed market value.

ASSUMPTIONS

(1) Real estate interests value property for its exchange value more than for its use value (Smith, 1979, pp. 545–546).

(2) Households want the best housing they can afford.

(3) Capital disinvestment, which leads to greater depreciation and decreasing relative demand for neighborhood housing, is an influential factor in determining the level of capitalized ground rent and, consequently, neighborhood physical, social, and economic decline (Smith, 1979, pp. 545–546). This research acknowledges that there can be other factors, both society-wide and neighborhood based, that influence demand for housing in a certain neighborhood (Bradbury, Downs, & Small, 1982, pp. 8, 68–83). For purposes of this research, it is assumed that society-wide factors will affect all cities in the research area similarly and that there is not enough difference in city traits, in

terms of crime, tax rates, amenities, and so on, to unduly influence housing demand relative to other cities.

(4) The metropolitan area is mono-centric, with growth proceeding outward from the center (Smith, 1979, p. 541).

LIMITATIONS

(1) *Capitalized ground rent:* Measuring capitalized ground rent requires obtaining accurate measures of neighborhood land values. In previous empirical studies, sale price or assessed market value was used to measure capitalized ground rent. The preferable data would be actual measures of capitalized ground rent. According to this author's discussions with the U.S. Census Bureau, the Federal Reserve Bank of Minneapolis, the Minnesota Department of Revenue, the Minnesota Housing Finance Agency, the Metropolitan Council, and county assessing departments, actual measures of capitalized ground rent do not exist. Furthermore, property sales prices and assessed value data for the scale (all cities in the seven-county metropolitan area) and time period (1980–2010) required for this research are either unavailable or available only for very short periods of time. So the variables (1) median home value and (2) median gross rent are used and are an approximation of capitalized ground rent.

(2) *Research scale:* Although it would be worthwhile to examine disinvestment at the census tract scale, this research will not. Normalized census tract data for the time period 1980 to 2010 is not yet available from Geolytics. It is anticipated that this data will be available later in 2013.

MEASUREMENTS/INSTRUMENTS

Median Home Value and Median Gross Rent

Median home value is the median of all respondent estimates of how much their property (house and lot, mobile home and lot, or condominium unit) would sell for if it were for sale, as reported on the Census long-form questionnaire (United States Census Bureau, 2000, p. B-66).

Median gross rent is the median of the monthly rent payments as reported by all respondents on the Census long-form questionnaire (United States Census Bureau, 2000, p. B-54). Gross rent includes the cost of utilities. The median home value and gross rent are provided in the 1980, 1990, 2000, and 2010 censuses.

POPULATION AND SAMPLE PLAN

The methodological approach for this research is the descriptive case study. The specific case to be analyzed is the Minneapolis–St. Paul region between 1980 and 2010. The study area to be examined includes 192 cities and townships in seven counties.

SAMPLE SIZE

The specific case to be analyzed is the Minneapolis–St. Paul metropolitan area between 1980 and 2010. The area to be examined includes approximately 192 cities and townships in seven counties. This case is chosen because (1) the data is available for this geography and (2) time and expense limitations prevent an increase in the number of cases.

EXPECTED SITE

This is not applicable.

SITE PERMISSION

No particular permission is required to perform this research.

PARTICIPANT CONTACT AND ETHICAL CONSIDERATIONS

There are no specific ethical considerations. This research does not include human subjects.

DATA COLLECTION/PROJECT DESIGN

Median Home Value, Median Gross Rent

Median home value and median gross rent will be obtained from Geolytics (http://www.geolytics.com). Geolytics will prepare a customized report in an Excel file and deliver it via email. The report will contain the median home value and median gross rent for all cities in the Minneapolis–St. Paul metropolitan area for each of the years 1980, 1990, 2000, and 2010. The cost for the report is $500.

The results of the research will be displayed on colored maps provided by Flatrock Geographics, LLC, of St. Paul, MN. The cost is $750.

DATA ANALYSIS

This section details the analytical methods that will be used to answer the hypotheses. The analysis comprises three parts and will examine (1) the relative level, (2) the rate of change in the relative level, and (3) the rate of the rate of change in the relative level of median home value and median gross rent as an indirect measure of capitalized ground rent and disinvestment for cities in the Minneapolis–St. Paul metropolitan area, specifically comparing inner and outer suburbs.

The first part analyzes the relative level of residential disinvestment for each suburb in 1980, 1990, 2000, and 2010. During these periods, it is hypothesized that the

level of residential disinvestment is greater in inner suburbs compared to outer suburbs, which would indicate that the position and historical movement of the valley in land values is moving farther outward, into the inner suburbs. If the evidence supports the hypothesis, inner suburban *z*-scores would be to the left of, and farther from the median compared to, outer suburbs' *z*-scores.

The second part analyzes the rate of change in the relative level of residential disinvestment for each city during the periods of 1980–1990, 1990–2000, 2000–2010, and 1980–2010. It is hypothesized that during these periods the increase in residential disinvestment is greater in inner suburbs compared to outer suburbs, which would indicate that the valley in land values is deepening. If the evidence supports the hypothesis, inner suburban *z*-scores would be to the left of, and further from the median compared and outer suburbs z-scores.

The third part analyzes the rate of the rate of change in the relative level of residential disinvestment by comparing the periods 1980–1990 with 1990–2000, and 1990–2000 with 2000–2010 with the Minneapolis St. Paul metropolitan area. It is hypothesized that the rate of disinvestment in inner suburbs is accelerating faster compared to outer suburbs, which would indicate that the deepening of the valley in land values is accelerating. If the evidence supports the hypothesis, inner suburban *z*-scores would be to the left of, and farther from the median compared to, outer suburbs' *z*-scores.

Analyzing the Level of Residential Disinvestment

This first part analyzes the relative level of residential disinvestment for both owner-occupied and rental property. Analyzing the disinvestment for each suburb

establishes its initial position and identifies how that position does or does not change over 30 years relative to other suburbs. It also illustrates the geography of disinvestment over that same period. It is hypothesized that the level of disinvestment is greater in inner suburbs compared to outer suburbs, which would indicate that the position and historical movement of the valley in land values is moving farther outward into the inner suburbs.

Median Home Value and Median Gross Rent

Step 1: Each suburb will be listed, in alphabetical order, in column A of an Excel spreadsheet.

Step 2: The 1980 median home value for each suburb will be entered into column B, and the standard deviation calculated.

Step 3: The median for the Minneapolis–St. Paul metropolitan area will be entered into column C.

Step 4: The *z*-score for each suburb will be calculated by subtracting the Minneapolis–St. Paul metropolitan area median (column C) from each suburb's median (column B) and then dividing that result by the standard deviation (column B) for all suburbs' median home values. This result will be entered into column D.

Step 5: The *z*-scores will be categorized according to the following table:

Designation	*z*-Score
Strong Level of Investment	> 1.00
Moderate Level of Investment	.51 – 1.00
Weak Level of Investment	.01 – .50
Median	.00
Weak Level of Disinvestment	(.01) – (.50)
Moderate Level of Disinvestment	(.51) – (1.00)
Strong Level of Disinvestment	< (1.00)

Step 6: These scores will be mapped using Arcview GIS according to the following color scheme:

Designation	Color Scheme
Strong Level of Investment	Darkest Green
Moderate Level of Investment	Darker Green
Weak Level of Investment	Light Green
Median	White
Weak Level of Disinvestment	Light Red
Moderate Level of Disinvestment	Darker Red
Strong Level of Disinvestment	Darkest Red

Step 7: Steps 1–6 will be repeated for census years 1990, 2000, and 2010.

Step 8: Steps 1–7 will be repeated for median gross rent.

Analyzing the Rate of Change in Level of Residential Disinvestment

This second part analyzes the rate of change in the relative level of residential disinvestment. Analyzing the rate of change of disinvestment for each suburb identifies how the level of disinvestment changes over 30 years relative to other suburbs. It also identifies where disinvestment may be increasing as well as emerging. It is hypothesized that during these periods, the increase in disinvestment is greater in inner suburbs compared to outer suburbs, which would indicate that the valley in land values is deepening. The following details how the change in the level of disinvestment will be analyzed in this research.

Median Home Value and Median Gross Rent

Step 1: Each suburb will be listed, in alphabetical order, in column A of an Excel spreadsheet.

Step 2: The median home values for each suburb for the years 1980 and 1990 will be entered into columns B and C, respectively.

Step 3: The difference between columns B and C will be calculated and entered into column D, and the standard deviation calculated.

Step 4: The median home value for the Minneapolis–St. Paul metropolitan area for the years 1980 and 1990 will be entered into columns E and F, respectively.

Step 5: The difference between columns E and F will be calculated and entered into column G.

Step 6: The *z*-score for each suburb will be calculated by subtracting the difference between the Minneapolis–St. Paul metropolitan area median value for 1980 and 1990 (column G) from the difference for each suburb's median home value for 1980 and 1990 (column D) and then dividing that result by the standard deviation for all suburbs' differences in median home values (column D). This result will be entered into column H.

Step 7: The *z*-scores will be categorized according to the following table:

Designation	*z*-Score
Strong Increase in Investment	> 1.00
Moderate Increase in Investment	.51 – 1.00
Weak Rate of Investment	.01 – .50
Median	.00
Weak Increase in Disinvestment	(.01) – (.50)
Moderate Increase in Disinvestment	(.51) – (1.00)
Strong Increase in Disinvestment	< (1.00)

Step 8: These scores will be mapped using ArcView GIS according to the following color scheme:

Designation	Color Scheme
Strong Increase in Investment	Darkest Green
Moderate Increase in Investment	Darker Green
Weak Rate of Investment	Light Green
Median	White
Weak Increase in Disinvestment	Light Red
Moderate Increase in Disinvestment	Darker Red
Strong Increase in Disinvestment	Darkest Red

Step 9: Steps 1–8 will be repeated for the periods 1990–2000, 2000–2010, and 1980–2010.

Step 10: Steps 1–9 will be repeated for median gross rent.

Analyzing the Rate of the Rate of Change in Level of Residential Disinvestment

The third task analyzes the rate of the rate change in the relative level of residential disinvestment. Analyzing the rate of the rate of change in disinvestment identifies where disinvestment may be accelerating. It is hypothesized that the rate of the rate of change of disinvestment in inner suburbs is accelerating compared to outer suburbs. The following details how the rate of acceleration of disinvestment will be calculated.

Step 1: Each suburb will be listed, in alphabetical order, in column A of an Excel spreadsheet.

Step 2: The median home value for each suburb for 1980, 1990, and 2000 will be entered into columns B, C, and D, respectively.

Step 3: The difference between 1980 and 1990, for each suburb, will be calculated and divided by 10 (years) and entered into column E.

Step 4: The difference between 1990 and 2000, for each suburb, will be calculated and divided by 10 (years) and entered into column F.

Step 5: The difference between columns E and F will be calculated and entered into column G, and the standard deviation calculated.

Step 6: The median home value for the Minneapolis–St. Paul metropolitan area for 1980, 1990, and 2000 will be entered into columns H, I, and J, respectively.

Step 7: The difference between 1980 and 1990, for the Minneapolis–St. Paul metropolitan area, will be calculated and divided by 10 (years) and entered into column K.

Step 8: The difference between 1990 and 2000, for the Minneapolis–St. Paul metropolitan area, will be calculated and divided by 10 (years) and entered into column L.

Step 9: The difference between columns K and L will be calculated and entered into column M.

Step 10: The *z*-score for each suburb will be calculated by subtracting the difference between the Minneapolis–St. Paul metropolitan area median value for 1980 and 1990, and 1990 and 2000 (column G) from the difference for each suburb's median home value for 1980 and 1990, and 1990 and 2000 (column D) and then dividing that result by the standard deviation derived from the difference between differences of all suburbs between 1980 and 1990, and 1990 and 2000 (column G).

Step 11: The *z*-scores will be categorized according to the following table:

Designation	*z*-Score
Strong Rate of Acceleration of Investment	> 1.00
Moderate Rate of Acceleration of Investment	.51 – 1.00
Weak Rate of Acceleration of Investment	.01 – .50
Median	.00
Weak Rate of Acceleration of Disinvestment	(.01) – (.50)
Moderate Rate of Acceleration of Disinvestment	(.51) – (1.00)
Strong Rate of Acceleration of Disinvestment	< (1.00)

Step 12: These scores will be mapped using Arcview GIS according to the following color scheme:

Designation	Color Scheme
Strong Rate of Acceleration of Investment	Darkest Green
Moderate Rate of Acceleration of Investment	Darker Green
Weak Rate of Acceleration of Investment	Light Green
Median	White
Weak Rate of Acceleration of Disinvestment	Light Red
Moderate Rate of Acceleration of Disinvestment	Darker Red
Strong Rate of Acceleration of Disinvestment	Darkest Red

Step 13: Steps 1–12 will be repeated comparing the periods of 1990 and 2000, with 2000 and 2010.

Step 14: Steps 1–13 will be repeated for median gross rent.

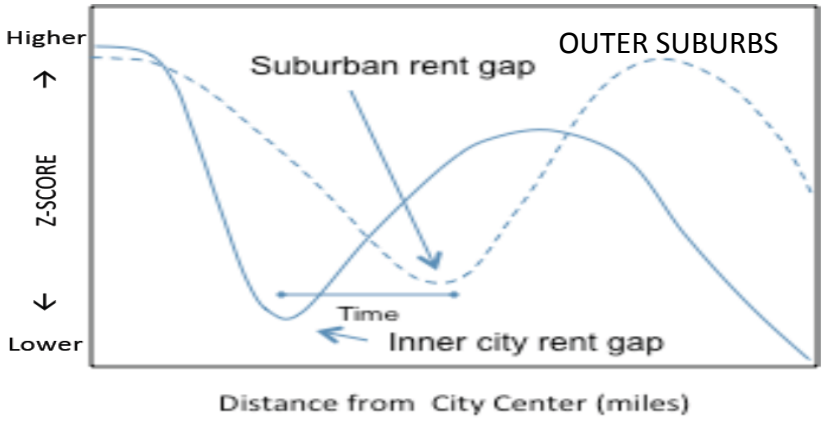
RESULTS AND CONCLUSIONS

This section describes findings for the three hypotheses. Generally, this research hypothesizes that capital disinvestment has spread outward from the central city to the inner suburbs. Specifically, this research hypothesizes that, compared to outer suburbs, (1) disinvestment is greater in inner suburbs, (2) disinvestment has increased to a greater degree in inner suburbs, and (3) disinvestment has accelerated faster in inner suburbs, during the period 1980 through 2010.

Hypothesis #1

This part analyzes the level of residential, for-sale and rental property disinvestment for each suburb in the Minneapolis–St. Paul metropolitan area. It is hypothesized that the level of residential disinvestment in 1980, 1990, 2000, and 2010 is greater in inner suburbs compared to their proximate outer suburbs. If the evidence supports the hypothesis, the *z*-scores are expected to reflect the pattern depicted in Figure 7 below. Specifically, moving outward from the central cities, inner suburban *z*-scores are expected to be lower than their proximate outer suburbs, and then decline the closer the outer suburbs are to the metropolitan area periphery. The null hypothesis is that the level of disinvestment is no greater in inner suburbs compared to outer suburbs. The results are described beginning with the central cities and moving outward to the inner suburbs, and then to the outer suburbs.

Figure 7: Hypothesized Geographic Model of Investment and Disinvestment.



Median Home Value

1980

For 1980, *z*-scores for Minneapolis and St. Paul are (.67) and (.69), respectively, indicating moderate disinvestment. Of 26 inner suburbs, 18 have negative *z*-scores that range from (.75) to (.02), indicating weak to moderate disinvestment. See Table 1

below. These inner suburbs are interspersed to the northwest, west, and south of Minneapolis, and to the northeast and southeast of St. Paul. See Map 2: Hypothesis #1—Median Home Value 1980, p. 154. Of the 26 inner suburbs, 8 have positive *z*-scores that range from .05 to 1.08, indicating weak to moderate investment. Edina, however, has a uniquely high *z*-score relative to the other inner suburbs. Excluding Edina, the highest *z*-score is .55. These inner suburbs are located to the southwest, west, and northeast of Minneapolis. All inner suburban *z*-scores, except St. Paul Park, are higher than *z*-scores for both Minneapolis and St. Paul, indicating that disinvestment is greater in the central cities than these inner suburbs.

Moving into the outer suburbs finds weak to strong investment to the west, southwest, south and northeast of Minneapolis, and to the northeast and east of St. Paul. The outer suburban areas to the northwest of Minneapolis, and east and southeast of St. Paul find weak disinvestment. While inner suburban disinvestment is not uniform across all inner suburbs, inner suburban z-scores are generally lower than their proximate outer suburbs, although the difference is in degrees of investment or disinvestment. In this regard the evidence generally supports the hypothesis; however, the relationship between inner and outer suburban z-scores does not perfectly fit the hypothesized model in Figure 7 above. Disinvestment exhibits a sectoral pattern extending from the central cities through inner and outer suburbs in the areas to the northwest and north of Minneapolis, and the east and southeast of St. Paul.

1990

From 1980 to 1990, *z*-scores for Minneapolis and St. Paul increased to (.48) and (.51), respectively, indicating weak disinvestment. Of the 26 inner suburbs, 17 have

negative *z*-scores that range from (.48) to (.07), indicating weak disinvestment. Grey Cloud Island moved from slightly below to slightly above 0. See Table 1 below. As in 1980, these inner suburbs are located to the northwest, west, and south of Minneapolis, and to the northeast and southeast of St. Paul. See Map 3: Hypothesis #1—Median Home Value 1990, p. 155. Of the 26 inner suburbs, 9 have positive *z*-scores that range from .05 to 1.66, indicating weak to moderate investment. As in 1980, Edina has a uniquely high *z*-score relative to the other inner suburbs. Excluding Edina, the highest *z*-score is .47. These suburbs are located to the southwest, west, and northeast of Minneapolis. Similar to 1980, all inner suburban *z*-scores are higher or equal to (South St. Paul) the *z*-scores of Minneapolis and St. Paul. This indicates that disinvestment is greater in the central cities than the inner suburbs.

Moving into the proximate outer suburbs finds essentially the same relationship between inner and outer suburbs as in 1980. Although investment in outer suburbs has spread further outward toward the metropolitan periphery in all directions, except the area northwest of Minneapolis. Like 1980, the evidence generally supports the hypothesis; however, the relationship between inner and outer suburban z-scores does not perfectly fit the hypothesized model in Figure 7 above. Disinvestment exhibits a sectoral pattern extending from the central cities through inner and outer suburbs in the areas to the northwest and north of Minneapolis, and to a lesser degree to the east and southeast of St. Paul.

Table 1: Inner Suburbs Median Home Value—Hypothesis #1

#	INNER SUBURBS	1980	1990	2000	2010
1	BLOOMINGTON	0.16	0.18	0.07	(0.09)
2	BROOKLYN CENTER	(0.37)	(0.29)	(0.51)	(0.54)
3	COLUMBIA HEIGHTS	(0.52)	(0.41)	(0.54)	(0.49)
4	CRYSTAL	(0.38)	(0.33)	(0.41)	(0.44)
5	EDINA	1.08	1.66	1.47	1.13
6	FALCON HEIGHTS	0.20	0.31	0.27	0.30
7	FRIDLEY	(0.15)	(0.11)	(0.30)	(0.34)
8	GOLDEN VALLEY	0.55	0.47	0.25	0.19
9	GREY CLOUD ISLAND TWP.	(0.02)	0.05	0.17	0.36
10	HOPKINS	(0.23)	(0.11)	(0.13)	(0.18)
11	LAUDERDALE	(0.61)	(0.38)	(0.40)	(0.43)
12	MAPLEWOOD	(0.33)	(0.07)	(0.14)	(0.20)
13	NEW BRIGHTON	0.09	0.29	0.03	(0.11)
14	NEW HOPE	0.06	0.06	(0.08)	(0.22)
15	NEWPORT	(0.52)	(0.42)	(0.41)	(0.31)
16	NORTH ST. PAUL	(0.40)	(0.24)	(0.32)	(0.31)
17	RICHFIELD	(0.26)	(0.14)	(0.19)	(0.23)
18	ROBBINSDALE	(0.43)	(0.35)	(0.42)	(0.37)
19	ROSEVILLE	0.08	0.16	0.02	(0.10)
20	SOUTH ST. PAUL	(0.63)	(0.48)	(0.44)	(0.38)
21	SPRING LAKE PARK	(0.45)	(0.20)	(0.31)	(0.40)
22	ST. ANTHONY	0.05	0.20	0.05	(0.03)
23	ST. LOUIS PARK	(0.19)	(0.09)	(0.09)	(0.08)
24	ST. PAUL PARK	(0.75)	(0.44)	(0.49)	(0.46)
25	WEST ST. PAUL	(0.27)	(0.14)	(0.25)	(0.26)
26	WHITE BEAR LAKE	(0.15)	(0.07)	(0.17)	(0.20)
	STRONG LEVEL OF INVESTMENT > 1.00	1	1	1	1
	MODERATE LEVEL OF INVESTMENT .51 – 1.00	1	0	0	0
	WEAK LEVEL OF INVESTMENT .01 – .50	6	8	7	3
	MEDIAN .00	0	0	0	0
	WEAK LEVEL OF DISINVESTMENT (.01) – (.50)	13	17	16	21
	MODERATE LEVEL OF DISINVESTMENT (.51) – (1.00)	5	0	2	1
	STRONG LEVEL OF DISINVESTMENT < (1.00)	0	0	0	0
	NO DATA	0	0	0	0
	TOTAL	26	26	26	26

2000

From 1990 to 2000, the *z*-score for Minneapolis increased for the second consecutive decade to (.40), while St. Paul's remained the same as 1990 at (.51), indicating weak to slightly moderate disinvestment. Of the 26 suburbs, 18 have negative *z*-scores that range from (.54) to (.08), indicating weak to moderate disinvestment. See Table 1 above. New Hope moved from slightly above to below 0. As in 1980 and 1990,

these inner suburbs are located to the northwest, west, and south of Minneapolis, and to the northeast and southeast of St. Paul. See Map 4: Hypothesis #1—Median Home Value 2000, p. 156. Of the 26 inner suburbs, 8 have positive *z*-scores that range from .02 to 1.47, indicating weak to moderate investment. As in 1980 and 1990, Edina has a uniquely high *z*-score relative to the other inner suburbs. Excluding Edina, the highest *z*-score is .27. These suburbs are located to the southwest, west, and northeast of Minneapolis. However, 8 of the 26 inner suburbs now have *z*-scores lower than the Minneapolis *z*-score, and 1 inner suburb has a *z*-score lower than St. Paul's *z*-score, indicating that disinvestment is greater in these inner suburbs compared to the inner cities.

Moving into the proximate outer suburbs finds essentially the same relationship between inner and outer suburbs as in 1980 and 1990. Although investment in outer suburbs has spread further outward toward the metropolitan periphery in all directions, except the area northwest of Minneapolis. Like 1980 and 1990, the evidence generally supports the hypothesis; however, the relationship between inner and outer suburban *z*-scores does not perfectly fit the hypothesized model in Figure 7 above. Disinvestment exhibits a sectoral pattern extending from the central cities through inner and outer suburbs in the areas to the northwest and north of Minneapolis, and to a lesser degree to the east and southeast of St. Paul.

2010

From 2000 to 2010, *z*-scores for Minneapolis and St. Paul increased to (.17) and (.34), respectively, indicating weak disinvestment. Of the 26 suburbs, 22 have negative *z*-scores that range from (.54) to (.03), indicating weak disinvestment. See Table 1

above. Bloomington, New Brighton, Roseville, and St. Anthony moved from just above to just below 0. This could be attributed, in part, to the foreclosure crisis that began in 2006, and the ensuing reduction in property values. As in 1980, 1990, and 2000, these inner suburbs are located to the northwest, west, and south of Minneapolis, and to the northeast and southeast of St. Paul. See Map 5: Hypothesis #1—Median Home Value 2010, p. 157. Only 4 of the 26 inner suburbs have positive *z*-scores that range from .30 to 1.13, indicating weak to moderate investment. As in 1980, 1990, and 2000, Edina has a uniquely high *z*-score relative to the other inner suburbs. Excluding Edina, the highest *z*-score is .36. These suburbs are located to the west and northeast of Minneapolis. However, 17 of the 26 inner suburbs now have *z*-scores lower than the Minneapolis *z*-score, and 9 inner suburbs have lower *z*-scores than St. Paul's *z*-score, indicating that disinvestment is greater in these inner suburbs compared to the central cities.

Moving into the proximate outer suburbs finds essentially the same relationship between inner and outer suburbs as in 1980, 1990 and 2000. Although investment in outer suburbs has spread further outward toward the metropolitan periphery in all directions, except the area northwest of Minneapolis. However, disinvestment has also expanded to the northwest and south of Minneapolis and to the southeast of St. Paul. Like 1980, 1990 and 2000 the evidence generally supports the hypothesis; however, the relationship between inner and outer suburban *z*-scores does not perfectly fit the hypothesized model in Figure 7 above. Disinvestment exhibits a sectoral pattern extending from the central cities through inner and outer suburbs in the areas to the northwest and north, and south of Minneapolis, and to a lesser degree to the southeast of St. Paul.

Conclusions

It is hypothesized that for-sale property disinvestment is greater in inner suburbs compared to outer suburbs. In 1980, most inner suburbs (18 of 26) experienced weak to moderate disinvestment. In 1990 and 2000, there is no significant change in the geography of inner suburban disinvestment. It is not until 2010 that inner suburban disinvestment expands geographically to the south and northeast of Minneapolis, and to 22 inner suburbs (up from 18), potentially partially influenced by the 2006 foreclosure crisis. Only 3 suburbs—Edina, Golden Valley, and Falcon Heights—maintain weak to strong investment for the entire period of 1980 to 2010.

Given that disinvestment was very noticeable in 1980 is can be inferred that the cycle of inner suburban disinvestment probably started around 1960 or earlier, as it takes some time after the initial construction of the residential subdivision for physical wear and tear, and functional obsolescence to appear and begin effecting owner's investment decisions. Moreover, the number of inner suburbs with z-scores lower than Minneapolis and/or St. Paul increased during the period, indicating that disinvestment is greater in these inner suburbs compared to the central cities. Investment in the outer suburbs continually expanded outward during the period with the exception of the area to the northwest of Minneapolis and to a lesser degree to the southeast of St. Paul. Inner suburban z-scores are generally lower than their proximate outer suburbs, although the difference is in degrees of investment or disinvestment.

In sum, the evidence generally supports the hypothesis, that inner suburban z-scores are lower than their proximate outer suburbs; however, the relationship between inner and outer suburban z-scores does not perfectly fit the hypothesized model in

Figure 7 above, and it exhibits more of a sectoral pattern of disinvestment especially in the area to the northwest of Minneapolis, where disinvestment extends from the central city through the inner suburbs, and into the outer suburbs. A similar but less extensive sectoral pattern is found to the northeast and southeast of St. Paul.

What this means is that there is strong evidence that by 1980, and continuing through 2010, the devalorization cycle is well underway for nearly every inner suburb. Recall the devalorization cycle is the result of the decisions of a variety of real estate interests (homeowners, landlords, real estate agents, and banks), over many years, to reduce or withdraw their capital from investing in inner suburban residential property due to higher risk and lower returns compared to investing in residential property nearer the periphery. Disinvestment ultimately results in a lower capitalized ground rent as reflected in a lower relative overall property value.

However, throughout the 1980 to 2010 period, inner suburban disinvestment remains weak, which could indicate that devalorization cycle is still in stage one and/or that disinvestment has stabilized. But in 2010, disinvestment from rental property, described in more detail in the section “Median Gross Rent” below, is noticeable in the majority of inner suburbs indicating the beginning of the second stage of the devalorization cycle. This would indicate that disinvestment from rental property was first noticeable approximately 30 over more years after it was first noticed from for-sale property (1980).

A sectoral pattern, meaning that disinvestment continues out beyond the inner suburbs to the outer suburbs, is noticeable, especially to the northwest of Minneapolis, and to a lesser degree to the southeast and northeast of St. Paul. This may be the

result of the way the metropolitan area initially developed. Recall that Hoyt, (1939, pp. 74–76, 116, 120) showed that development was sectoral in nature, not mono-centric. He found that high-rent areas, which originated near retail and office uses and were farthest from industrial uses, tended to locate at the periphery in a few sectors along major transportation routes, and that intermediate-rent areas typically surrounded or were adjacent to the high-rent areas. For both the high and intermediate areas, rents declined on all sides and the nearer the property was to the business center. Low-rent areas covered the balance of residential areas extending from the core to the periphery with no grade change in rents (Hoyt, 1939, pp. 74–76, 116, 120).

According to Adams & VanDrasek, (1993, pp. 104-108), the high rent area in the Minneapolis-St. Paul region, are located to the southwest of Minneapolis which is the location of significant investment. This is the “home to the out-of-sight rich, the affluent professionals and captains of local industry who initially settled just south of down town around Lake of the Isles, and Lake Minnetonka. Recall, the inner suburbs of Edina and Golden Valley, located in this sector, maintained weak investment during the entire period, 1980-2010. Furthermore, the outer suburbs in this sector also maintained weak to moderate investment. In contrast, the origins of the areas to the northwest and north of Minneapolis were “rooted in the railroads and in industrial activity that pushed upriver from St. Anthony Falls,” as well as were “genuine blue-collar working-class immigrant, ethnic flavored neighborhoods resembling those of the industrial cities of the northeast. This was also the case with the area to the southeast of St. Paul. This area comprised meat packing plants, and industry, and was an area of “lower-middle class and working class character” (Adams, et. al., 1994, p. 106, 108). During the period,

1980-2010, these areas exhibited sectoral disinvestment.

What explains the sectoral nature of disinvestment of the areas to the northwest and north of Minneapolis, and to the southeast of St. Paul? It can be inferred from Hoyt, (1939) and Adams, et. al., (1993) it is because the higher end housing is typically limited to a sector of the entire metropolitan area, leaving the remaining areas to accommodate the more modest and lower income housing. This pattern is shaped by the initial location of industry and the corresponding location of residential subdivisions to house both the captains of industry and the workers in those industries. The residential subdivisions, constructed in the areas to the northwest and north of Minneapolis, and the southeast of St. Paul, were constructed to serve, in large part, the working class; consequently, the construction quality and size were comparatively more modest reflecting a working class housing market. Because of the modest quality, these houses suffer from physical wear and tear, and functional obsolescence and therefore disinvestment sooner, compared to housing in the high end area to the southwest of Minneapolis.

In addition to the effect that modest housing quality has on disinvestment, racism may also explain part of the sectoral nature of disinvestment in the areas to the northwest and north of Minneapolis. These areas comprise the greatest percentage of African-Americans in the metropolitan area. And, while the research regarding white flight is mixed, and according to (Goering, 1978, pp. 69, 77), “there is no social science evidence that supports the existence of a single, universally applicable tipping point which can explain and predict the point at which neighborhoods will irreversibly change

from white to non-white, Smith's theory acknowledges a role for race in disinvestment, through block busting and blowout.

Median Gross Rent

1980

In 1980, *z*-scores for Minneapolis and St. Paul are both (.51), indicating weak disinvestment. Of the 26 suburbs, 8 have negative *z*-scores that range from (.80) to (.08), indicating weak to moderate disinvestment. See Table 2 below. These few inner suburbs are located to the north and south of Minneapolis, and to the east and southeast of St. Paul. See Map 6: Hypothesis #1—Median Gross Rent 1980, p. 158 Of the 26 inner suburbs, 18 have positive *z*-scores that range from .26 to 2.08, indicating weak to strong investment. Edina and St. Anthony have uniquely high *z*-scores relative to the other inner suburbs. Excluding Edina and St. Anthony, the highest *z*-score is .91. These inner suburbs are located to the southwest, west, northwest, north, and northeast of Minneapolis, and to the north and east of St. Paul. All inner suburban *z*-scores are higher than the *z*-scores for both Minneapolis and St. Paul, with the exception of St. Paul Park and Falcon Heights.

Moving into the proximate outer suburbs finds, with three exceptions, that outer suburban *z*-scores are positive and are equal to greater than inner suburban z-scores. With the exception of the area to the southeast of St. Paul, the evidence does not support the hypothesis. This may be because, according the Smith's theory, disinvestment by landlords follows disinvestment by homeowners, and it may be that the time between homeowner disinvestment and landlord disinvestment has not been long enough.

1990

From 1980 to 1990, *z*-scores for both Minneapolis and St. Paul increased slightly to (.47), indicating weak disinvestment. Of the 26 inner suburbs, 9 have negative *z*-scores that range from (.76) to (.10), indicating weak to moderate disinvestment. See Table 2 below. Spring Lake Park moved from just above to below 0. As in 1980, these inner suburbs are located to the north and south of Minneapolis, and to the northeast and southeast of St. Paul. See Map 7: Hypothesis #1—Median Gross Rent 1990, p. 159.

Of the 26 inner suburbs, 17 have positive *z*-scores that range from .02 to 1.36, indicating weak to moderate investment. Edina and Grey Cloud Township have uniquely high *z*-scores relative to the other inner suburbs. Excluding Edina and Grey Cloud Township, the highest *z*-score is .72. As in 1980, these inner suburbs are located to the southwest, west, northwest, north, and northeast of Minneapolis, and to the north and east of St. Paul. Similar to 1980, all inner suburban *z*-scores are higher than the *z*-scores for Minneapolis and St. Paul, except for Falcon Heights, South St. Paul, and St. Paul Park, indicating that disinvestment is greater in these inner suburbs compared to the central cities.

Moving into the proximate outer suburbs finds, with three exceptions (Brooklyn Park to the northwest of Minneapolis, and Dellwood and Oakdale to the northeast and east of St. Paul, respectively), that outer suburban *z*-scores are positive and are equal to greater than inner suburban z-scores. With the exception of the area to the northwest of Minneapolis, and the southeast of St. Paul, no clear pattern of inner suburban

disinvestment relative to the outer suburbs is noticeable; consequently, the evidence provides weak support for the hypothesis in 1990.

Table 2: Inner Suburbs Median Gross Rent—Hypothesis #1

#	INNER SUBURBS	1980	1990	2000	2010
1	BLOOMINGTON	0.91	0.72	0.56	0.05
2	BROOKLYN CENTER	0.26	0.21	(0.12)	(0.10)
3	COLUMBIA HEIGHTS	(0.20)	(0.18)	(0.52)	(0.16)
4	CRYSTAL	0.28	0.17	0.09	(0.20)
5	EDINA	2.08	1.36	1.20	0.60
6	FALCON HEIGHTS	(0.80)	(0.76)	(0.94)	(0.42)
7	FRIDLEY	0.20	0.02	(0.12)	(0.20)
8	GOLDEN VALLEY	0.42	0.31	0.08	0.12
9	GREY CLOUD ISLAND TWP.	0.11	1.13	0.40	no data
10	HOPKINS	0.56	0.29	0.31	(0.16)
11	LAUDERDALE	(0.37)	(0.25)	(0.31)	(0.25)
12	MAPLEWOOD	0.32	0.23	0.19	(0.11)
13	NEW BRIGHTON	0.31	0.03	0.04	(0.24)
14	NEW HOPE	0.32	0.32	0.18	(0.21)
15	NEWPORT	(0.25)	(0.28)	(0.46)	(0.75)
16	NORTH ST. PAUL	(0.28)	(0.22)	(0.26)	(0.41)
17	RICHFIELD	(0.08)	(0.21)	(0.10)	(0.42)
18	ROBBINSDALE	0.15	0.19	(0.17)	(0.22)
19	ROSEVILLE	0.34	0.19	0.19	(0.21)
20	SOUTH ST. PAUL	(0.49)	(0.49)	(0.52)	(0.35)
21	SPRING LAKE PARK	0.23	(0.10)	0.10	0.08
22	ST. ANTHONY	1.87	0.62	1.37	1.27
23	ST. LOUIS PARK	0.42	0.49	0.35	0.10
24	ST. PAUL PARK	(0.63)	(0.47)	(0.52)	(0.61)
25	WEST ST. PAUL	0.31	0.06	(0.20)	(0.24)
26	WHITE BEAR LAKE	0.06	0.49	0.38	0.11
	STRONG LEVEL OF INVESTMENT > 1.00	2	2	2	1
	MODERATE LEVEL OF INVESTMENT .51 – 1.00	2	2	1	1
	WEAK LEVEL OF INVESTMENT .01 – .50	14	13	11	5
	MEDIAN .00	0	0	0	0
	WEAK LEVEL OF DISINVESTMENT (.01) – (.50)	6	8	8	16
	MODERATE LEVEL OF DISINVESTMENT (.51) – (1.00)	2	1	4	2
	STRONG LEVEL OF DISINVESTMENT < (1.00)	0	0	0	0
	NO DATA	0	0	0	1
	TOTAL	26	26	26	26

2000

From 1990 to 2000, the Minneapolis *z*-score remained the same at (.47), while St. Paul's *z*-score declined slightly to (.53), indicating weak disinvestment. The number of inner suburbs with negative *z*-scores increased from 9 to 12. Brooklyn Center, Fridley, Robbinsdale, Spring Lake Park, and West St. Paul moved from just above to below 0. These *z*-scores range from (.94) to (.10), indicating weak to moderate

disinvestment. See Table 2 above. Similar to 1990, these inner suburbs are located to the north and south of Minneapolis and to the northeast and southeast of St. Paul, but with the addition of the five suburbs mentioned above, disinvestment has expanded to the northwest of Minneapolis. See Map 8: Hypothesis #1—Median Gross Rent 2000, p. 160.

Of the 26 inner suburbs, 14 have positive *z*-scores that range from .04 to 1.37, indicating weak to strong investment. Edina and St. Anthony have uniquely high *z*-scores relative to the other inner suburbs. Excluding Edina and St. Anthony, the highest *z*-score is .40. Similar to 1990, these inner suburbs are located to the southwest, west, and northeast of Minneapolis, and to the north and east of St. Paul. All inner suburban *z*-scores are higher than the *z*-score for Minneapolis, except for Falcon Heights, South St. Paul, St. Paul Park, and Columbia Heights, and also higher than St. Paul, except for Falcon Heights, again indicating that disinvestment is greater in these inner suburbs compared to the inner cities.

Moving into the proximate outer suburbs finds, with three exceptions (Mounds View to the north of Minneapolis and Dellwood and Oakdale to the northeast and east of St. Paul, respectively) that outer suburban *z*-scores are positive and close to inner suburban *z*-scores, which are also positive. With the exception of the area to the southeast of St. Paul, no clear pattern of inner suburban disinvestment relative to the outer suburbs investment is noticeable. Consequently, the evidence weakly supports the hypothesis in 2000.

2010

From 2000 to 2010, the *z*-scores for Minneapolis and St. Paul increased to (.34) and (.39), respectively, indicating weak disinvestment. The number of inner suburbs with negative *z*-scores increased from 12 to 18. Crystal, Hopkins, Maplewood, New Brighton, New Hope, and Roseville moved from just above to below 0. These *z*-scores range from (.75) to (.10), indicating weak to moderate disinvestment. Similar to 2000, these inner suburbs are located to the northwest, north, and south of Minneapolis and to the northeast and southeast of St. Paul, but with the addition of the six suburbs mentioned above, disinvestment has expanded to the area northeast of Minneapolis and to the area northeast of St. Paul. See Map 9: Hypothesis #1—Median Gross Rent 2010, p. 161.

Of the 26 inner suburbs, 7 have positive *z*-scores that range from .05 to 1.27, indicating weak to strong investment. St. Anthony has a uniquely high *z*-score relative to the other inner suburbs. Excluding St. Anthony, the highest *z*-score is .60. As in 2000, these inner suburbs are located to the southwest, west, and northeast of Minneapolis, and to the east of St. Paul. Similar to 1990 and 2000, all inner suburban *z*-scores are higher than the *z*-score for Minneapolis except for Falcon Heights, South St. Paul, St. Paul Park, North St. Paul, Newport, and Richfield, and also higher than St. Paul except for South St. Paul, indicating that disinvestment is greater in these inner suburbs compared to the inner cities.

Moving into the outer suburbs finds that the outer suburban *z*-scores are positive, with the exception of Brooklyn Park and Mounds View to the northwest and north of Minneapolis respectively, and Oakdale to the east of St. Paul. A pattern of inner suburban disinvestment relative to the outer suburbs' investment is most noticeable in

the areas to the northwest and northeast of Minneapolis, and to the northeast and southeast of St. Paul. The evidence supports support hypothesis in these areas.

Conclusions

It is hypothesized that rental property disinvestment is greater in inner suburbs compared to outer suburbs. In 1980, most inner suburbs (18 of 26) are experiencing weak investment, not disinvestment. Where disinvestment is occurring is in very small areas to the north and south of Minneapolis, and to the northeast and southeast of St. Paul. In 1990, there is no significant change in the geography of inner suburban disinvestment. It is not until 2000 that inner suburban disinvestment begins to expand, from its 1980 and 1990 geographies, to the northwest of Minneapolis. Still, the remaining suburbs are experiencing investment.

In 2010, disinvestment further expands to the north and northwest of Minneapolis, as well as to the northeast of Minneapolis and St. Paul. Yet, as in 1980, 1990, and 2000, the area to the west and southwest of Minneapolis experiences weak to moderate investment. Clearly, disinvestment is sectoral extending from the central cities through the inner suburbs and into the outer suburbs all directions except to the southwest of Minneapolis. Furthermore, with the exceptions Brooklyn Park and Mounds View to the northwest and north of Minneapolis, and Oakdale to the east of St. Paul, all outer suburban *z*-scores remained positive for 1980, 1990, 2000, and 2010. Overall, in 1980, 1990 evidence supporting the hypothesis was weak. In 2000 and 2010 the evidence supporting the hypothesis is noticeably stronger, particularly in the areas to the northwest and north of Minneapolis, and to the northeast and southeast of St. Paul.

This pattern of disinvestment first noticeable in 2000 is very similar to the 1980

pattern of disinvestment for for-sale properties described earlier. The main difference is the disinvestment pattern for rental properties remained largely unnoticeable until at least 30 years after the same pattern emerged for for-sale properties. According to Smith's theory, the inner suburbs located to the northwest and north of Minneapolis, and to the southeast of St. Paul, are at least in the second state of the devalorization cycle, while the inner suburbs to the southwest of Minneapolis, and White Bear to the northeast of St. Paul have seemed to maintain their investment.

Like the findings for the for-sale housing in these areas discussed earlier, the rental property in these inner suburbs could be very modest in quality, and have limited architectural flexibility that would make significant reinvestment extraordinarily expensive. Furthermore, it may be the case that these cities lack, or lack an effective, or did not implement early enough, a rental-licensing program that typically requires rental properties to pass an annual physical inspection, to encourage and housing reinvestment. Lastly, according the Smith's theory, banks may be withdrawing capital from these areas, or offering capital at stricter terms to landlords citing perceived higher risk related to lower rents and building values that act as security for a mortgage.

Hypothesis #2

This part analyzes the rate of change in the level of disinvestment for each suburb in the Minneapolis–St. Paul metropolitan area for for-sale and rental property. It is hypothesized that during the periods 1980–1990, 1990–2000, 2000–2010, and 1980–2010, inner suburban disinvestment increased at a greater rate compared to their proximate outer suburbs. If the evidence supports the hypothesis, inner suburban *z*-scores would be to the left of, and farther from the median compared to, outer suburbs'

z-scores. The null hypothesis is that the rate of disinvestment is no greater in inner suburbs compared to outer suburbs. The results are described beginning with the central cities, then moving outward to the inner suburbs, and then to the outer suburbs.

Median Home Value

1980–1990

From 1980 to 1990, *z*-scores for Minneapolis and St. Paul are (.08) and (.10), respectively, indicating a weak increase in disinvestment during the decade. Of the 26 suburbs, 7 have negative *z*-scores that range from (.14) to (.02), also indicating a weak increase in disinvestment during the decade. See Table 3 below. These inner suburbs are located to the northwest of Minneapolis and to the southeast of St. Paul. See Map 10: Hypothesis #2—Median Home Value 1980–1990, p. 162.

Of the 26 inner suburbs, 19 have positive *z*-scores that range from .02 to 1.45, indicating a weak to strong increase in investment during the decade. Edina has a uniquely high *z*-score relative to the other inner suburbs. Excluding Edina, the highest *z*-score is .34. These suburbs are located in all directions from Minneapolis and St. Paul, except to the areas northwest of Minneapolis and southeast of St. Paul. Of the 26 inner suburbs, 6 have *z*-scores lower than the Minneapolis *z*-score, and 5 have a *z*-score lower than the St. Paul *z*-score, indicating that the rate of disinvestment in some inner suburbs increased to a greater degree compared to Minneapolis or St. Paul during the decade. These inner suburbs are located northwest of Minneapolis and southeast of St. Paul.

Moving into the proximate outer suburbs finds a weak to strong increase in investment in all directions from Minneapolis, and St. Paul, during the decade. There

was no noticeable difference between the *z*-scores of inner and outer suburbs, except for the area to the northwest of Minneapolis, and to the southeast of St. Paul. The evidence supports the hypothesis that the rate of inner suburban disinvestment increased to a greater degree compared to their proximate outer suburbs, only in the areas northwest of Minneapolis and southeast of St. Paul.

1990–2000

From 1990 to 2000, *z*-scores for Minneapolis and St. Paul decreased to (.26) and (.46), respectively, reflecting a second decade of weak but increasing disinvestment. Of the 26 inner suburbs, 23 have negative *z*-scores, up 7 from the previous decade. These *z*-scores range from (.69) to (.02), indicating a weak to moderate increase in disinvestment during the decade. See Table 3 below. With the exception of Edina, Falcon Heights and Grey Cloud Township, the geography of increasing inner suburban disinvestment expanded from the previous decade, from just the areas northwest of Minneapolis and southeast of St. Paul, to all directions from both Minneapolis and St. Paul. Of the 26 suburbs, 7 experienced their second decade of negative *z*-scores, indicating a continuing increase in disinvestment. They are located to the north and northwest of Minneapolis, and to the southeast of St. Paul. See Map 11: Hypothesis #2—Median Home Value 1990–2000, p. 163.

Of the 26 inner suburbs, 3 have positive *z*-scores that range from .28 to 1.12, indicating a weak to strong increase in investment during the decade. Edina has a uniquely high *z*-score relative to the other inner suburbs. Excluding Edina, the highest *z*-score is .28. These suburbs are located to the southwest and northeast of Minneapolis, as well as to the northeast of St. Paul. Of the 26 inner suburbs, 12 have *z*-scores lower

than the Minneapolis *z*-score, and 3 inner suburbs have a *z*-score lower than the St. Paul *z*-score, indicating that the rate of disinvestment in some inner suburbs increased to a greater degree compared to Minneapolis or St. Paul during the decade. These inner suburbs are located primarily north and northwest of Minneapolis and southeast of St. Paul.

Moving into the proximate outer suburbs finds that disinvestment has increased and spread to the outer suburbs to the northwest and northeast of Minneapolis, as well as to the southeast of St. Paul. Yet while the outer suburban *z*-scores are negative, they are generally still higher than their proximate inner suburbs, indicating an increase in disinvestment but less so compared to the inner suburbs. There was a noticeable difference between inner and outer suburban *z*-scores in the areas to the west of Minneapolis, and to the northeast and east of St. Paul. In these areas, inner suburban *z*-scores were negative while the proximate outer suburban *z*-scores were positive. While the evidence generally supports the hypothesis it is more noticeable in the areas to the west and south of Minneapolis, and to the northeast of St. Paul, where the transition between inner and outer suburbs is from negative to positive z-scores. Conversely, in the areas to the northwest of Minneapolis and the southeast of St. Paul disinvestment extends from the inner suburbs out into the outer suburbs.

Table 3: Inner Suburbs Median Home Value—Hypothesis #2

#	INNER SUBURBS	1980–1990	1990–2000	2000–2010	1980–2010
1	BLOOMINGTON	0.11	(0.06)	(0.23)	(0.13)
2	BROOKLYN CENTER	(0.09)	(0.69)	(0.51)	(0.52)
3	COLUMBIA HEIGHTS	(0.12)	(0.63)	(0.38)	(0.44)
4	CRYSTAL	(0.13)	(0.45)	(0.42)	(0.41)
5	EDINA	1.45	1.12	0.67	1.03
6	FALCON HEIGHTS	0.27	0.19	0.29	0.29
7	FRIDLEY	(0.02)	(0.49)	(0.34)	(0.35)
8	GOLDEN VALLEY	0.18	(0.02)	0.11	0.10
9	GREY CLOUD ISLAND TWP.	0.09	0.28	0.52	0.41
10	HOPKINS	0.05	(0.15)	(0.20)	(0.15)
11	LAUDERDALE	0.02	(0.38)	(0.41)	(0.35)
12	MAPLEWOOD	0.21	(0.20)	(0.24)	(0.16)
13	NEW BRIGHTON	0.34	(0.26)	(0.24)	(0.15)
14	NEW HOPE	0.03	(0.22)	(0.33)	(0.25)
15	NEWPORT	(0.14)	(0.36)	(0.19)	(0.24)
16	NORTH ST. PAUL	0.03	(0.39)	(0.26)	(0.26)
17	RICHFIELD	0.04	(0.22)	(0.24)	(0.20)
18	ROBBINSDALE	(0.11)	(0.45)	(0.29)	(0.32)
19	ROSEVILLE	0.16	(0.14)	(0.21)	(0.13)
20	SOUTH ST. PAUL	(0.11)	(0.36)	(0.28)	(0.29)
21	SPRING LAKE PARK	0.12	(0.39)	(0.45)	(0.35)
22	ST. ANTHONY	0.25	(0.13)	(0.11)	(0.05)
23	ST. LOUIS PARK	0.05	(0.07)	(0.06)	(0.05)
24	ST. PAUL PARK	0.06	(0.50)	(0.39)	(0.36)
25	WEST ST. PAUL	0.05	(0.34)	(0.24)	(0.23)
26	WHITE BEAR LAKE	0.04	(0.26)	(0.21)	(0.19)
	STRONG INCREASE IN INVESTMENT > 1.00	1	1	0	1
	MODERATE INCREASE IN INVESTMENT .51 – 1.00	0	0	2	0
	WEAK INCREASE IN INVESTMENT .01 – .50	18	2	2	3
	MEDIAN .00	0	0	0	0
	WEAK INCREASE IN DISINVESTMENT (.01) – (.50)	7	20	21	21
	MODERATE INCREASE IN DISINVESTMENT (.51) – (1.00)	0	3	1	1
	STRONG INCREASE INDISINVESTMENT < (1.00)	0	0	0	0
	NO DATA	0	0	0	0
	TOTAL	26	26	26	26

2000–2010

From 2000 to 2010, the *z*-scores for Minneapolis and St. Paul increased to .07 and (.13), respectively, indicating a weak but decreasing disinvestment during the decade. Of the 26 suburbs, 22 have negative *z*-scores, which range from (.51) to (.06), indicating a weak to moderate increase in disinvestment during the decade. See Table

3 above. These inner suburbs are located in all directions from both Minneapolis and St. Paul. Of the 26 suburbs, 7 experienced their third decade of negative *z*-scores, indicating ongoing and increasing disinvestment. They are located to the northwest and north of Minneapolis, and to the southeast of St. Paul. See Map 12: Hypothesis #2—Median Home Value 2000–2010, p. 164.

Of the 26 inner suburbs, 4 have positive *z*-scores that range from .11 to .67, indicating a weak to moderate increase in investment. These suburbs are located to the west and northeast of Minneapolis, and to the southeast of St. Paul. Of the 26 inner suburbs, 22 have *z*-scores lower than the *z*-scores for both Minneapolis and St. Paul. This is up 10 from the previous decade, and is an indication that disinvestment in the majority of inner suburbs is increasing compared to Minneapolis and St. Paul. As in the previous decade, these inner suburbs are located to primarily to the northwest and north of Minneapolis, and to the southeast of St. Paul.

Like the previous decade, moving into the outer suburbs finds a weak increase in disinvestment expanding further to the northwest and northeast of Minneapolis, as well as to the south and southeast of Minneapolis and St. Paul. Yet, while their *z*-scores are negative, they are, for the most part, still greater than their proximate inner suburbs, indicating an increase in disinvestment but less so compared to the inner suburbs. There was a noticeable difference between inner and outer suburban *z*-scores to the areas west of Minneapolis, and to the northeast and east of St. Paul. In these areas, inner suburban *z*-scores were negative while the proximate outer suburban *z*-scores were positive. Like the previous decade, the evidence generally supports the hypothesis and it is more noticeable in the areas to the west and south of Minneapolis, and to the

northeast of St. Paul, where the transition between inner and outer suburbs is from negative to positive z-scores. Conversely, in the areas to the northwest of Minneapolis and the southeast of St. Paul disinvestment extends from the inner suburbs out into the outer suburbs.

1980–2010

From 1980 to 2010, *z*-scores for Minneapolis and St. Paul were (.05) and (.23), respectively, indicating a weak increase in disinvestment during the period. Of the 26 suburbs, 22 have negative *z*-scores, up from 7 in 1980. These *z*-scores range from (.52) to (.05), indicating a weak to moderate increase in disinvestment during the period. See Table 3 above. These inner suburbs are located in all directions from Minneapolis and St. Paul, except for Edina and Golden Valley to the southwest and west of Minneapolis, Falcon Heights to the northeast of Minneapolis, and Grey Cloud Township to the southeast of St. Paul. A total of 7 of the 26 inner suburbs—Brooklyn Center, Columbia Heights, Crystal, Fridley, Newport, Robbinsdale, and South St. Paul—experienced three decades of weak increasing disinvestment. These inner suburbs are located north and northwest of Minneapolis and southeast of St. Paul. See Map 13: Hypothesis #2—Median Home Value 1980–2010, p. 165.

Of the 26 inner suburbs, 4 have positive *z*-scores that range from .10 to 1.03, indicating a weak to strong increase in investment during the period. These suburbs are located to the west and northeast of Minneapolis, and to the southeast of St. Paul. Of the 26 inner suburbs, 20 have *z*-scores lower than the *z*-score for Minneapolis, and 11 have *z*-scores lower than St. Paul. This is up from 6 and 5, respectively, in 1980.

Clearly, disinvestment is increasing in about half the inner suburbs to a greater degree compared to Minneapolis, and St. Paul.

Moving into the outer suburbs finds positive outer suburbs in the areas to the west and northeast of Minneapolis, and to the northeast and east of St. Paul. The areas to the northwest of Minneapolis and to the southeast of St. Paul experienced negative *z*-scores, indicating weak increasing disinvestment. Yet, with few exceptions, outer suburban z-scores are still greater than their proximate inner suburbs, indicating a smaller increase in disinvestment. The evidence generally supports the hypothesis and it is more noticeable in the areas to the west of Minneapolis, and to the northeast of St. Paul, where the transition between inner and outer suburbs is from negative to positive z-scores. Conversely, in the areas to the northwest of Minneapolis and the southeast of St. Paul disinvestment extends from the inner suburbs out into the outer suburbs exhibiting a more sectoral pattern.

Conclusions

It is hypothesized that during the periods 1980–1990, 1990–2000, 2000–2010, and 1980-2010, inner suburban disinvestment from owner-occupied property increased at a greater rate compared to outer suburbs. From 1980 to 1990, the hypothesis was supported only in the areas northwest of Minneapolis and southeast of St. Paul. Consequently, these areas are characterized as areas of weak and increasing disinvestment. The balance of the inner suburbs experienced weak to strong investment. This changed between 1990 and 2000. Disinvestment increased in 23 of 26 inner suburbs, up from 7 in the previous decade, and expanded in all directions from Minneapolis and St. Paul. Furthermore disinvestment also increased in the outer

suburbs to the northwest, north and northeast of Minneapolis, and to the east and southeast of St. Paul, while investment increased in the areas to the west of Minneapolis, and the north and northeast of St. Paul. Between 2000 and 2010, disinvestment continued to increase in 22 of the 26 inner suburbs, while at the same time disinvestment continued to increase in the outer suburbs to the northwest, north, and northeast of Minneapolis, and the east and southeast of St. Paul.

Over all, the evidence generally supports the hypothesis and it is more noticeable in the areas to the west of Minneapolis, and to the northeast of St. Paul, where the transition between inner and outer suburbs is from negative to positive z-scores. Conversely, in the areas to the northwest and north of Minneapolis and the southeast of St. Paul disinvestment extends from the inner suburbs out into the outer suburbs, displaying a more sectoral pattern. This expansion of disinvestment could be the result of ongoing investment (new housing construction) further out nearer the periphery. As new housing is constructed in these peripheral areas, households are leaving behind, rather than reinvesting in, their depreciated inner suburban housing. This new construction is spurred by government policy, such as transportation and new school funding, as well as the home mortgage deduction. And, as was stated earlier disinvestment in inner suburban housing is more likely to occur and occur sooner due to its initial modest construction to serve lower-middle class families. Clearly, the devalorization cycle is continuing in inner suburbs.

Median Gross Rent

1980–1990

From 1980 to 1990, *z*-scores for both Minneapolis and St. Paul are (.24), indicating a weak increase in disinvestment during the decade. Of the 26 suburbs, 13 have negative *z*-scores that range from (.40) to (.07), also indicating a weak increase in disinvestment during the decade. See Table 4 below. These inner suburbs are located to the north and south of Minneapolis, and to the northeast and southeast of St. Paul. See Map 14: Hypothesis #2—Median Gross Rent 1980–1990, p. 166.

Of the 26 inner suburbs, 13 have positive *z*-scores that range from .02 to 1.23, indicating a weak to strong increase in investment during the decade. Grey Cloud Township has uniquely high *z*-score relative to the other inner suburbs. Excluding Grey Cloud Township, the highest *z*-score is .53. These suburbs are located in all directions of Minneapolis and St. Paul, with the exception of the areas to the north and south of Minneapolis, and to the northeast and southeast of St. Paul. Of the 26 inner suburbs, 5 have *z*-scores lower than the *z*-scores for both Minneapolis and St. Paul, indicating that the rate of disinvestment in some inner suburbs is greater compared to the inner cities. These inner suburbs are located northeast of Minneapolis and southeast of St. Paul.

Moving into the outer suburbs finds, with few exceptions, positive outer suburban *z*-scores in all directions, reflecting a weak to strong increase in investment during the decade. While the outer suburbs of Brooklyn Park to the northwest of Minneapolis, Mounds View to the north of Minneapolis, and Oakdale to the east of St. Paul show signs of weak disinvestment, *z*-scores for those outer suburbs were higher than those for their proximate inner suburbs. Evidence supporting the hypothesis is more

noticeable in the areas to the north of Minneapolis, and to the southeast of St. Paul, where the transition between inner and outer suburbs is from negative to positive z-scores.

1990–2000

From 1990 to 2000, *z*-scores for Minneapolis and St. Paul increased to (.15) and (.21), respectively, reflecting a weak increase in disinvestment. Of 26 inner suburbs, 16 have negative z-scores, up from 13 during the previous decade. These *z*-scores range from (.48) to (.01), indicating a weak increase in disinvestment during the decade. See Table 4 below. The geography increasing inner suburban disinvestment is the same as in the previous decade, but has expanded to the west and northwest of Minneapolis. Of the 26 suburbs, 7 experienced their second decade of negative *z*-scores, indicating continuing and increasing disinvestment. They are located to the north of Minneapolis, and to the northeast and southeast of St. Paul. See Map 15: Hypothesis #2—Median Gross Rent 1990–2000, p. 167.

Of the 26 inner suburbs, 10 have positive *z*-scores that range from .02 to 1.05, indicating a weak to strong increase in investment during the decade. These suburbs are located to the southwest, west, and northeast of Minneapolis, and to the northeast and east of St. Paul. Of the 26 inner suburbs, 10 have *z*-scores lower than Minneapolis and 7 have scores lower than St. Paul's, indicating that the rate of disinvestment in some inner suburbs is greater compared to the inner cities. These inner suburbs are located to the northwest and north of Minneapolis, and to the southeast of St. Paul.

Moving into the outer suburbs finds, with some exceptions, positive outer suburban *z*-scores in all directions, reflecting a weak to strong increase in investment

during the decade. The outer suburbs of Mounds View and Arden Hills to the northeast of Minneapolis, and Vadnais Heights, and Little Canada to the north of St. Paul, and Mahtomedi to the northeast of St. Paul show signs of weak disinvestment, with z-scores that are actually lower than their proximate inner suburbs. The evidence generally supports the hypothesis and it is more noticeable in the areas to the west and northwest of Minneapolis, and to the southeast of St. Paul, where the transition between inner and outer suburbs is from negative to positive z-scores.

Table 4: Inner Suburbs Median Gross Rent—Hypothesis #2

#	INNER SUBURBS	1980–1990	1990–2000	2000–2010	1980–2010
1	BLOOMINGTON	0.29	0.04	(0.29)	(0.15)
2	BROOKLYN CENTER	0.08	(0.30)	(0.04)	(0.17)
3	COLUMBIA HEIGHTS	(0.09)	(0.44)	0.14	(0.13)
4	CRYSTAL	0.03	(0.04)	(0.28)	(0.29)
5	EDINA	0.33	0.25	(0.08)	0.18
6	FALCON HEIGHTS	(0.40)	(0.44)	0.11	(0.28)
7	FRIDLEY	(0.10)	(0.15)	(0.14)	(0.26)
8	GOLDEN VALLEY	0.11	(0.17)	0.08	0.03
9	GREY CLOUD ISLAND TWP.	1.23	(0.48)	no data	no data
10	HOPKINS	0.01	0.11	(0.37)	(0.30)
11	LAUDERDALE	(0.07)	(0.15)	(0.08)	(0.18)
12	MAPLEWOOD	0.07	0.02	(0.24)	(0.20)
13	NEW BRIGHTON	(0.15)	0.02	(0.29)	(0.33)
14	NEW HOPE	0.17	(0.06)	(0.35)	(0.30)
15	NEWPORT	(0.17)	(0.29)	(0.56)	(0.77)
16	NORTH ST. PAUL	(0.08)	(0.12)	(0.30)	(0.39)
17	RICHFIELD	(0.19)	0.05	(0.41)	(0.45)
18	ROBBINSDALE	0.13	(0.36)	(0.14)	(0.28)
19	ROSEVILLE	0.02	0.05	(0.35)	(0.31)
20	SOUTH ST. PAUL	(0.26)	(0.19)	(0.07)	(0.27)
21	SPRING LAKE PARK	(0.26)	0.20	0.03	0.04
22	ST. ANTHONY	(0.39)	1.05	0.56	0.96
23	ST. LOUIS PARK	0.31	(0.01)	(0.11)	0.01
24	ST. PAUL PARK	(0.16)	(0.21)	(0.36)	(0.53)
25	WEST ST. PAUL	(0.11)	(0.28)	(0.14)	(0.33)
26	WHITE BEAR LAKE	0.53	0.02	(0.12)	0.10
	STRONG INCREASE IN INVESTMENT > 1.00	1	1	0	0
	MODERATE INCREASE IN INVESTMENT .51 – 1.00	1	0	1	1
	WEAK INCREASE IN INVESTMENT .01 – .50	11	9	4	5
	MEDIAN .00	0	0	0	0
	WEAK INCREASE IN DISINVESTMENT (.01) – (.50)	13	16	19	17
	MODERATE INCREASE IN DISINVESTMENT (.51) – (1.00)	0	0	1	2
	STRONG INCREASE IN DISINVESTMENT <(1.00)	0	0	0	0
	NO DATA	0	0	1	1
	TOTAL	26	26	26	26

2000–2010

From 2000 to 2010, the *z*-scores for Minneapolis and St. Paul increased to (.08) and (.11), respectively, indicating a weak increase in disinvestment during the decade. Of the 26 suburbs, 20 have negative z-scores, up from 16 during the previous decade. These *z*-scores range from (.56) to (.04), indicating a weak to moderate increase in

disinvestment during the decade. See Table 4 above. The geography of increasing inner suburban disinvestment has expanded to the southwest and northeast of Minneapolis, and to the northeast of St. Paul. Of the 26 suburbs, 7 experienced their third decade of negative *z*-scores, indicating ongoing increasing disinvestment. They are located northwest and north of Minneapolis and southeast of St. Paul. See Map 16: Hypothesis #2—Median Gross Rent 2000–2010, p.168.

Of the 26 inner suburbs, 5 have positive *z*-scores that range from .03 to .56, indicating weak to moderate increasing investment. These suburbs are located to the north and northeast of Minneapolis, and to the southeast of St. Paul. Of the 26 inner suburbs, 16 have *z*-scores lower than the z-score for Minneapolis, and 15 have *z*-scores lower than the *z*-score for St. Paul. This is up 11 and 8, respectively, from the previous decade and is an indication that disinvestment in the majority of inner suburbs is increasing at a greater rate compared to Minneapolis and St. Paul. Like the previous decade, these inner suburbs are located to primarily to the northwest and north of Minneapolis, and to the southeast of St. Paul.

Moving into the proximate outer suburbs finds, with few exceptions, that a weak to moderate increase in disinvestment has expanded from its previous geography into nearly all of the proximate outer suburbs. Consequently, disinvestment has increased in both the inner suburbs, as well as the proximate outer suburbs.

1980–2010

From 1980 to 2010, *z*-scores for Minneapolis and St. Paul were (.25) and (.31), respectively, indicating a weak increase in disinvestment over the period. Of the 26 suburbs, 19 have negative *z*-scores, up from 13 in 1980. These *z*-scores range from

(.77) to (.13), indicating a weak to moderate increase in disinvestment during the period. See Table 4 above. These inner suburbs are located in all directions from Minneapolis and St. Paul, except for Edina, St. Louis Park, and Golden Valley to the southwest and west of Minneapolis, and St. Anthony and Spring Lake Park to the north of Minneapolis. Of the 26 inner suburbs, 8 experienced three decades of increasing disinvestment. These include Fridley, Lauderdale, New Brighton, Newport, North St. Paul, South St. Paul, St. Paul Park, and West St. Paul. These inner suburbs are located to the north and northeast of Minneapolis, and to the southeast of St. Paul. See Map 17: Hypothesis #2—Median Gross Rent 1980–2010, p. 169.

Of the 26 inner suburbs, 6 have positive *z*-scores that range from .01 to .96, indicating a weak to moderate increase in investment during the period. These suburbs are located to the west and northeast of Minneapolis, and to the northeast of St. Paul. Of the 26 inner suburbs, 14 have *z*-scores lower than the *z*-score for Minneapolis, and 5 have a *z*-score lower than St. Paul's. This indicates that the rate of disinvestment was greater in these inner suburbs compared to Minneapolis and St. Paul during the period. These suburbs are located in all directions from Minneapolis and St. Paul, with the exception of the areas to the west and southwest of Minneapolis, and to the northeast of St. Paul.

Moving into the proximate outer suburbs finds a weak to moderate increase in investment in all directions from Minneapolis, and St. Paul with the exception of the area to the northwest of Minneapolis, and small areas to the south of Minneapolis, and north and east of St. Paul. It is at these locations that disinvestment has expanded from the central cities to the inner suburbs, and out into the outer suburbs.

Conclusions

It is hypothesized that during the periods 1980–1990, 1990–2000, 2000–2010, and 1980–2010, the rate of inner suburban disinvestment from rental property increased to a greater degree compared to outer suburbs. Between 1980 and 1990 the evidence supporting the hypothesis is noticeable in the areas to the north of Minneapolis, and to the southeast of St. Paul, where the transition between inner and outer suburbs is from negative to positive z-scores. This pattern generally holds true between 1990 and 2000, but increasing inner suburban disinvestment expands to the west and northwest of Minneapolis. Between 2000 and 2010, increasing disinvestment continues its expansion into most inner suburbs but also into most proximate outer suburbs. Overall, with the exception of a few suburbs primarily to the west of Minneapolis, inner suburbs experienced a weak to moderate increase in disinvestment between 1980 and 2010. Similar to the expanding disinvest from for-sale property, indicating the continuing devalorization cycle, discussed earlier, disinvestment from rental property also expanded from the inner suburbs into the outer suburban areas to the northwest, and northeast of Minneapolis and to a small area to the east of St. Paul, reflecting a sectoral pattern.

Hypothesis #3

This part analyzes the rate of the rate of change in the level of disinvestment for each suburb in the Minneapolis–St. Paul metropolitan area for for-sale and rental property. It is hypothesized that the rate of disinvestment in inner suburbs has accelerated compared to outer suburbs. The rate of acceleration between 1980 and 1990, and 1990 and 2000 is compared with the rate of acceleration of the median for

the metropolitan area. The same comparison is performed for the 1990-2000 and 2000-2010 periods. If the evidence supports the hypothesis, inner suburban *z*-scores would be to the left of, and farther from the median compared to, outer suburbs' *z*-scores. The Null Hypothesis is that he rate of acceleration of disinvestment in inner suburbs is no greater compared to outer suburbs. The results are described beginning with the central city, then moving outward to the inner suburbs, and then to the outer suburbs.

Median Home Value

(1980–1990) to (1990–2000)

Comparing these periods, finds Minneapolis and St. Paul *z*-scores of (.30) and (.57), respectively, indicating a weak to moderate acceleration of disinvestment. Of the 26 inner suburbs, 24 have negative *z*-scores that range from (.01) to (.91), indicating weak to moderate acceleration of disinvestment. See Table 5 below. These suburbs were located in all directions from Minneapolis and St. Paul. See Map 18: Hypothesis #3—Median Home Value (1980–1990) to (1990–2000), p.170. Of the 26 inner suburbs, 2 have positive *z*-scores that range from .08 to .31, indicating weak acceleration of investment. These are Edina (southwest of Minneapolis) and Grey Cloud Township (southeast of St. Paul). Of the 26 inner suburbs, 19 have *z*-scores lower than the Minneapolis *z*-score, and 9 have *z*-scores lower than St. Paul's z-score, indicating that disinvestment accelerated faster in these inner suburbs compared to Minneapolis or St. Paul. These inner suburbs are located in all directions from Minneapolis and St. Paul.

Moving into the proximate outer suburbs finds that outer suburban *z*-scores reflect a weak acceleration of disinvestment in all directions, with the exception of the areas to the west, southwest and Maple Grove to the northwest of Minneapolis, and to

the northeast of St. Paul. Overall, disinvestment accelerated in the inner suburbs except for Edina and Grey Cloud Township as well as most outer suburban areas. However, in many but not all locations, the rate of acceleration in disinvestment is lower in the proximate outer suburbs compared to their proximate inner suburbs. Evidence supporting the hypothesis is most noticeable in the area to the northeast of St. Paul. In all other areas disinvestment has accelerated in both the inner and proximate outer suburbs.

Table 5: Inner Suburbs Median Home Value Rent—Hypothesis #3

INNER SUBURBS	**(1980–1990)** and **(1990–2000)**	**(1990–2000)** and **(2000–2010)**
BLOOMINGTON	(0.20)	(0.28)
BROOKLYN CENTER	(0.91)	(0.24)
COLUMBIA HEIGHTS	(0.80)	(0.10)
CRYSTAL	(0.52)	(0.28)
EDINA	0.08	0.18
FALCON HEIGHTS	(0.01)	0.27
FRIDLEY	(0.69)	(0.14)
GOLDEN VALLEY	(0.22)	0.17
GREY CLOUD ISLAND TWP.	0.31	0.53
HOPKINS	(0.28)	(0.18)
LAUDERDALE	(0.58)	(0.32)
MAPLEWOOD	(0.53)	(0.20)
NEW BRIGHTON	(0.75)	(0.16)
NEW HOPE	(0.35)	(0.31)
NEWPORT	(0.37)	(0.02)
NORTH ST. PAUL	(0.60)	(0.10)
RICHFIELD	(0.37)	(0.19)
ROBBINSDALE	(0.54)	(0.09)
ROSEVILLE	(0.38)	(0.19)
SOUTH ST. PAUL	(0.40)	(0.15)
SPRING LAKE PARK	(0.70)	(0.36)
ST. ANTHONY	(0.45)	(0.06)
ST. LOUIS PARK	(0.16)	(0.04)
ST. PAUL PARK	(0.80)	(0.20)
WEST ST. PAUL	(0.55)	(0.11)
WHITE BEAR LAKE	(0.42)	(0.12)
STRONG ACCELERATION OF INVESTMENT > 1.00	0	0
MODERATE ACCELERATION OF INVESTMENT .51 – 1.00	0	1
WEAK ACCELERATION OF INVESTMENT .01 – .50	2	3
MEDIAN .00	0	0
WEAK ACCELERATION OF DISINVESTMENT (.01) – (.50)	12	22
MODERATE ACCELERATION OF DISINVESTMENT (.51) – (1.00)	12	0
STRONG ACCERLATION OF DISINVESTMENT < (1.00)	0	0
NO DATA	0	0
	26	26

(1990–2000) to (2000–2010)

Comparing these periods finds that *z*-scores for Minneapolis and St. Paul are .28 and .12, respectively, indicating a weak acceleration of investment. Of the 26 inner suburbs, 22 have negative *z*-scores that range from (.02) to (.36), indicating a weak acceleration in disinvestment. See Table 5 above. With the exception of Golden Valley

and Falcon Heights, all other inner suburbs experienced continuing accelerating disinvestment. These suburbs were located in all directions from Minneapolis and St. Paul. See Map 19: Hypothesis #3—Median Home Value (1990–2000) to (2000–2010), p. 171.

Of the 26 inner suburbs, 4 have positive *z*-scores that range from .18 to .53, indicating a weak to moderate acceleration of investment. These are Edina, Falcon Heights, Golden Valley, and Grey Cloud Township. Of the 26 inner suburbs, 25 have *z*-scores lower than the Minneapolis *z*-score, and 22 have *z*-scores lower than the St. Paul *z*-score, indicating that the rate of disinvestment accelerated faster in these inner suburbs compared to the inner cities. These inner suburbs are located in all directions from Minneapolis and St. Paul.

Overall, disinvestment accelerated in the inner suburbs except for Edina, Golden Valley, and Grey Cloud Township. Yet disinvestment also accelerated in the proximate outer suburbs, with the exception of the areas to the west and southwest of Minneapolis, and to the northeast of St. Paul. However, in many but not all locations, the rate of acceleration is lower in the proximate outer suburbs compared to their proximate inner suburbs. Evidence supporting the hypothesis is weak and most noticeable in the area to the northeast of St. Paul.

Conclusions

It is hypothesized that the rate of change for inner suburban for-sale property accelerated compared to outer suburbs. During both periods, inner suburban disinvestment accelerated in all inner suburbs, with the exception of Edina and Grey Cloud Township during the first period, and with the exception of Edina, Golden Valley,

Falcon Heights, and Grey Cloud Township during the second period. Yet during both periods, the proximate outer suburbs also experienced accelerating disinvestment, with the exception of the areas to the west and southwest of Minneapolis, and to the northeast of St. Paul. However, in some proximate outer suburbs, the rate of acceleration of disinvestment is lower compared to their proximate inner suburbs. Overall, evidence supporting the hypothesis is most noticeable in the areas to the northeast of St. Paul. As Figure 6 on page 51 shows, the acceleration of disinvestment in inner suburbs may be the result of the cumulative effect of disinvestment by homeowner, landlords, real estate agents and banks. As the level of disinvestment grows, its effects become visible. The visibility of depreciated neighborhood housing stock sends a signal that housing investment presents a greater risk in these inner suburbs compared to housing in nearer the periphery. Furthermore, the acceleration of investment of housing nearer the periphery also helps accelerate disinvestment from inner suburbs, by providing new housing options that encourage households to move from, rather than reinvestment in, their inner suburban housing. Again, as reference earlier federal, state and regional policies subsidize and encourage growth at the periphery, at the expense of inner suburbs.

Median Gross Rent

(1980–1990) to (1990–2000)

Comparing these periods finds that Minneapolis experienced a weak acceleration of investment with a *z*-score of .02, and St. Paul experienced a weak acceleration of disinvestment with a *z*-score of (.03). Of the 26 inner suburbs, 18 have negative *z*-scores that range from (.02) to (.95), indicating a weak to moderate acceleration of

disinvestment. See Table 6 below. These suburbs were located in all directions from Minneapolis and St. Paul, except for the areas southwest and northeast of Minneapolis. See Map 20: Hypothesis #3—Median Gross Rent (1980–1990) to (1990–2000), p.172.

Of the 26 inner suburbs, 6 have positive *z*-scores that range from .03 to .92, indicating a weak to moderate acceleration of investment. Of the 26 inner suburbs, 19 have *z*-scores lower than the Minneapolis *z*-score, and 18 have *z*-scores lower than the St. Paul *z*-score, indicating that the rate of disinvestment accelerated faster in these inner suburbs compared to the inner cities. These inner suburbs are located in all directions from Minneapolis and St. Paul.

Moving into the proximate outer suburbs finds positive *z*-scores in areas to the northwest of Minneapolis and to the southeast of St. Paul, indicating a weak acceleration of investment. The areas to the south and southwest of Minneapolis and to the northeast of St. Paul show a weak acceleration in disinvestment. Evidence supporting the hypothesis is most noticeable in areas to the northwest of Minneapolis, and the southeast of St. Paul.

Table 6: Inner Suburbs Median Gross Rent—Hypothesis #3

#	INNER SUBURBS	(1980–1990) and (1990–2000)	(1990–2000) and (2000–2010)
1	BLOOMINGTON	(0.12)	(0.26)
2	BROOKLYN CENTER	(0.25)	0.10
3	COLUMBIA HEIGHTS	(0.26)	0.32
4	CRYSTAL	(0.04)	(0.22)
5	EDINA	0.00	(0.18)
6	FALCON HEIGHTS	(0.10)	0.29
7	FRIDLEY	(0.05)	(0.05)
8	GOLDEN VALLEY	(0.17)	0.15
9	GREY CLOUD ISLAND TWP.	(0.95)	no data
10	HOPKINS	0.07	(0.36)
11	LAUDERDALE	(0.06)	0.00
12	MAPLEWOOD	(0.02)	(0.21)
13	NEW BRIGHTON	0.09	(0.25)
14	NEW HOPE	(0.13)	(0.26)
15	NEWPORT	(0.11)	(0.33)
16	NORTH ST. PAUL	(0.04)	(0.19)
17	RICHFIELD	0.13	(0.37)
18	ROBBINSDALE	(0.31)	0.05
19	ROSEVILLE	0.03	(0.32)
20	SOUTH ST. PAUL	0.00	0.03
21	SPRING LAKE PARK	0.27	(0.06)
22	ST. ANTHONY	0.92	(0.01)
23	ST. LOUIS PARK	(0.16)	(0.09)
24	ST. PAUL PARK	(0.06)	(0.21)
25	WEST ST. PAUL	(0.14)	0.02
26	WHITE BEAR LAKE	(0.25)	(0.11)
	STRONG ACCELERATION OF INVESTMENT > 1.00	0	0
	MODERATE ACCELERATION OF INVESTMENT .51 – 1.00	1	0
	WEAK ACCELERATION OF INVESTMENT .01 – .50	7	8
	MEDIAN .00	0	0
	WEAK ACCELERATION OF DISINVESTMENT (.01) – (.50)	17	17
	MODERATE ACCELERATION OF DISINVESTMENT (.51) – (1.00)	1	0
	STRONG ACCERLATION OF DISINVESTMENT < (1.00)	0	0
	NO DATA	0	1
	TOTAL	26	26

(1990–2000) to (2000–2010)

Comparing these periods finds that both Minneapolis and St. Paul experienced an acceleration of investment on par with the region, both having *z*-scores of .00. Of the 26 inner suburbs, 17 have negative *z*-scores that range from (.37) to (.01), indicating a weak acceleration of disinvestment. See Table 6 above. These suburbs were located in

all directions from Minneapolis and St. Paul. See Map 21: Hypothesis #3—Median Gross Rent (1990–2000) to (2000–2010), p.173.

Of the 26 inner suburbs, 7 have positive *z*-scores that range from .02 to .32, indicating a weak acceleration of investment. These inner suburbs are located to the northwest and north of Minneapolis, and to the southeast of St. Paul. Of the 26 inner suburbs, 17 have *z*-scores lower than the Minneapolis and St. Paul z-scores, indicating that disinvestment accelerated faster in these inner suburbs compared to Minneapolis or St. Paul. These inner suburbs are located in all directions, with the exception of the northwest and north of Minneapolis and the southeast of St. Paul.

Moving into the outer suburbs finds, with the exception of small areas northeast of Minneapolis and northeast and southeast of St. Paul, all proximate outer suburbs experienced a weak to moderate acceleration in disinvestment.

The evidence supports the hypothesis in a small area to the northwest of Minneapolis, and to the northeast of St. Paul.

Conclusions

The large majority of inner suburbs experienced accelerating weak to moderate disinvestment from for sale and rental properties for both periods. Accelerating disinvestment affects for-sale properties in greater number and degree compared to rental properties. Edina, and to a lesser degree Golden Valley experience an acceleration of investment in for sale property. While, Richfield, Hopkins, Golden Valley, Robbinsdale, Brooklyn Center, Falcon Heights and Roseville experienced an acceleration of investment in rental property for one of the periods. With the exception of the areas to the southwest of Minneapolis, and the northeast of St. Paul, most

proximate outer suburbs experienced a weak to moderate acceleration of disinvestment from for sale property. With the exception of the areas to the northwest of Minneapolis and the southeast of St. Paul most proximate outer suburban rental property experienced a weak to moderate acceleration of disinvestment. Consequently, evidence supporting the hypothesis for for-sale properties is most noticeable to the southwest of Minneapolis and the northeast of St. Paul, while evidence supporting the hypothesis for rental property is most noticeable to the northwest of Minneapolis, and the southeast of St. Paul. Like for-sale properties discussed earlier, the acceleration of disinvestment from rental property could be attributed to (1) the impact that visible disinvestment, the result of the cumulative disinvestment by all real estate interests, has on investment and reinvestment decisions by landlords and banks, and (2) the construction of newer for-for sale, and rental housing nearer the periphery, that (a) provides housing options for inner suburban renters who want to move from inner suburban housing, and, (b) and safer investment options for landlords and banks compared to inner suburban rental property.

Implications for the Minneapolis-St. Paul Metropolitan Area

This dissertation set out to answer three questions: (1) Is inner suburban disinvestment greater compared to outer suburbs, (2) Has inner suburban disinvestment increased to a greater degree compared to outer suburbs, and (3) Has inner suburban disinvestment accelerated faster compared to outer suburbs during the period 1980 through 2010. The answer to these questions is generally yes. Inner suburban disinvestment from for-sale property first noticeable in 1980, remains so in 2010. Disinvestment from rental property occurred later, becoming first noticeable in 2000, and then expanding to most inner suburbs in 2010, or at least 30 years after noticeable

disinvestment from for-sale property. Disinvestment from most inner suburbs increased and accelerated between 1980 and 2010. Although increased and accelerated disinvestment from rental property started 20 years later compared to for-sale property. Furthermore, disinvestment takes on sectoral pattern, especially in the areas to the northwest of Minneapolis, and to the southeast of St. Paul.

Clearly, the devalorization cycle is (1) driven by private real estate decisions and supported by the federal, state and regional policies that promote private investment at the periphery, and (2) at the same time, the lack of government policies that frustrate private reinvestment in inner suburbs. Ultimately, both private decisions and public policies result in inner suburban disinvestment and the physical (deteriorating structures), social (migration of lower-class households), economic (lower financial status), decline of the neighborhood.

Fundamentally, if decline is to be stabilized, reversed, and/or prevented, especially, in the areas especially to the northwest of Minneapolis and to the southeast of St. Paul, public policies ought to direct and encourage private investment decisions in ways that result in more equitable balance between inner and outer suburbs. A public policy partnership between the Minnesota State Department of Transportation, the Housing Finance Agency, along with the Metropolitan Council, the regional planning agency, and local governments to include cities and school districts, ought to focus on three tasks: (1) improving the economic status of existing lower-income households in their current neighborhood, (2) developing policies that result in the reduction or racial, ethnic and/or lower-income concentrations, and (3) promoting reinvestment (rehabilitation, reuse, and/or redevelopment), as long as it does not harm lower-income

households through displacement. If lower-income households have to be displaced it ought to be in ways that benefit the household, and do not increase racial or ethnic contractions at other locations.

Implications for Other Perspectives of Neighborhood Change

The results of this dissertation provide evidence for a capital based theory of suburban decline. In contrast to the ecological theories, that argue neighborhood decline is the result of individual decisions (demand side) either as a result of forces larger than the neighborhood, racial or ethnic intolerance, or a desire for better housing, or public service value, the capital based theory (supply side) argues that neighborhood change is the result of disinvestment caused by the desire for profitable housing investment, the idiosyncrasies of the built environment, and government policies resulting in capital moving to the metropolitan area periphery and out of inner suburbs.

It was stated at the outset of this dissertation, that conventional wisdom often lays the blame for neighborhood decline on who moves in and who moves out, and that because neighborhood migration is easily observable, this makes some sense. But it was the hypothesis of this research that the less visible disinvestment of capital from suburban neighborhoods, like the inner-city neighborhoods before them, is an initial cause of suburban decline that precedes, and coincides with, the more observable physical, social, and economic indicators of decline. Because this research provides evidence for a capital based theory of neighborhood decline, the implication that neighborhood decline begins with, and is caused solely by lower-come whites, or racial or ethnic minorities' households moving into the neighborhood can be rejected.

This is not to say that the competing theoretical perspectives have no explanatory value, or that other factors such as discrimination, perceived school quality, employment locations, or regional or local land use polices that indirectly result in concentrations of racial, ethnic and/or lower income households, have no effect. It is that the influence of the other theoretical perspectives and factors occurs within a capitalist system where the growth and decline of the built environment is driven by the needs of capital to be profitable. Consequently, public policies need to be guided by an integration of the theoretical perspectives, but the role of capital in the crafting of these public policies ought to be paramount.

Directions for Public Policy

The lack of effective policies to combat decline is attributable to confusion over the sources or causes of the decline. The results of this research help establish a theoretical foundation from which inner suburban decline can be understood and effective public policies developed to address the role that capital plays in the decline of inner suburbs.

Recall that the cycle of devalorization (disinvestment) from inner suburban neighborhoods is situated within a larger process, whereby capital, supported by federal and state tax and infrastructure policy, is propelled outward toward the periphery and away from inner suburbs. The propulsion of capital to the periphery is the result of the search for greater surplus value (profitability), as well as the idiosyncrasies of the built environment that act as a barrier to further accumulation. Like the fully built inner-city neighborhoods before them, inner suburban neighborhoods embody these

idiosyncrasies and therefore act as a barrier to reinvestment, resulting in capital investment shifting farther outward to the metropolitan area periphery.

Devalorization, caused by disinvestment from inner suburbs, is the result of actions taken by different real estate interests—that is, homeowners, landlords, real estate agents, and banks—to withdraw or reduce capital from inner suburbs because of the comparatively lower return and higher risk of investing in the maintenance and upgrading of older housing stock. Yet the specific causes about why it represents a greater risk and lower return are different among these interests. These causes can be boiled down to the following: (1) the effects of the prisoner's dilemma, whereby it is economically rational for homeowners and landlords to disinvest; (2) the financial constraints of homeowners that prohibit or limit their ability to reinvest; (3) racial fear, exploited by real estate agents (blockbusting) for financial gain, that results, like item number 2, in neighborhoods or concentrations of lower-income households that are financially constrained from investing in the maintenance and upgrading of their home. This can also occur, without the participation of real estate agents, through process of blowout; and (4) discrimination by lenders, based on the assumption that lending in minority neighborhoods represents a comparatively higher risk, so lenders discriminate by redlining (Smith, 1979, pp. 543–545). The end result of these causes of disinvestment either deters a property owner's willingness to invest and/or constrains their financial capacity to do so.

So what should the response be, if any, to the disinvestment of capital from inner suburbs? Policy prescriptions addressing inner suburban disinvestment ought to focus on three different parts of the disinvestment process:

(1) Prevention and/or stabilization of disinvestment from existing residential property. See Figure 8 below. These efforts occur early in the devalorization process and include financial and legal tools to induce or press individual property owners to invest by overcoming the influence of the prisoner's dilemma and individual financial constraints;

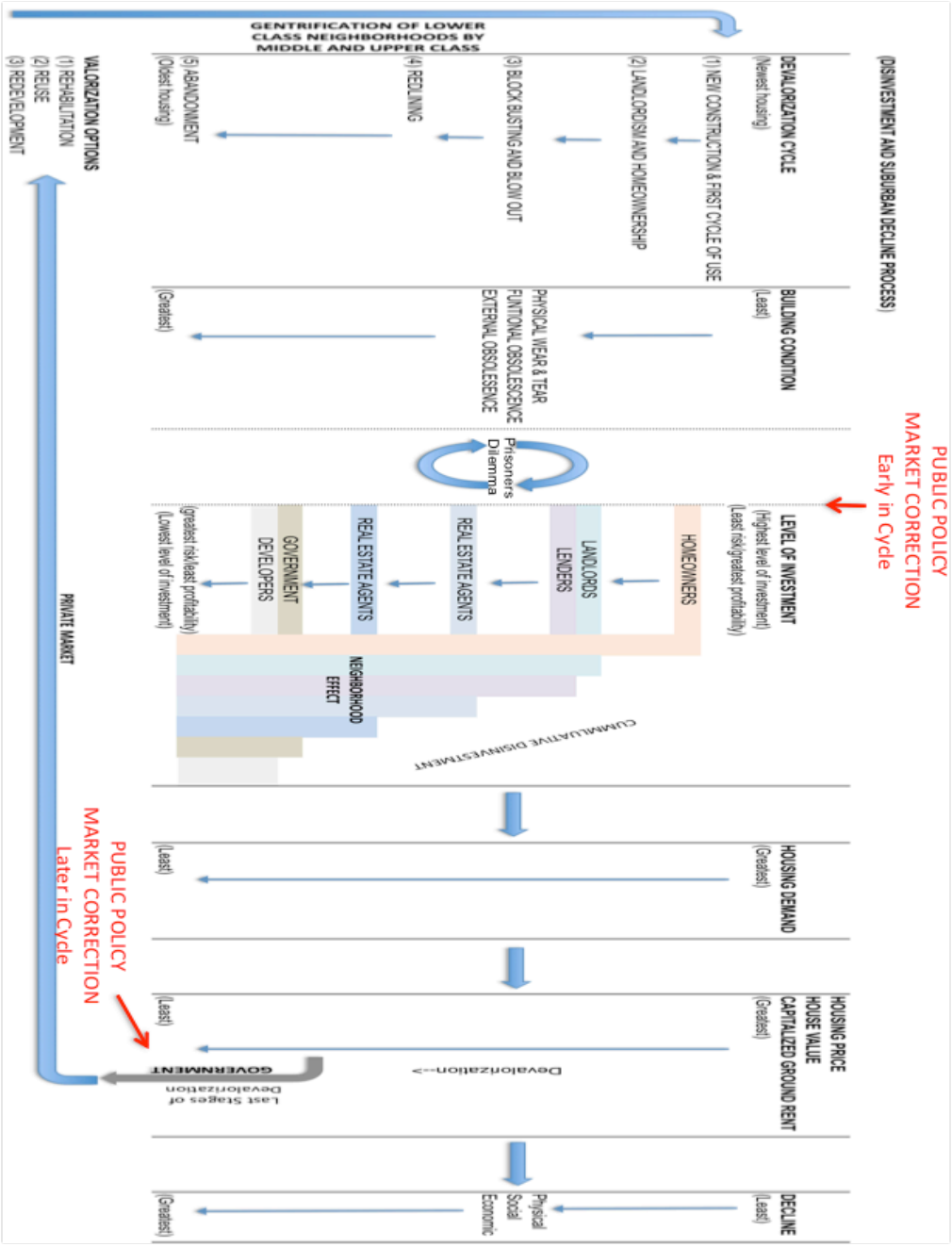
(2) Redevelopment of existing residential property to some higher and better use. These efforts occur later in the devalorization process and are aimed at redeveloping property where the physical wear and tear and the functional and external obsolescence have become so great that the properties cannot be profitably rehabilitated or reused. Making redevelopment possible requires funding and financing—for example, grants and tax increment financing—to pay for the remaining property value, which is typical of the last stage of the devalorization process, as well as demolition, relocation, soil remediation and correction, and infrastructure construction.

Moreover, it requires the use of the eminent domain power to assemble blighted areas large enough for redevelopment to become feasible. The ability of the government to assemble the land required for feasible redevelopment has become politically more difficult since the national debate, in 2006, over the *Kelo v. City of New London* decision by the Supreme Court. Out of this debate, Schultz (2010, pp. 194–198) recommends implementing a variation of the environmental impact statement (EIS) to evaluate the significant effects and reasonable alternatives for avoiding or minimizing unfair and harmful effects on the poor and minority neighborhoods of the redevelopment project. One solution could be to construct new affordable housing as part of the new redevelopment project, making it a mixed income redevelopment project: and

(3) Federal, state, and regional tax and infrastructure policies that support and facilitate the ongoing development at the periphery at the expense of the inner suburbs.

Effective public policies can retain or direct capital back into inner suburbs through the rehabilitation, reuse, or redevelopment of residential property. Consequently, the housing stock will remain attractive to middle-class households. Retaining and attracting middle-class households will: (1) increase the housing reinvestment, and (2) prevent and/or reduce the concentration of lower-income households that are often racial and ethnic minorities, which results in the problems associated with concentrated poverty and the financial stress place on local government service providers.

Figure 8: Market Failure-Public Policy Correction



This is going to be a challenge. Since the 1930s, the federal government, through tax and infrastructure policy, has implicitly embraced the filtering approach as a means of providing housing for low- and moderate-income households. Moreover, the role for all levels of government policy has been to promote the construction of housing for higher-income households at the urban periphery. Still, at the same time, these polices have contributed to the decline of, inner-city neighborhoods, and now inner suburban neighborhoods. Furthermore, this issue takes on a greater importance as the discussion around metropolitan growth at the periphery and reinvestment are now occurring within the framework that places greater emphasis on environmental sustainability and social equity.

While the solutions to the causes of disinvestment require cooperation and assistance from state, regional, and federal government, it is local government that is closest to the issue and often is responsible for dealing with the consequences of disinvestment and decline. Furthermore, it is local government that plays a leading role, either through the use of its own resources and programs or in partnership with other levels of government, to induce or compel property owners to invest in the maintenance and upgrading of their property. It is with this in mind that the following discusses one of the least understood and most invisible causes of housing disinvestment—the prisoner's dilemma—and how it acts as a deterrent to housing investment, as well as some examples of public policy options to negate or limit its influence, thereby decreasing disinvestment and consequently increasing investment.

Prisoner's Dilemma

An influential, and largely invisible, dynamic contributing to disinvestment is the strategic decision-making structure that influences the property owner's decision to disinvest. In effect, the structure, or the prisoner's dilemma, compels the individual property owner to disinvest, thereby leaving the neighborhood housing stock in a greater state of obsolescence and physical wear and tear.

According to Schelling (2006, p. 14), these are situations in which the individual's choices depend on the choices of other people. Understanding what a group of individuals will do is not a simple aggregation of individual choices, but is transformed by the system of interaction between individuals and their environment—that is, other individuals. How well each person does for himself or herself in adapting to their environment is not the same as how satisfactorily a social environment they collectively create for themselves (Schelling, 2006, p. 19).

The example below, adapted from Bourne (1981, p. 181), illustrates how the prisoner's dilemma results in property owners making the economically rational decision to disinvest. The result is neighborhood housing that is not maintained and/or upgraded. It continues to decline further, both in its physical condition and consequently in its price relative to new housing.

Assume a neighborhood with two homeowners, A and B. The value of each house (land and building) is determined by its condition, as well as by the condition of the other houses in the neighborhood (spillover effect) (Adams, Cidell, Hansen, & VanDrasek, 2002, p. 5; O. A. Davis & Whinston, 1961, p. 107; Rothenberg, 1967, p. 116; Taub, Taylor, & Dunham, 1984, p. 122). As neighborhood housing ages, it begins

to experience physical wear and tear, and functional and external obsolescence, requiring reinvestment in maintenance and upgrading to maintain its desirability and demand in the market. Each owner has savings that could be invested in housing or low-risk bonds. Assume that the return on the bonds is 5%. Because housing is individually owned, each homeowner must make a choice to cooperate (invest) or defect (not invest). Moreover, each homeowner is uncertain about the choice his neighbor will make. The goal of both is to maximize their return on investment of the funds they have available (Axelrod, 1984, pp. 3–24, M. D. Davis, 1983, pp. 3–10; McCain, 2009, pp. 8–26).

Table 7: The Strategic Setting: The Reason Homeowners Disinvest in Housing Maintenance and Upgrading

Alternatives	Homeowner A	Homeowner B	Total Housing Investment
A and B invest	10% (+5%)	10% (+5%)	10%
Only A invests	3% (–2%)	1% + 5%[a] = 6% (+1%)	4%
Only B invests	1% + 5%[a] = 6% (+1%)	3% (–2%)	4%
Neither invests	5%[a]	5%[a]	0%

[a] Return on investing in bonds.

If both owners A and B choose to cooperate by investing in housing, the result is that each achieves a return of 10% due to the investment in their property and the spillover effect the investment in the other's property has on the return on theirs. This is 5% better than if each would have invested in bonds. The total neighborhood housing

investment gain is 10%. If A invests and B does not, then A experiences only a 3% return because B's housing is still in a depreciated state and therefore contributes nothing to the return. This is 2% less than A would have achieved had A invested in bonds. But owner B receives a modest 1% increase as a result of the spillover benefits from owner A's housing investment, as well as a return of 5% on the bond investment, for a total return of 6%. This is 1% better than had B invested in bonds. If owner B invests and A does not, the result is the same, but it is A that does better and B that does worse. In both cases, the total housing investment gain is 4%. If both choose not to invest, and instead invest in bonds, both achieve a 5% return on the bonds, but the total housing investment gain is 0%. So because both homeowners are uncertain what the other will do, the rational choice—that is, the choice that is best for each owner individually—is to defect. Neither is guaranteed a 10% return, but both are guaranteed a 2% loss if one invests and the other does not. Consequently, housing investment does not occur and the housing stock continues to fall into greater physical wear and tear and obsolescence, and the neighborhood declines. The optimal solution can be achieved if the uncertainty is removed from the exchange. If one could have some expectation that the other would not defect, one could choose the cooperative solution, which would return a higher benefit to both.

Promoting mutual cooperation is not about advising the individual player/homeowner how to best choose in a given situation; it is about transforming the strategic decision making structure itself (Axelrod, 1984, p. 126). The following are three approaches to promoting mutual cooperation, by changing the strategic decision making structure, and some examples of how these approaches may inform public policy to

prevent, or even reverse, housing disinvestment. According to Axelrod (1984, pp. 125–126), the criteria to promote cooperation among individuals, when subject to the prisoner's dilemma, is: (1) to arrange that the same individuals so they have the expectation of meeting each other again, (2) to ensure that they will be able to recognize each other from the past, and (3) to ensure that they will be able to recall how the other has behaved until the present. This ensures continuing interaction, which makes it possible for cooperation, based on reciprocity, to become stable.

Mutual cooperation requires changing the strategic setting by (1) enlarging the shadow of the future, (2) changing the payoffs of the prisoner's dilemma, and (3) teaching players values, facts, and skills that promote cooperation (Axelrod, 1984, p. 126).

Enlarging the Shadow of the Future

According to Axelrod (1984, p. 126), mutual cooperation can become stable if the future is sufficiently important relative to the present—that is, the probability that reciprocity will occur and that it will occur sooner, rather than later. What makes the future less important to each player are the facts that (1) the relationship may end, and (2) each player prefers to receive the benefit sooner, rather than than later. Consequently, the future becomes less important. As the future become less important, defection becomes more attractive as the better strategy.

Achieving mutual cooperation is accomplished by enlarging the shadow of the future or by increasing the probability of continuing interaction between players (Axelrod, 1984, p. 16). Increasing the probability of interaction requires that (1) the interaction be made more durable, and (2) it be made more frequent. A more durable

interaction implies that the players are in close proximity for a longer period of time. This allows patterns of reciprocity to be worth trying and to become established (Axelrod, 1984, p. 129).

Applying the principle of durability to neighborhoods means there would be very little turnover in housing—that is, very few people moving out of or into the neighborhood. Here, public policy really has little if any direct ability to coerce or induce people to stay. But neighborhoods already have a level of durability. According to Ihrke and Faber (2012, p. 4), about 25% of property owners moved in the period from 2005 to 2010. This means that 75% remained in place. By comparison, 66% of renters moved during the same period, which means 33% remained in place.

Therefore, an example of a public policy to maintain or increase the durability between neighborhood homeowners would be to prohibit or limit the number of rental single-family or twinhome properties. The justification for this policy is that renters move more often and are typically not responsible for maintaining the property. Furthermore, the owner/landlord, who is responsbile for maintaining the property, very often does not live in the neghborhood, and therefore, there is no opportunity for the absentee landlord and the neighborhood homeowners to develop a relationship, which is a requirement for mutual cooperation based on reciprocity.

Applying the principle of frequency to neighborhoods means that the frequency of the payoff (maintenance and upgrading) would occur sooner rather than later. An example of a public policy to increase the frequency of the payoff would be to provide grants, loans, tax benefits, and/or rehabilitation technical assistance to induce the homeowner to undertake maintenance and upgrading. While this does not directly

cause an increase in frequency, it can induce the property owner to undertake maintenance and/or upgrading that would.

A good example of a widely used Minnesota program to increase frequency was the “This Old House Program” enacted by the state legislature in 1993. It provided older homes with an exclusion of new property value, related to an improvement, from property tax for a certain number of years. The program’s purpose was to preserve and revitalize old neighborhoods. The program was closed, by a shortsighted legislature, to new applicants in 2003. At its closing, 56,940 households, in 86 of 87 counties, utilized the program for a total of $667,023 of excluded market value (Minnesota Department of Revenue, 2005, pp. 1–2). This is a program that should be reinstated because it focuses mainly on addressing structural obsolescence.

Both durability and frequency can be improved through government investment in redevelopment, public infrastructure, and public amenities. It improves durabilty in that residents and local government (which is never going away) are always in close proximity to each other and therefore have the opportunity to develop a relationship of mutual cooperation. It improves frequency in that most well-run cities make ongoing and regular improvements to roads, trails, and parks, which increases the frequency of the payoff. In this sense these improvements mimic the effects neighboring home owner investment, in that the homeowner who does invest sees the investment by the local government, and consequently, has an increased sense that his investment return will be higher, and is therefore more likely to maintain their property. This is not to suggest that public spending alone can replace private home maintenance and upgrade

spending, but simply that it is one tool (a kick start of sorts) of many available to improve durabilty and frequency.

Changing the Payoffs

According to Axelrod (1984, p. 134), changing the payoffs changes the strategic setting by increasing the likelihood of cooperation. This can be achieved by changing the incentive for cooperation by increasing the return, thereby making it equal to or more beneficial relative to defecting. It can also be achieved by increasing the disincentive for defection by increasing the penalty for defecting, thereby reducing the payoff for defection, making it more commensurate with the payoff for cooperating.

Examples of increasing the incentive for cooperation (investment) include providing grants and lower-interest loans as an inducement to invest. In this case, unlike providing financial assistance because the owner is financially constrained, providing a grant or a lower-interest loan increases the return as the homeowner equity or cost of debt financing is reduced, thereby increasing the return. The amount of inducement provided should take into consideration how much is required to make the return for cooperating (investing) competitive with the return for defecting (not investing).

Examples of increasing the disincentive for defection (non-investment) include establishing local ordinances that institute programs that require a minimum standard for housing maintenance and upkeep. This could include programs like rental housing licensing, which typically requires an exterior and interior inspection as a condition of being able to rent units in the property. It could also include truth-in-housing or point-of-sale programs that require owner-occupied housing to pass an interior and exterior inspection before the property can be sold. Penalties for violating these minimum

standards can range from civil to criminal penalties and include financial fines, loss of rental income, and possible jail time. So where defection of all neighborhood property owners would result in a 5% return (see Table 7 above), the penalties for not investing in maintenance and upkeep would reduce this return below the return for cooperating.

Teaching Players to Cooperate

Teaching others to cooperate is about shaping the values of property owners to consider the welfare of other as well as their own when making decisions, and improving their ability to recognize when other homeowners have made the decision to invest in their housing and when they have not. Applying this to neighborhood housing investment means educating homeowners on the individual and neighborhood benefits of maintaining and investing in their housing. The assumption is that if each person does this, it will engender similar behavior in others in the neighborhood. A means of shaping values and educating citizens about the importance and benefits of maintain the neighborhood housing stock could be patterned after, or incorporated into, the National Night Out (NNO) program. The NNO program develops and promotes various crime prevention programs devoted to safer neighborhoods in 15,000 communities. Certainly, this approach could not succeed alone, as there will always be people—free riders—who will not reciprocate, and being altruistic by always cooperating or investing leaves open the possibility of being exploited or being stuck with what the prisoners dilemma calls the sucker's bet. This is why it must be coupled with local government ordinances that establish minimum requirements for property maintenance.

Another essential element of voluntarily cooperating in the investment of housing is to be able to recognize the other homeowners and to remember their choices from

past interactions. This is fundamental if stable cooperation based on reciprocity in housing investment is to be achieved. As stated earlier, this means that the relationship between property owners must be sufficiently durable and frequent. Specifically, one homeowner must be able to determine when the other has or has not invested. Knowing this helps the homeowner to know when to reciprocate and when not to. It lessens the uncertainty that is an essential element of the prisoner's dilemma. The recognition of frequency could be the use of a building permit, rental licensing inspection results, or another public program that provides grants and loans for housing investment to be reported at the census tract or block group level on an annual basis. This would give property owners a sense that investment is or is not occurring in their neighborhood.

The prisoner's dilemma is a decision-making structure that results in the individual homeowner disinvesting because of the uncertainty of what fellow homeowners will do. This cause must be sufficiently understood and a variety of approaches to developed to reduce and limit its influence and, ultimately, housing disinvestment and neighborhood decline. As Axelrod (1984, p. 141) states, "Promoting good outcomes is not just a matter of lecturing the players about the fact that there is more to be gained from mutual cooperation than mutual defection. It is a matter of shaping the characteristics of the interaction so that over the long run there can be a stable evolution of cooperation."

Directions for Future Research

First, because this is the first theoretical application, to an entire metropolitan area, of Smith's rent gap theory, as an explanation for suburban decline, this research ought to be replicated in other metropolitan areas throughout the United States to build

a broader and more comprehensive picture of inner suburban disinvestment. Second, this research hypothesizes that disinvestment is related to a suburban location relative to the central city as well as the percent of housing older than 1969, implying that older homes are subject to greater physical wear and tear as well as functional obsolescence. Future research ought to evaluate what specifically it is about older homes that make disinvestment more likely. Is it size, or architectural flexibility, meaning that the physical structure can be upgraded, and upgraded without becoming overly cost prohibitive? Even if a homeowner is willing and able to reinvest, the lack of architectural flexibility may make reinvestment astronomically cost prohibitive, so future research ought to evaluate the relationship between disinvestment and the size and architectural flexibility of the housing stock. Third, this research ought to be repeated in the Minneapolis–St. Paul area at the census tract and/or block group level to determine, at a more detailed level, where disinvestment is occurring, and to what degree.

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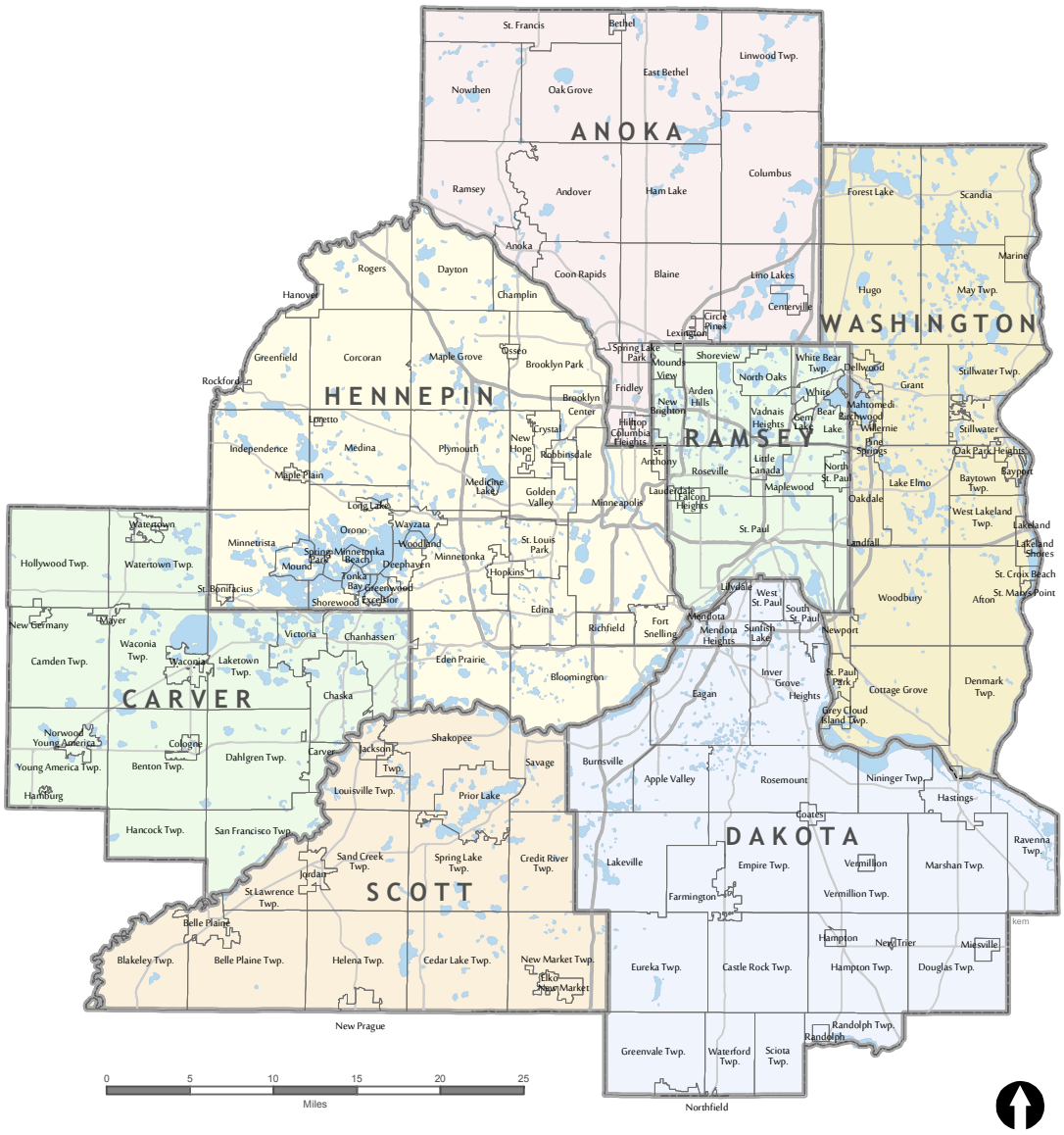
MAPS

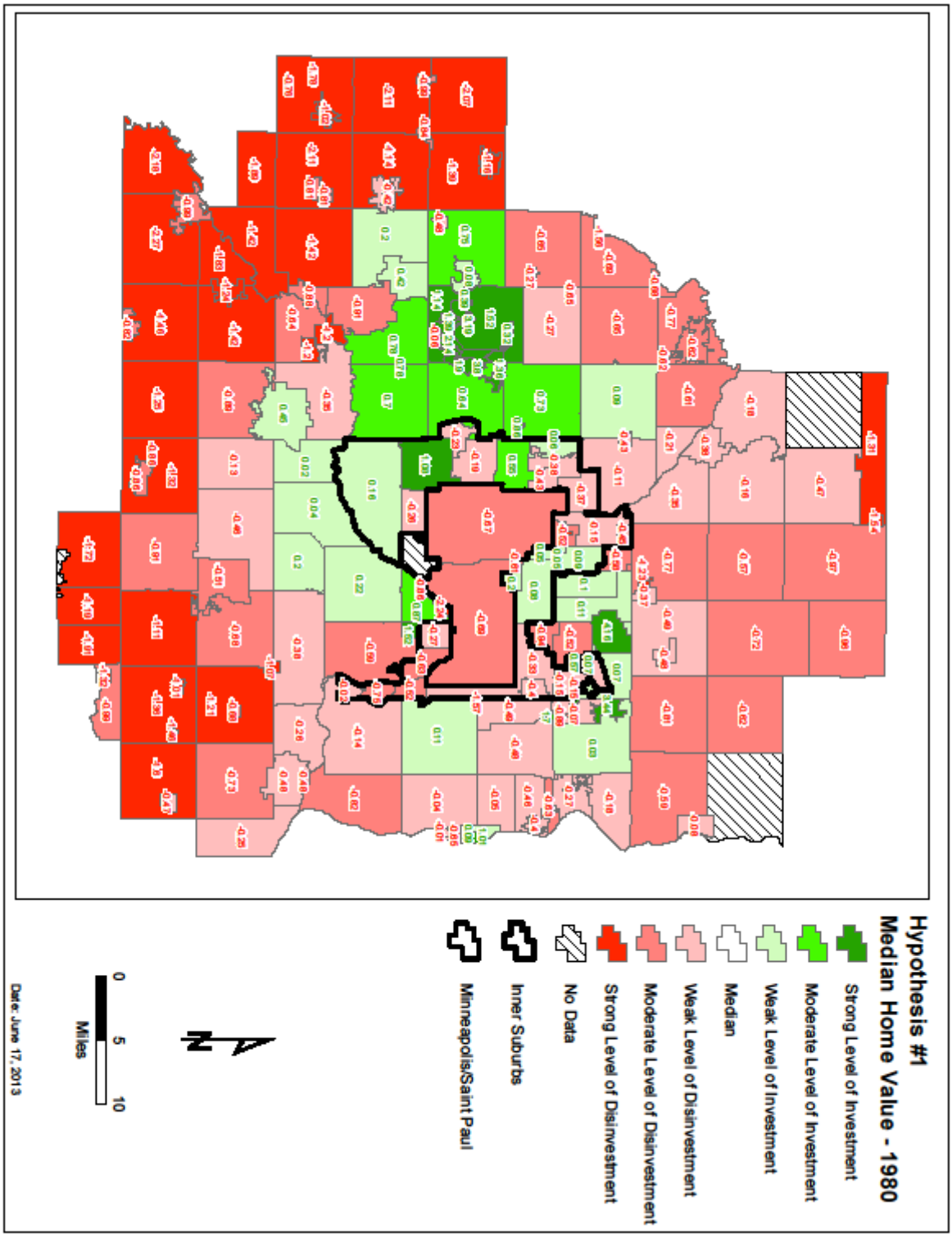
Twin Cities Metropolitan Area

Political Boundaries

Metropolitan Council

January 2012

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Strong Level of Investment
Moderate Level of Investment
Weak Level of Investment
Median
Weak Level of Disinvestment
Moderate Level of Disinvestment
Strong Level of Disinvestment
No Data
Inner Suburbs
Minneapolis/Saint Paul
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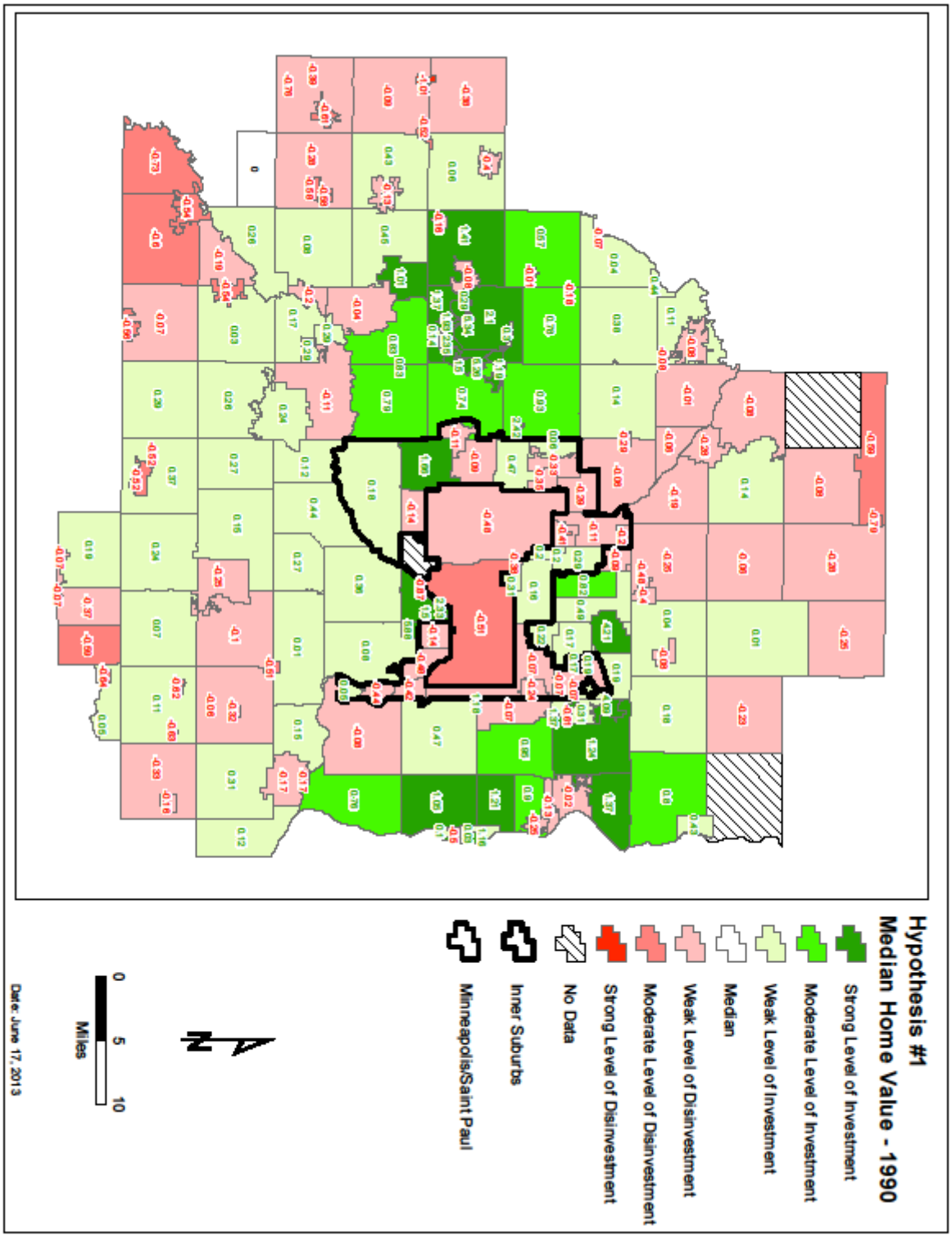
Miles
Date: June 17, 2013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Weak Level of Investment
Median
Weak Level of Disinvestment
Moderate Level of Disinvestment
Strong Level of Disinvestment
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Inner Suburbs
Minneapolis/Saint Paul
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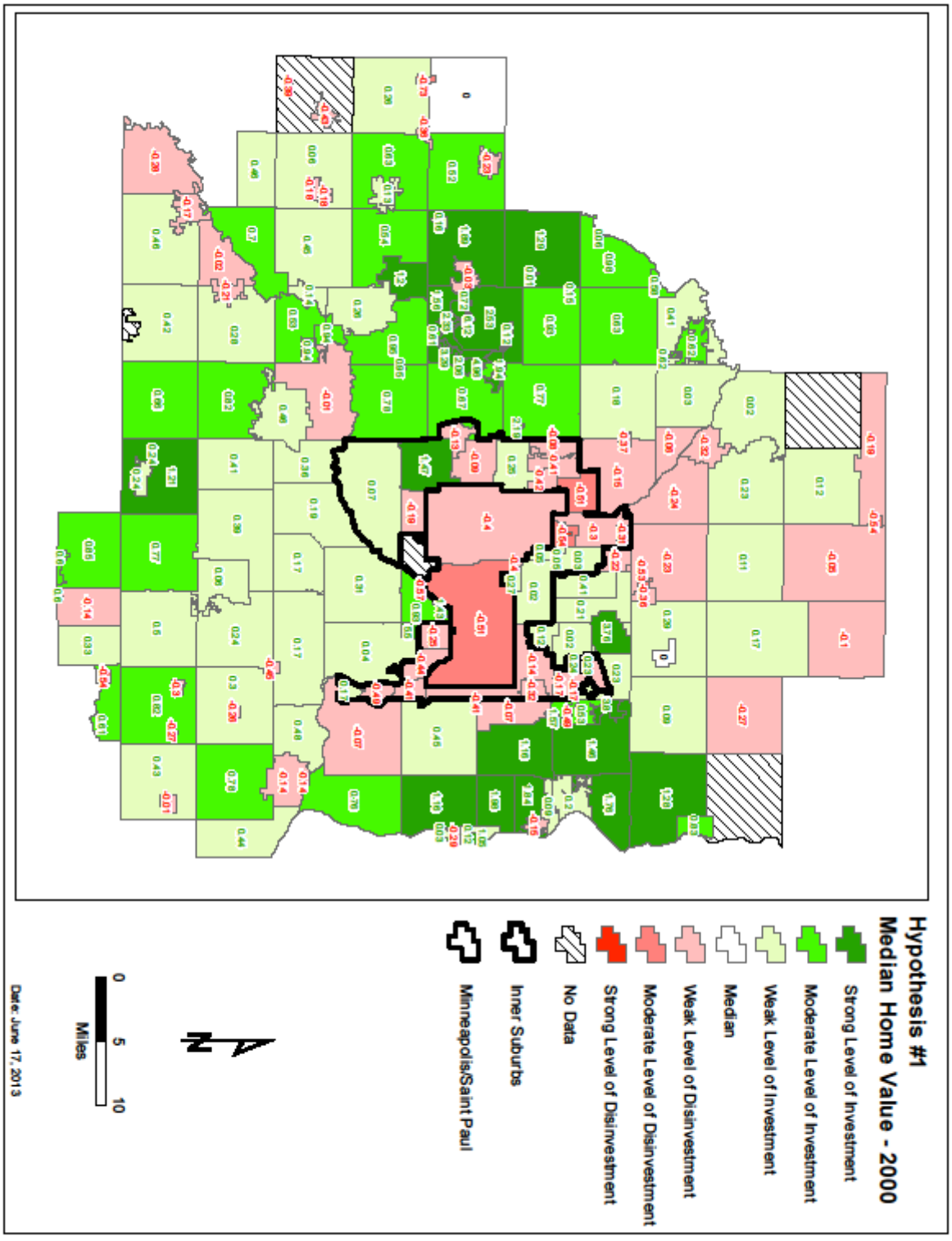
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Median
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Moderate Level of Disinvestment
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Inner Suburbs
Minneapolis/Saint Paul
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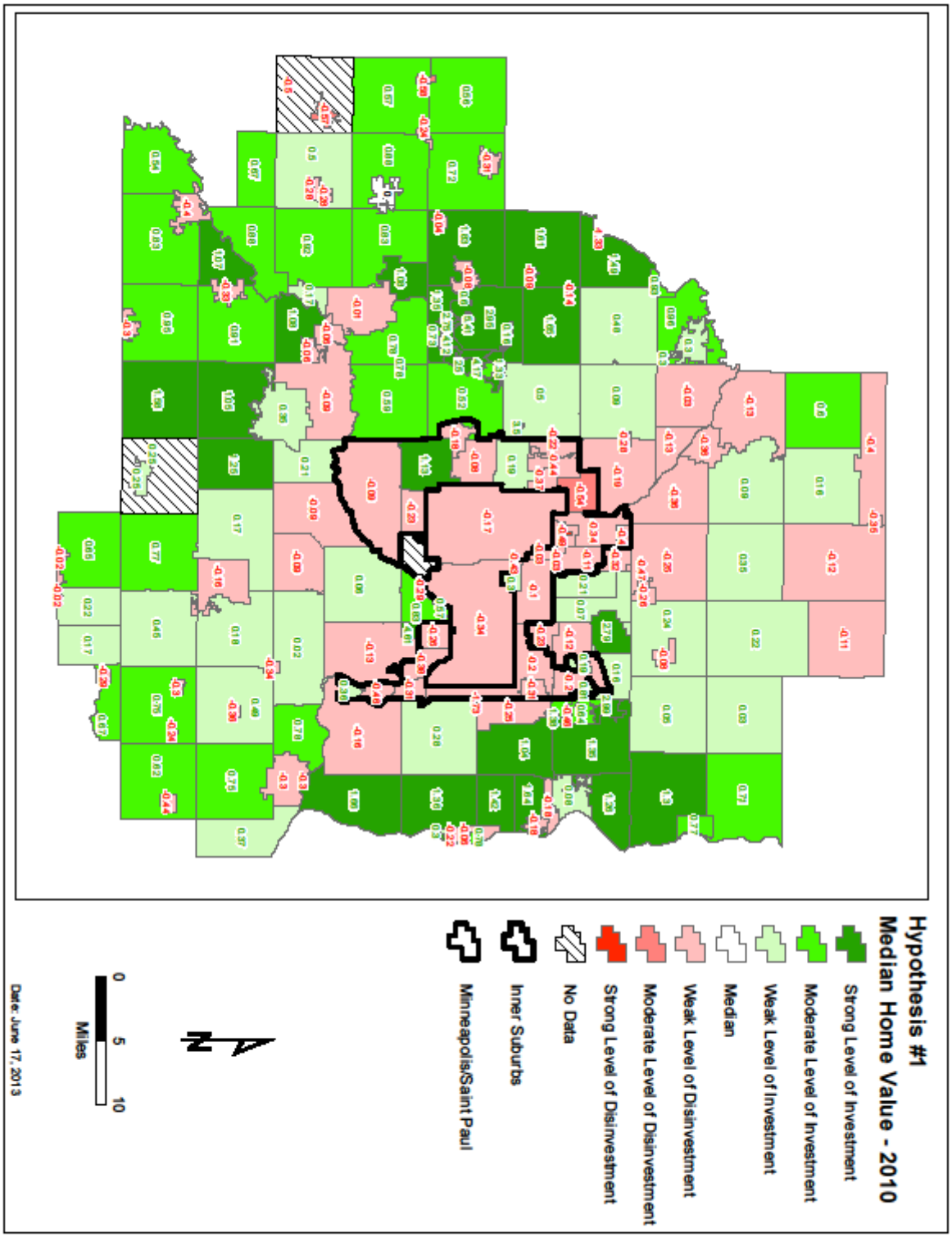
Date: June 17, 2013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Weak Level of Investment
Median
Weak Level of Disinvestment
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Inner Suburbs
Minneapolis/Saint Paul
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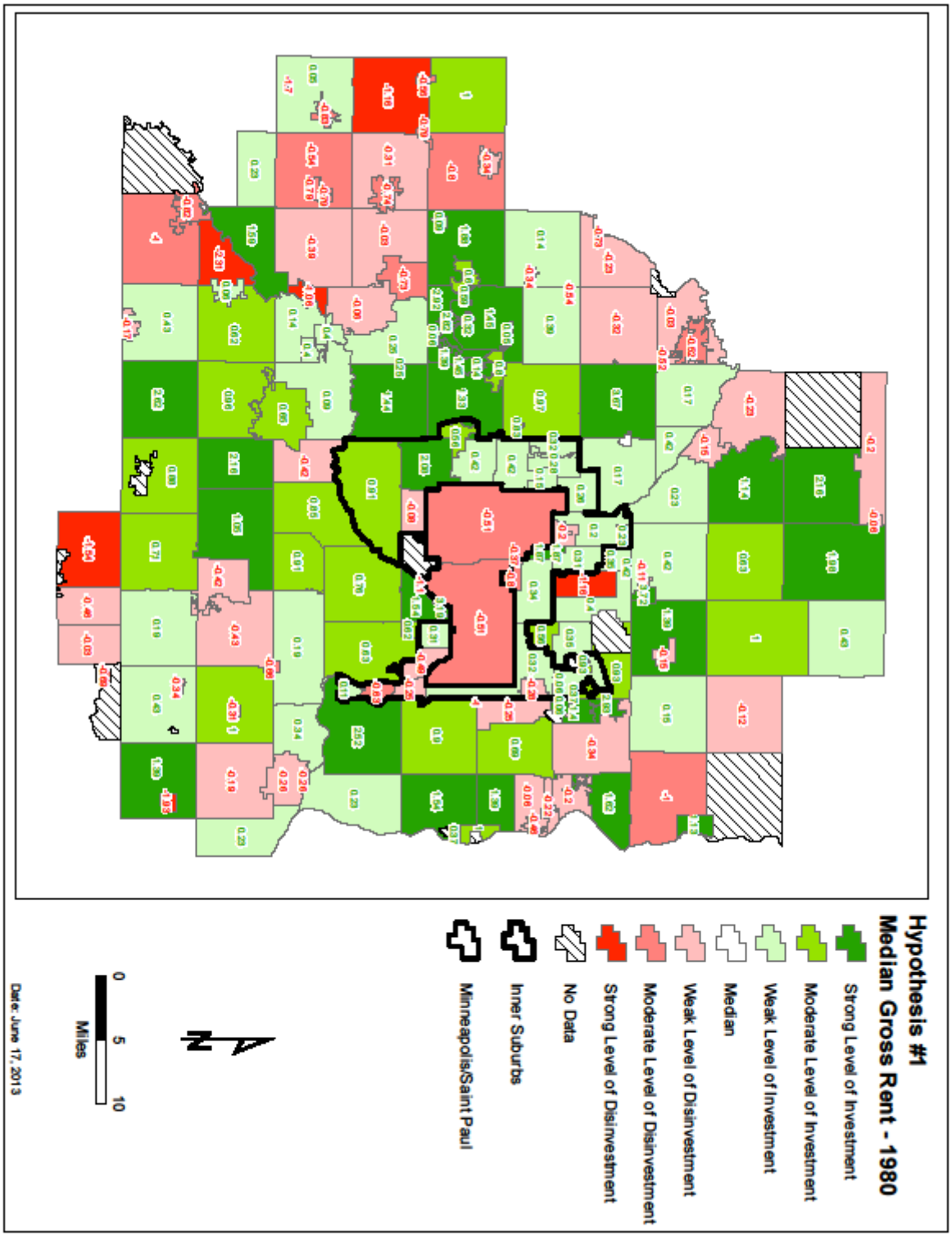
Miles
Date: June 17, 2013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Weak Level of Investment
Median
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Inner Suburbs
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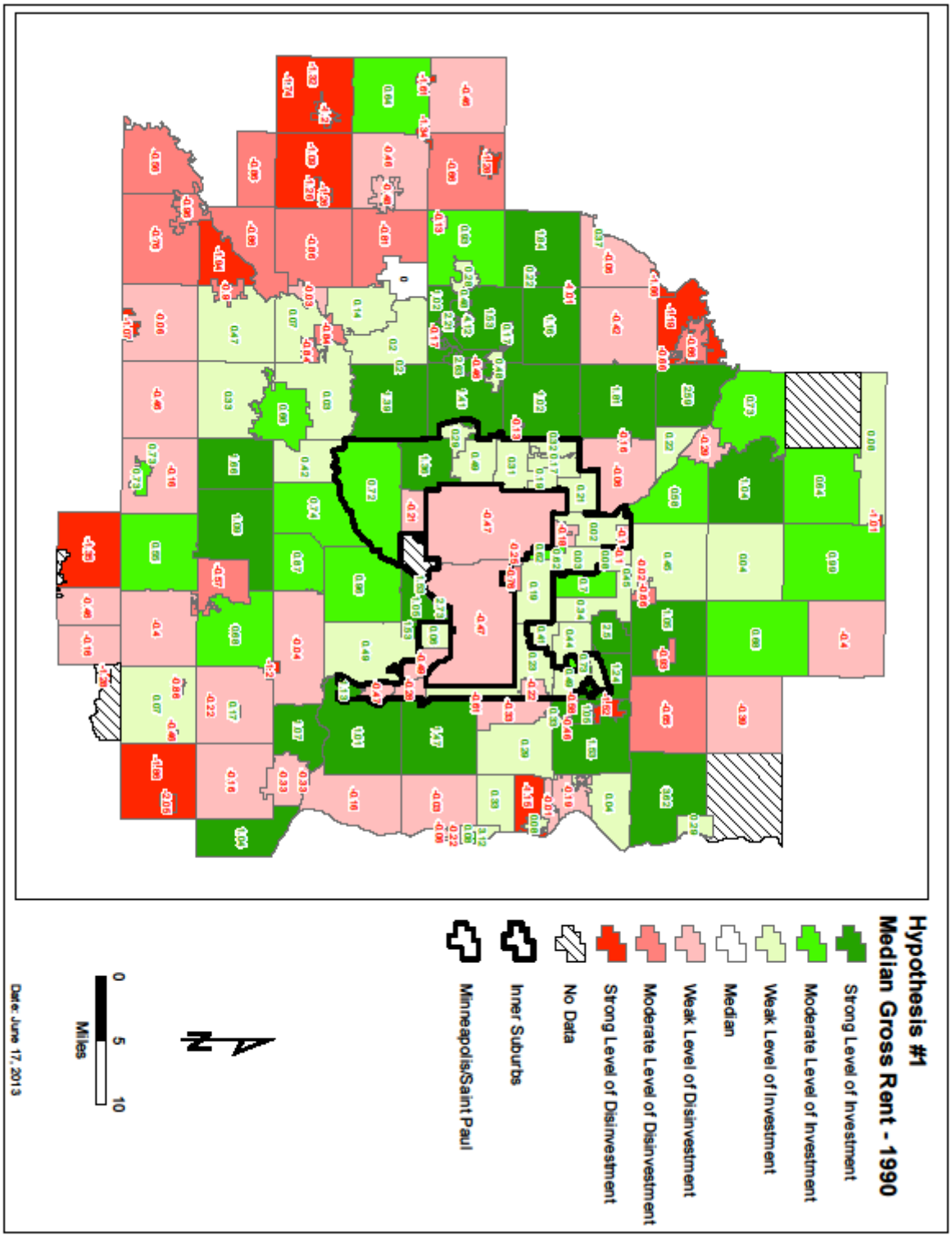
Date: June 17, 2013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Median
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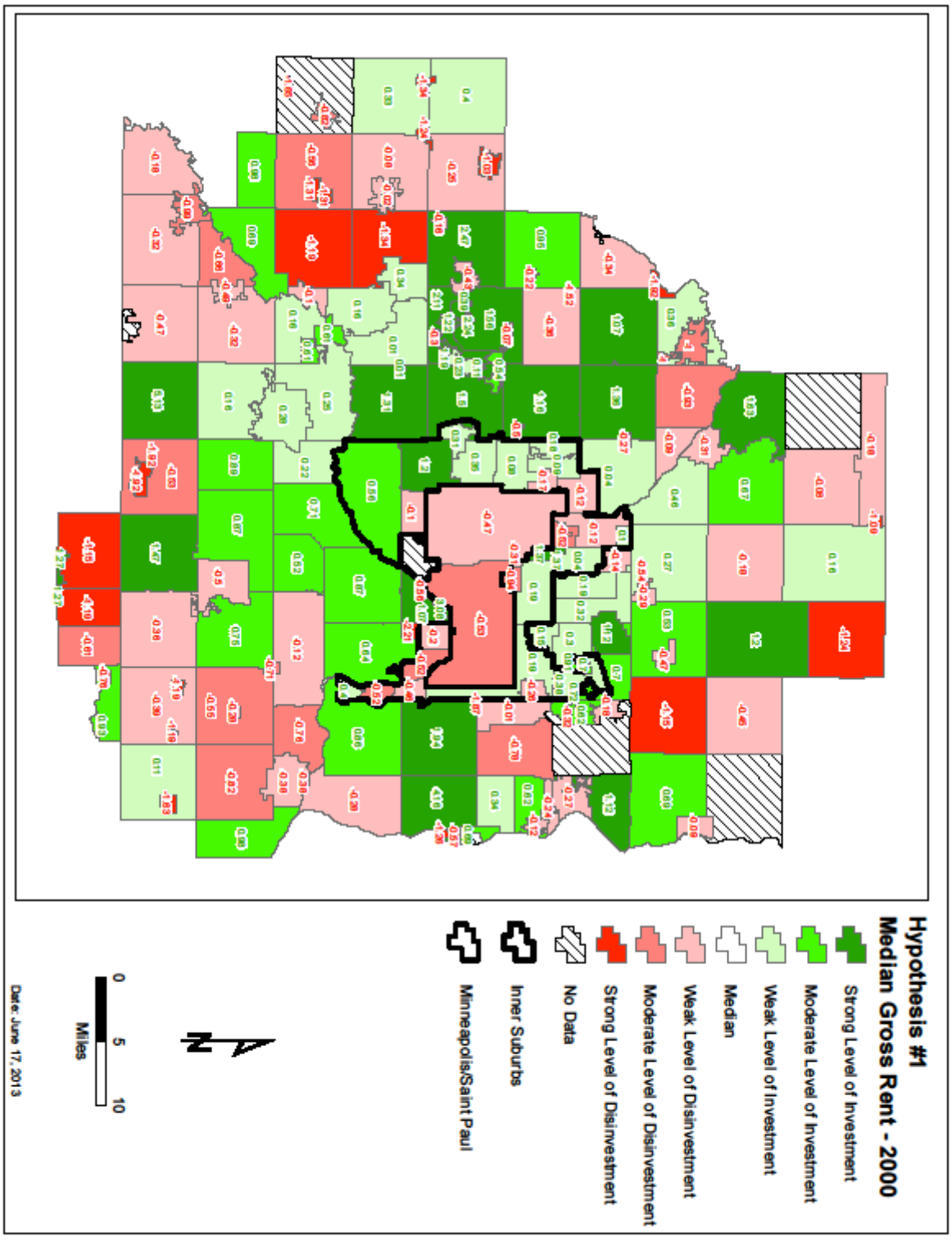
Date: June 17, 2013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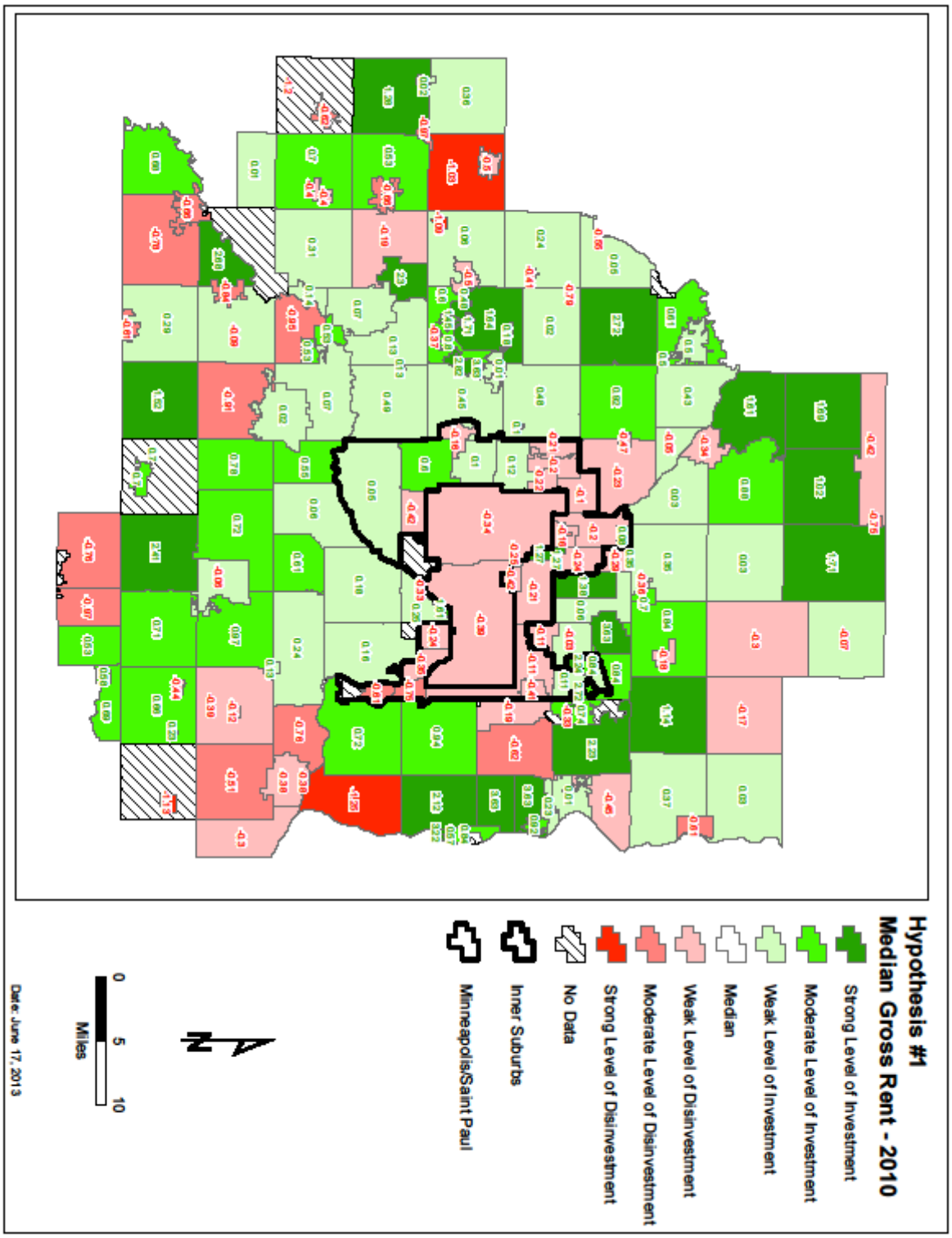
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Weak Level of Investment
Median
Weak Level of Disinvestment
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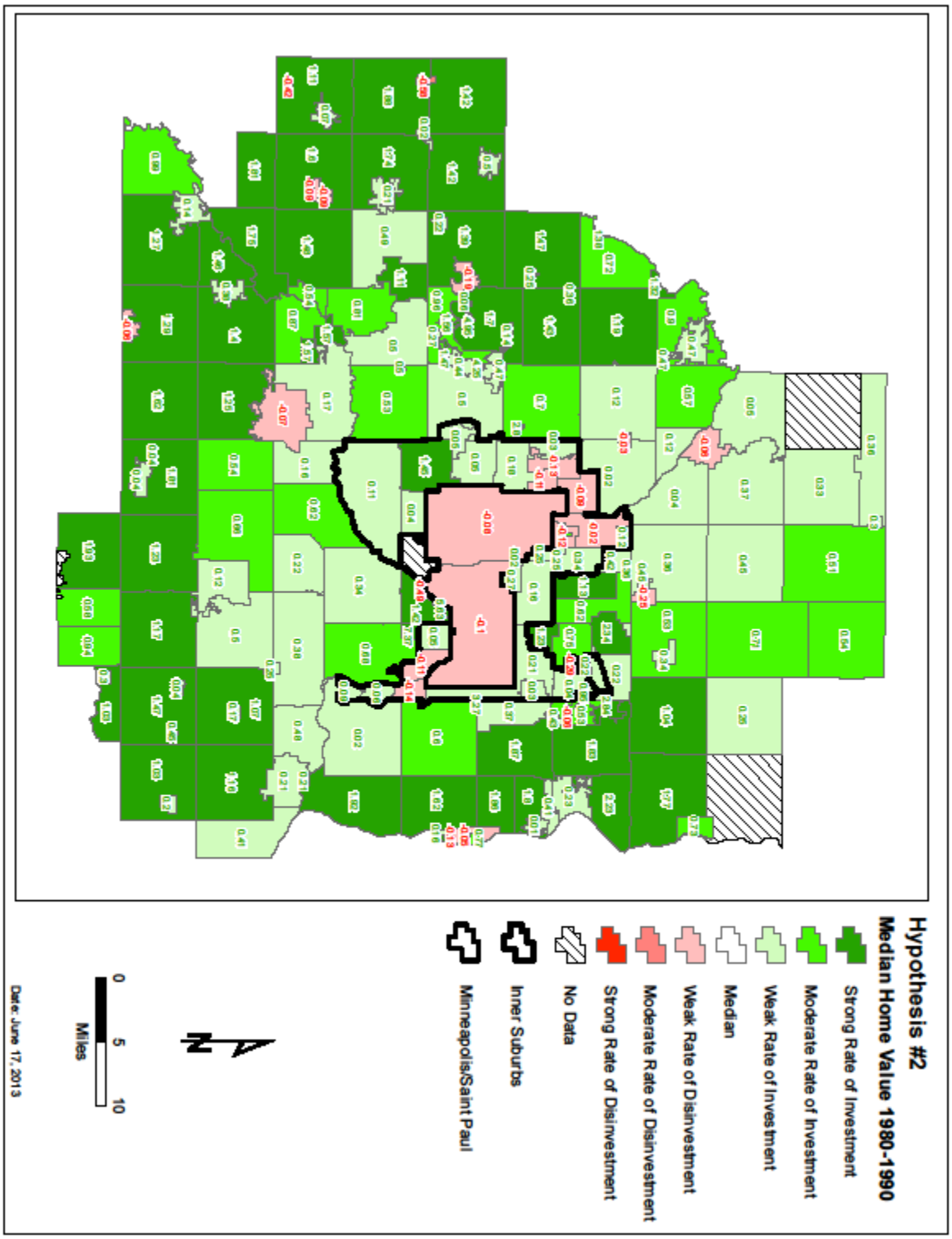
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Moderate Rate of Investment
Weak Rate of Investment
Median
Weak Rate of Disinvestment
Moderate Rate of Disinvestment
Strong Rate of Disinvestment
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Inner Suburbs
Minneapolis/Saint Paul
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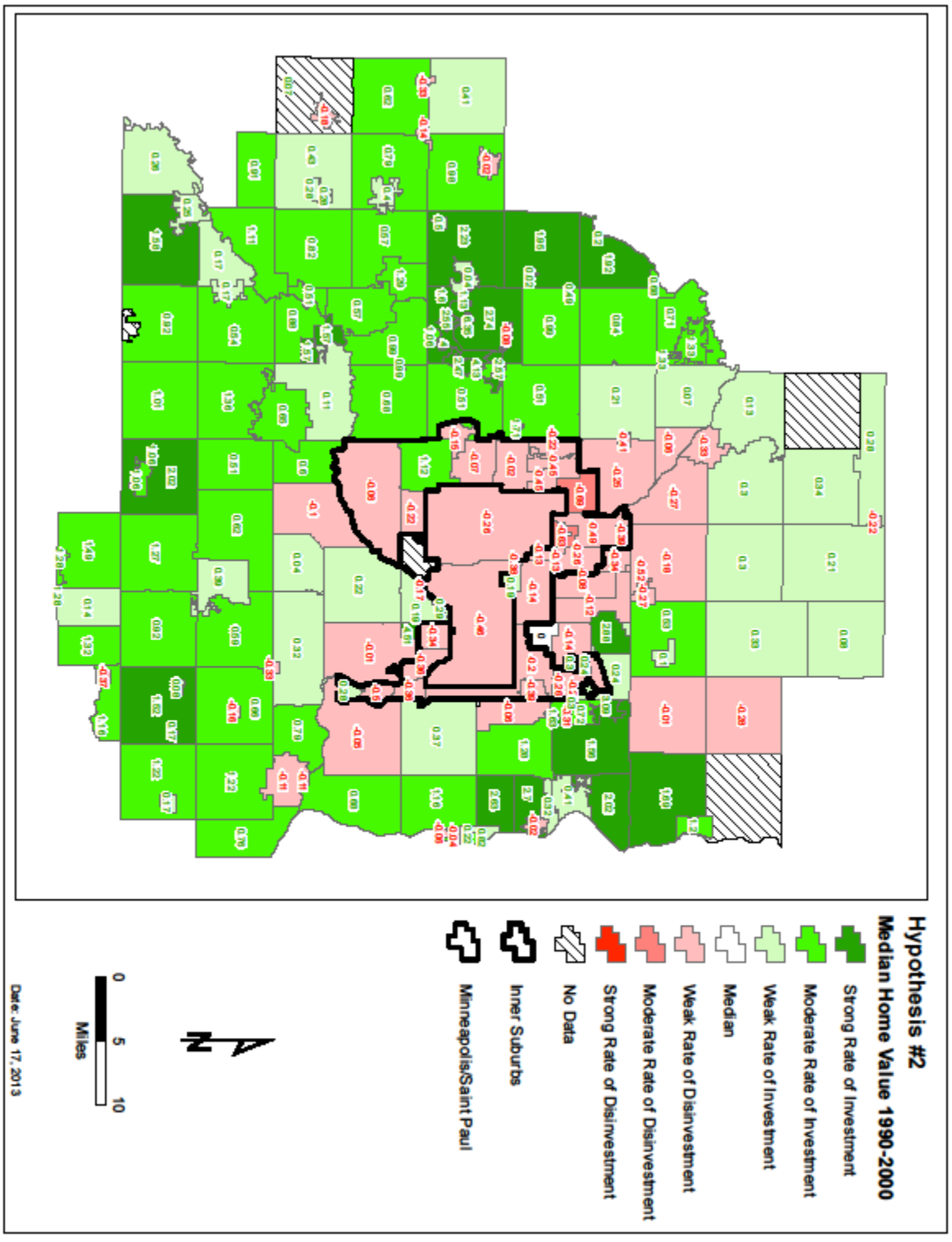
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Moderate Rate of Investment
Weak Rate of Investment
Median
Weak Rate of Disinvestment
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Strong Rate of Disinvestment
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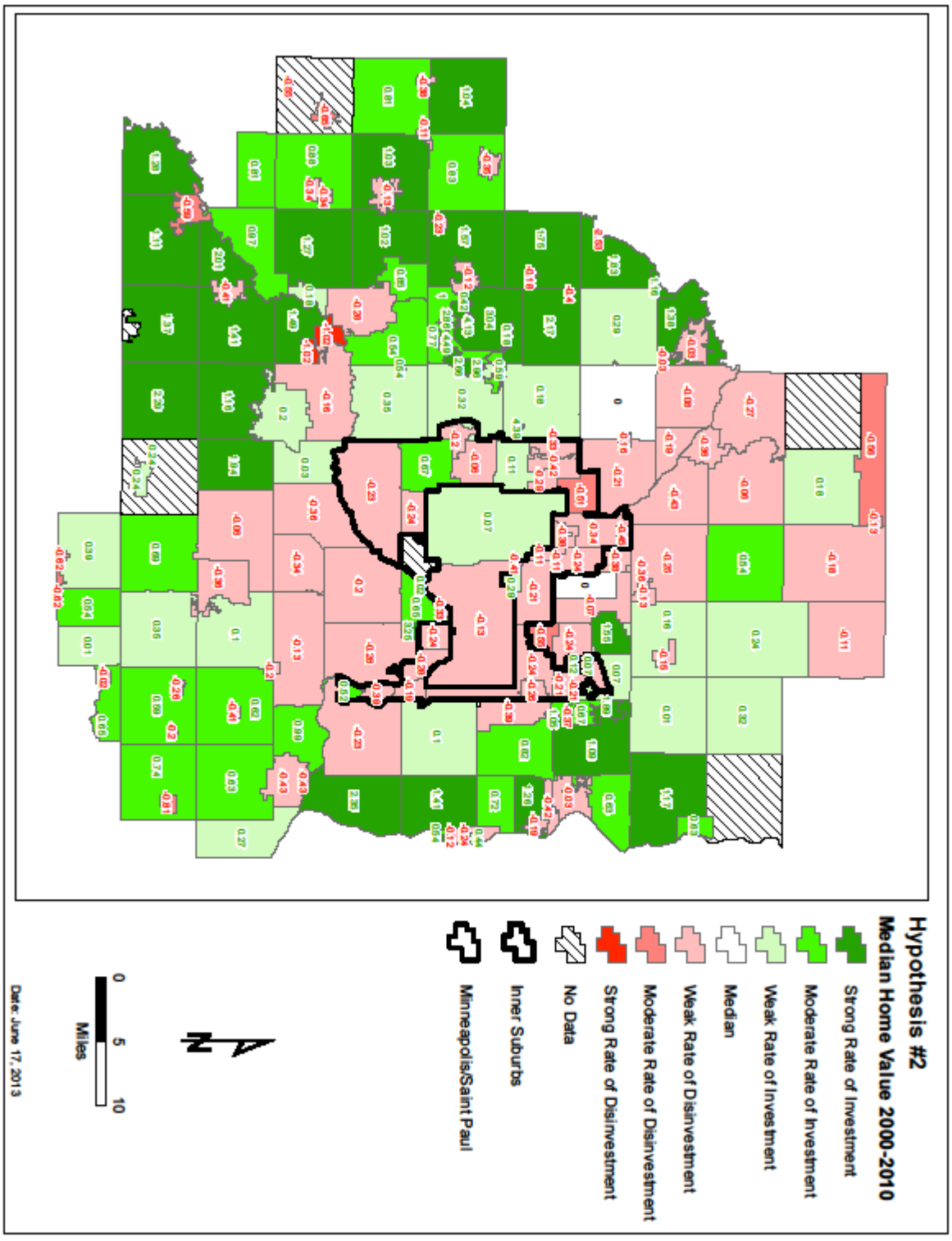
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Weak Rate of Investment
Median
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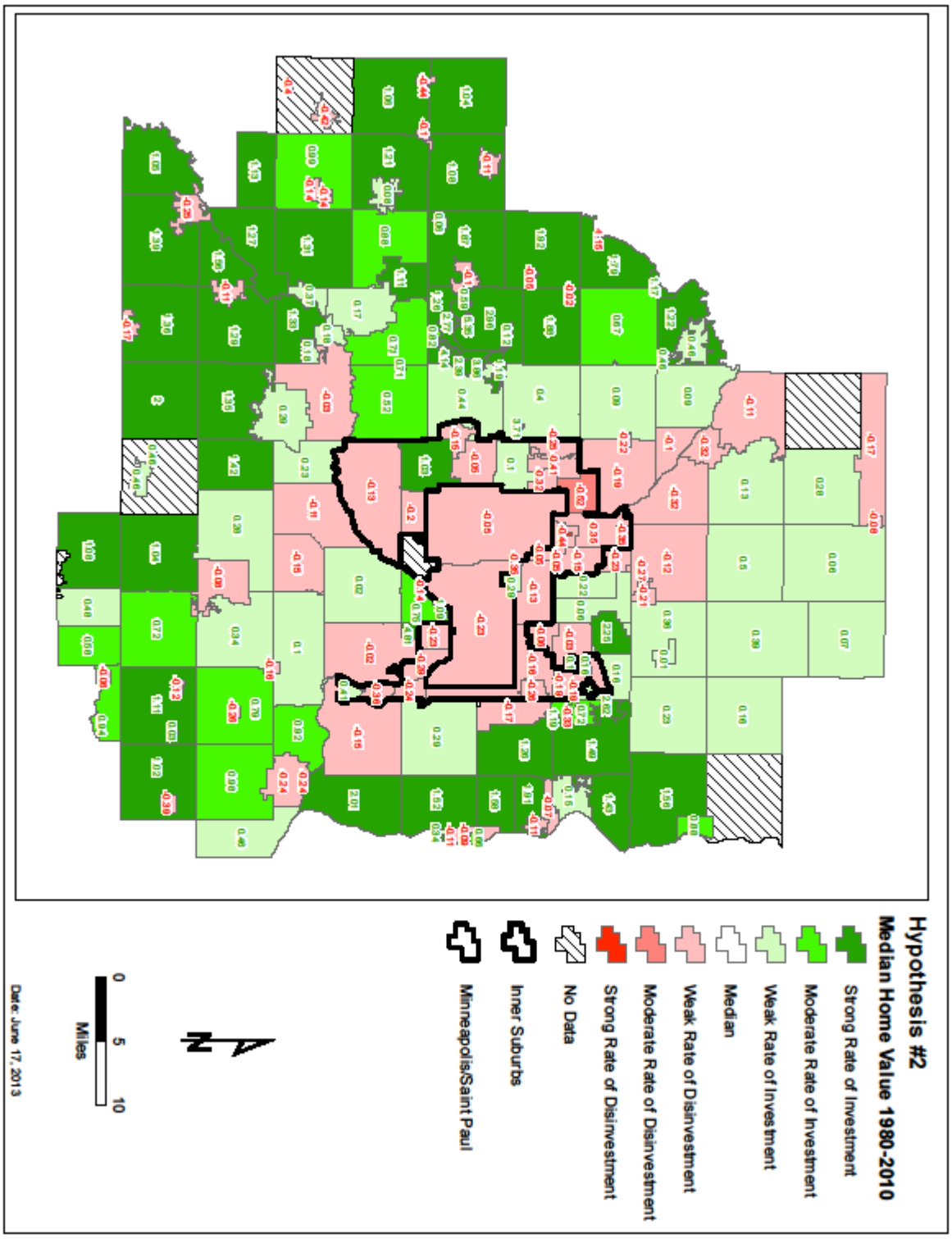
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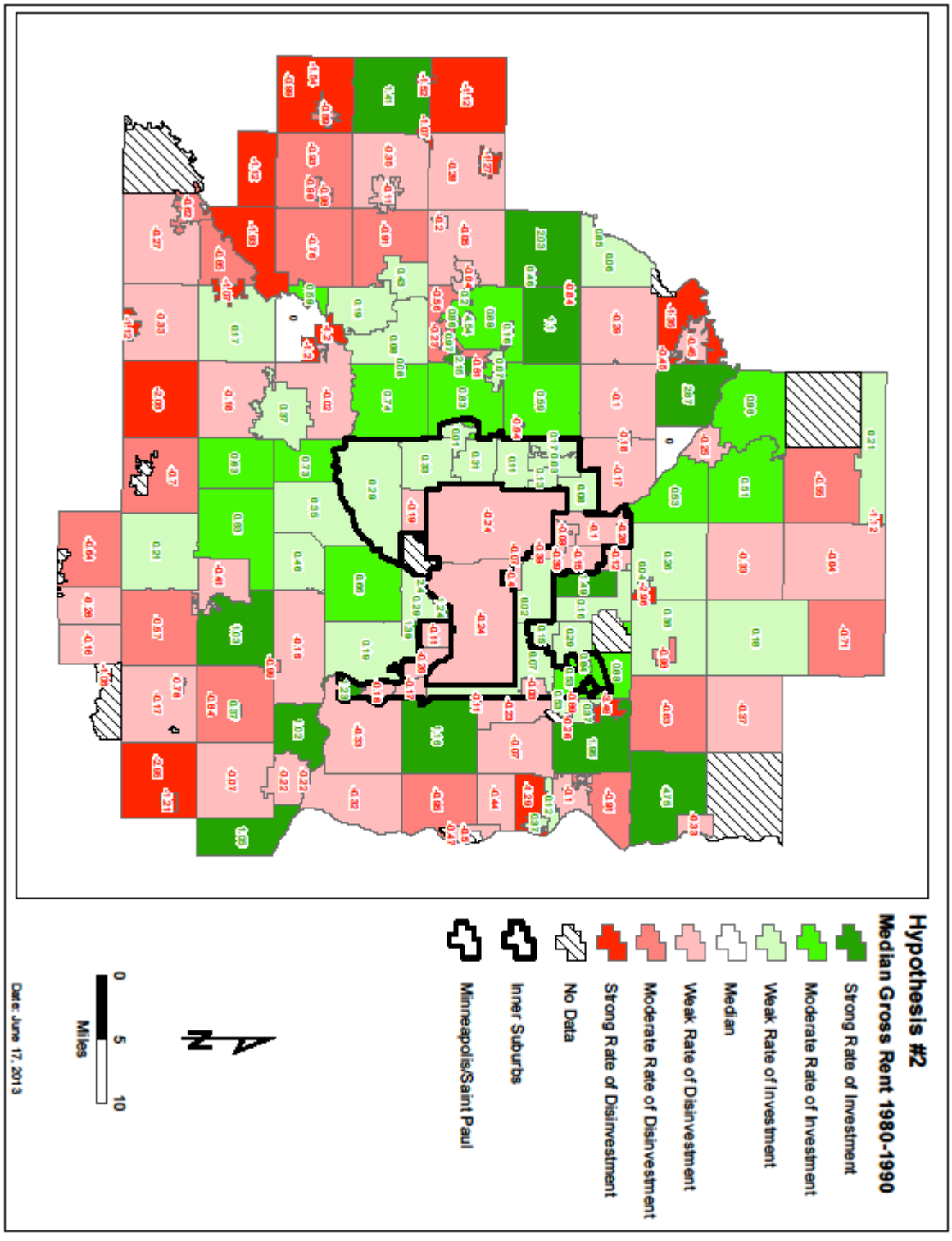
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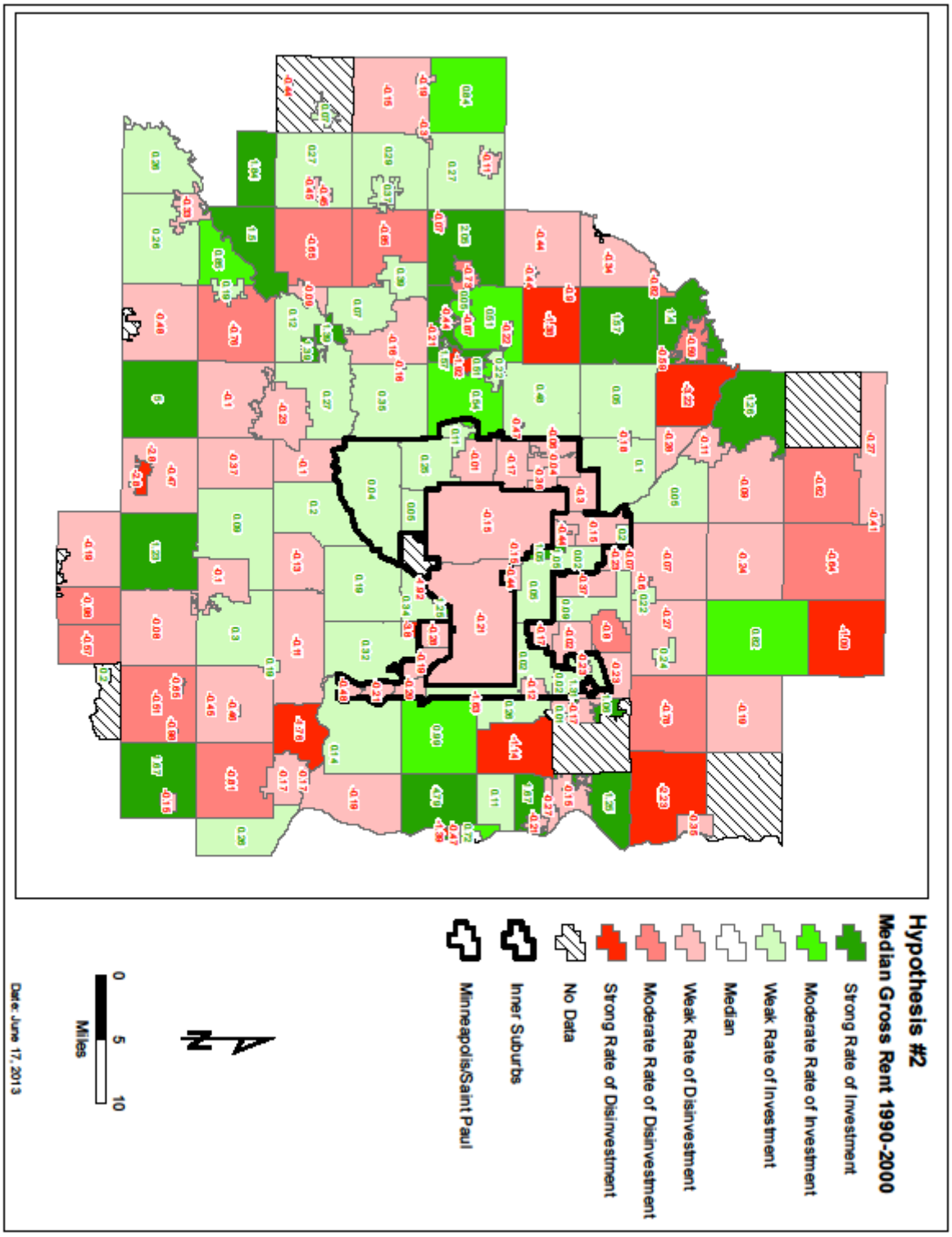
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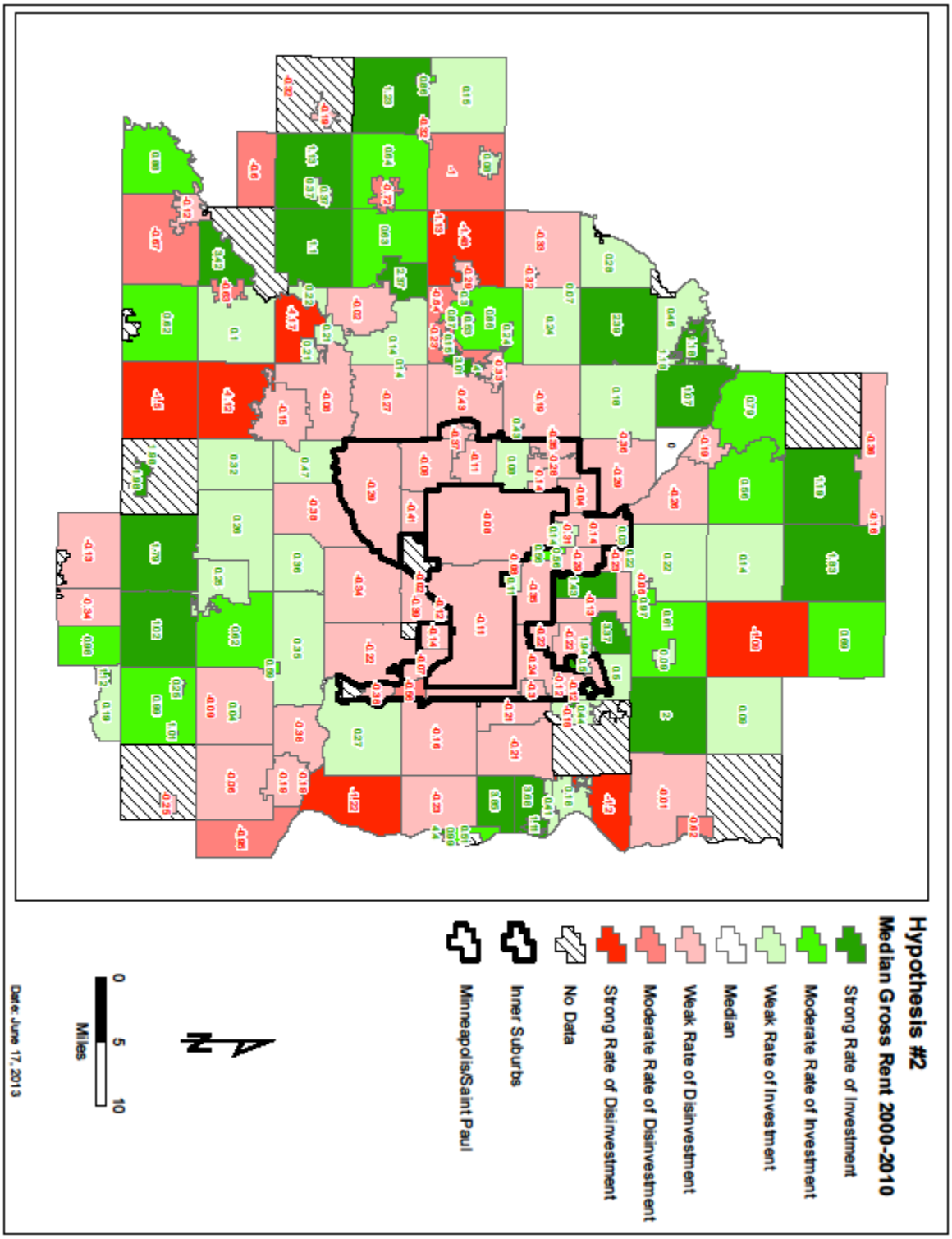
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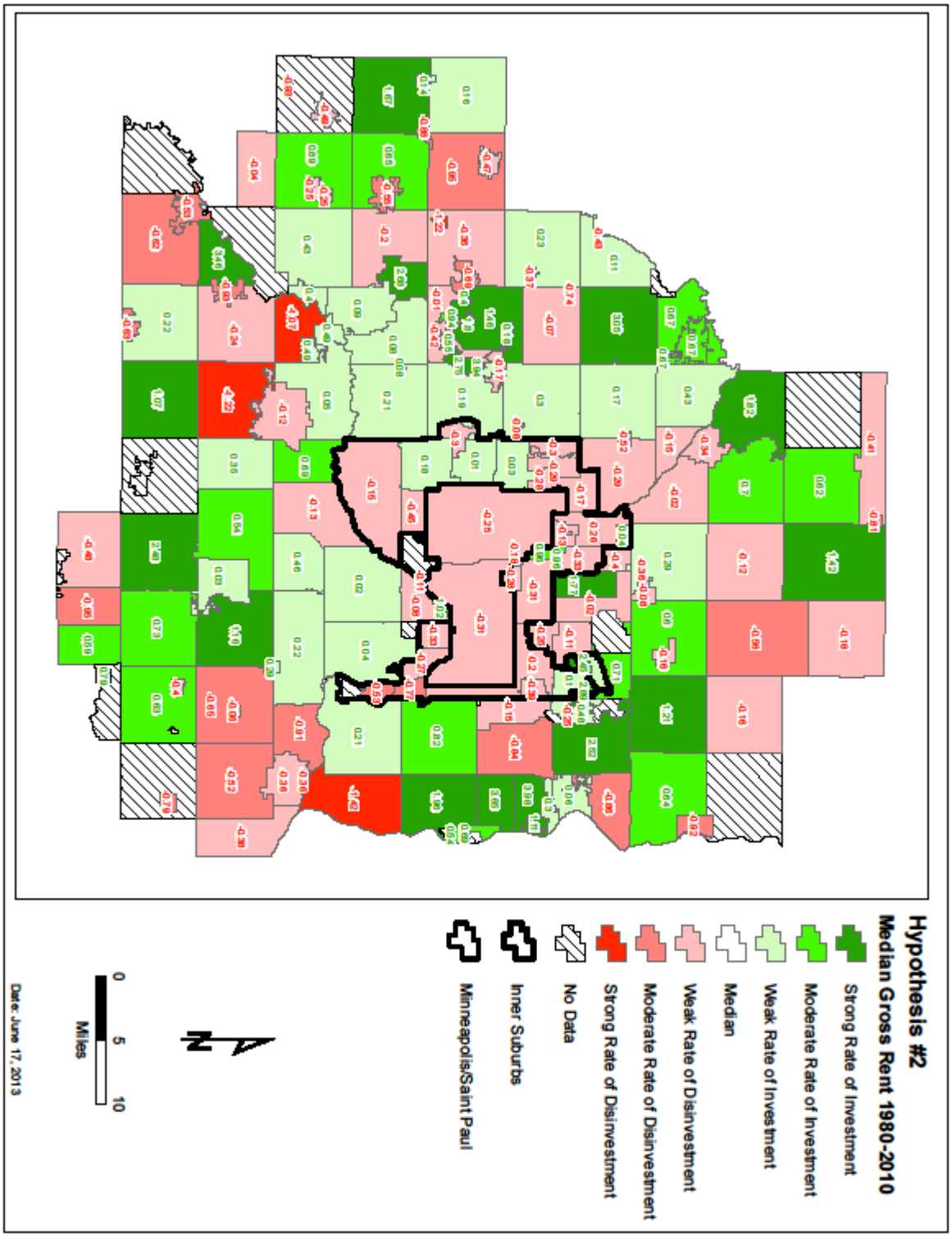
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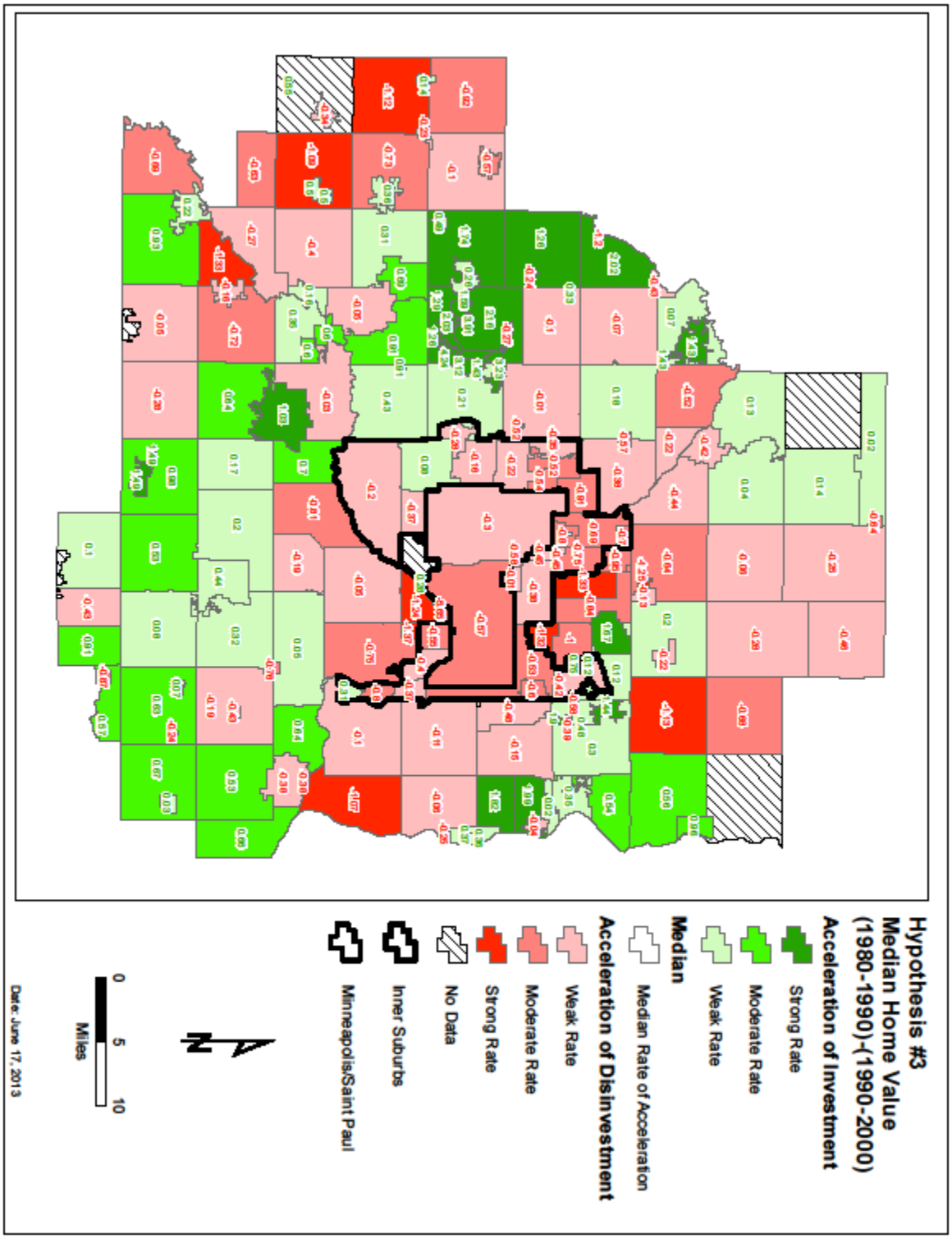
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(1980-1990)-(1990-2000)
Acceleration of Investment
Strong Rate
Moderate Rate
Weak Rate
Median
Median Rate of Acceleration
Acceleration of Disinvestment
Weak Rate
Moderate Rate
Strong Rate
No Data
Inner Suburbs
Minneapolis/Saint Paul
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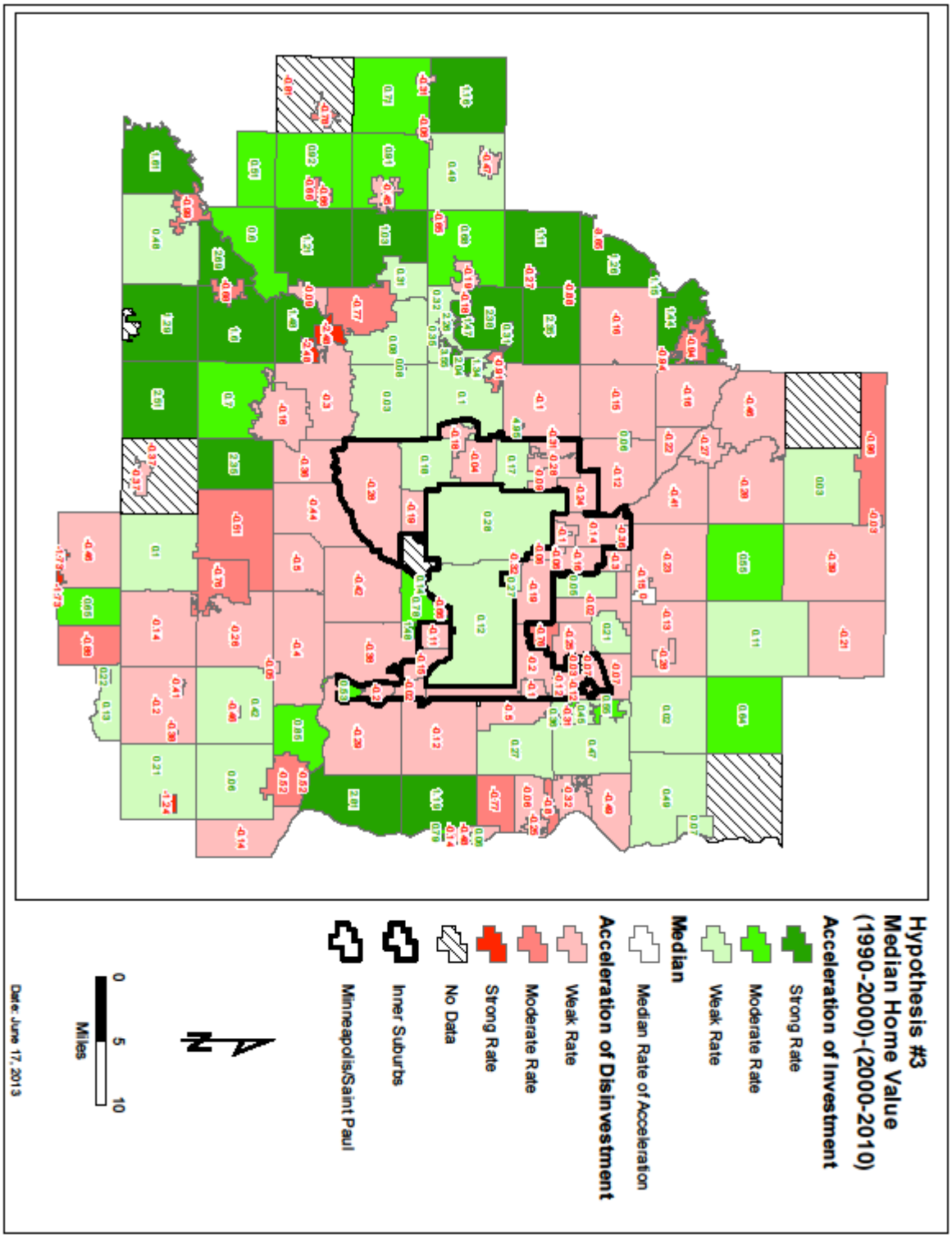
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(1990-2000)-(2000-2010)
Acceleration of Investment
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Weak Rate
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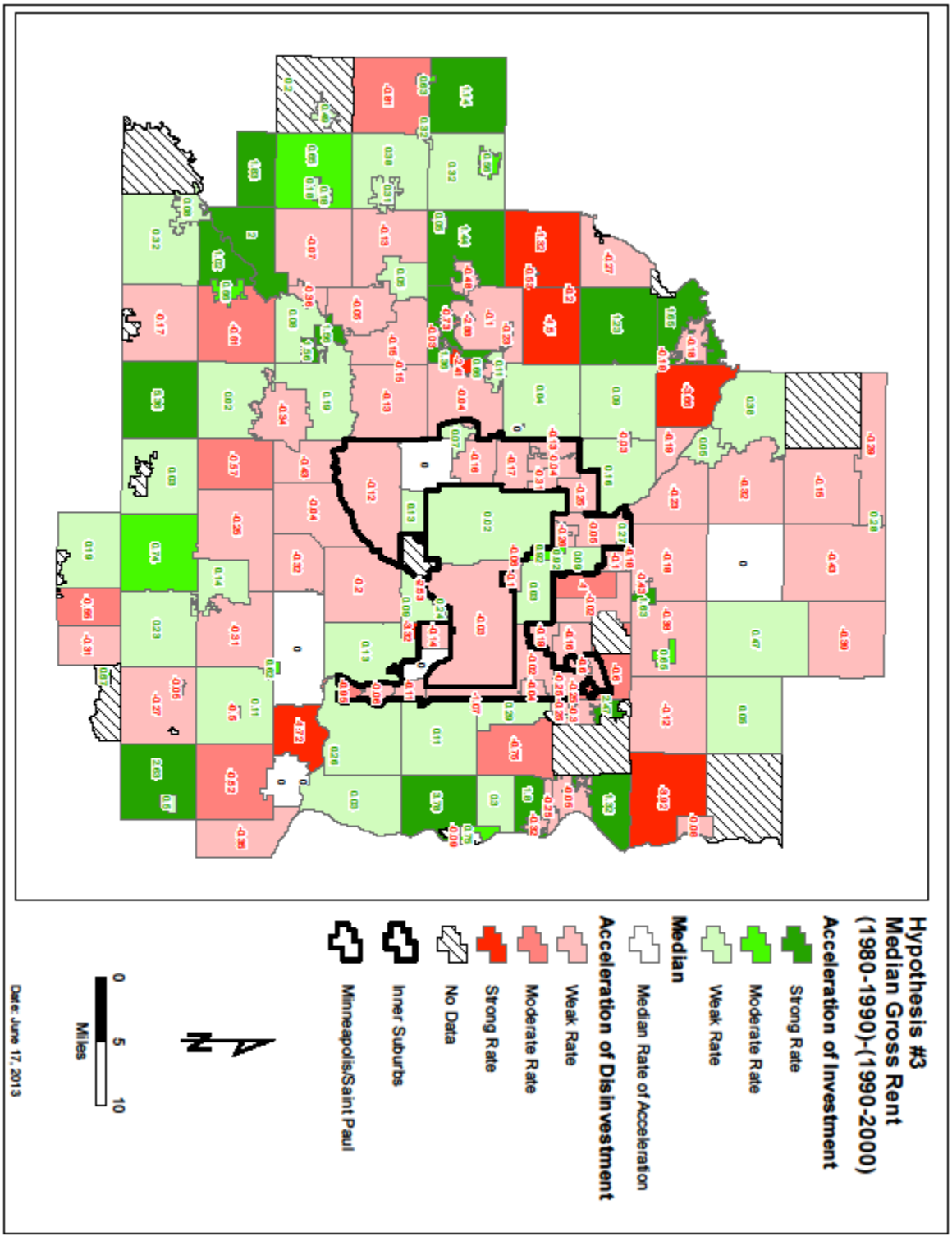
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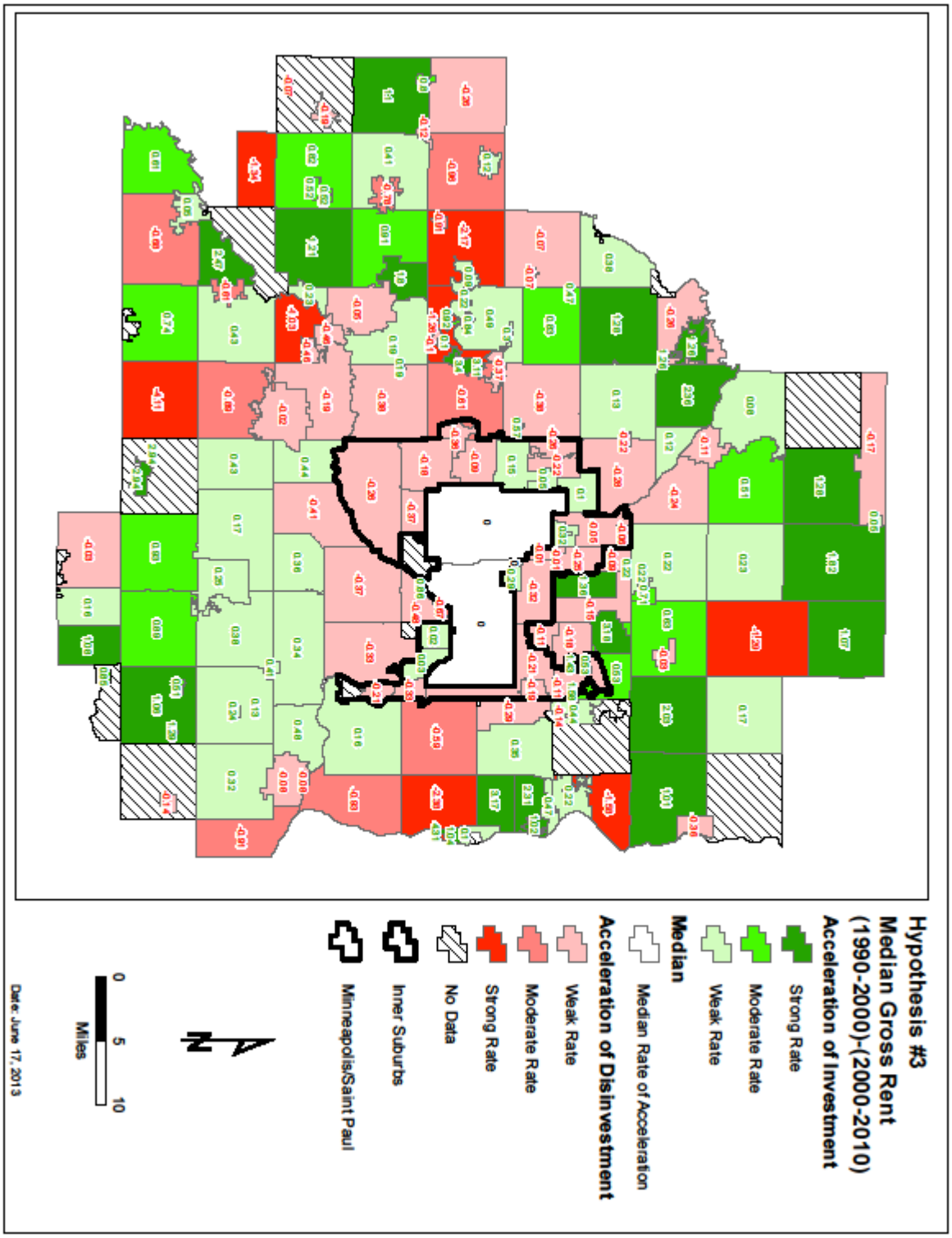
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(1990-2000)-(2000-2010)
Acceleration of Investment
Strong Rate
Moderate Rate
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Median Rate of Acceleration
Acceleration of Disinvestment
Weak Rate
Moderate Rate
Strong Rate
No Data
Inner Suburbs
Minneapolis/Saint Paul
N
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Miles
Date: June 17, 2013

Table 8: List of Minneapolis-St. Paul Metropolitan Area Inner and Outer Suburbs

#	Geography	% Built Before 1969
1	Afton city, Washington County, Minnesota	47%
2	Andover city, Anoka County, Minnesota	10%
3	Anoka city, Anoka County, Minnesota	48%
4	Apple Valley city, Dakota County, Minnesota	13%
5	Arden Hills city, Ramsey County, Minnesota	34%
6	Bayport city, Washington County, Minnesota	76%
7	Baytown township, Washington County, Minnesota	23%
8	Belle Plaine city, Scott County, Minnesota	46%
9	Belle Plaine township, Scott County, Minnesota	59%
10	Benton township, Carver County, Minnesota	70%
11	Bethel city, Anoka County, Minnesota	38%
12	Birchwood Village city, Washington County, Minnesota	59%
13	Blaine city, Anoka County, Minnesota	25%
14	Blaine city, Ramsey County, Minnesota	#DIV/0!
15	Blakeley township, Scott County, Minnesota	62%
16	Bloomington city, Hennepin County, Minnesota	53%
17	Brooklyn Center city, Hennepin County, Minnesota	71%
18	Brooklyn Park city, Hennepin County, Minnesota	30%
19	Burns township, Anoka County, Minnesota	22%
20	Burnsville city, Dakota County, Minnesota	21%
21	Camden township, Carver County, Minnesota	55%
22	Carver city, Carver County, Minnesota	41%
23	Castle Rock township, Dakota County, Minnesota	44%
24	Cedar Lake township, Scott County, Minnesota	30%
25	Centerville city, Anoka County, Minnesota	13%
26	Champlin city, Hennepin County, Minnesota	16%
27	Chanhassen city, Carver County, Minnesota	17%
28	Chanhassen city, Hennepin County, Minnesota	#DIV/0!
29	Chaska city, Carver County, Minnesota	19%
30	Chaska township, Carver County, Minnesota	58%
31	Circle Pines city, Anoka County, Minnesota	47%
32	Coates city, Dakota County, Minnesota	76%
33	Cologne city, Carver County, Minnesota	41%
34	Columbia Heights city, Anoka County, Minnesota	75%
35	Columbus township, Anoka County, Minnesota	30%
36	Coon Rapids city, Anoka County, Minnesota	29%
37	Corcoran city, Hennepin County, Minnesota	23%
38	Cottage Grove city, Washington County, Minnesota	29%
39	Credit River township, Scott County, Minnesota	22%
40	Crystal city, Hennepin County, Minnesota	81%

41	Dahlgren township, Carver County, Minnesota	55%
42	Dayton city, Hennepin County, Minnesota	26%
43	Deephaven city, Hennepin County, Minnesota	70%
44	Dellwood city, Washington County, Minnesota	40%
45	Denmark township, Washington County, Minnesota	35%
46	Douglas township, Dakota County, Minnesota	41%
47	Eagan city, Dakota County, Minnesota	10%
48	East Bethel city, Anoka County, Minnesota	17%
49	Eden Prairie city, Hennepin County, Minnesota	8%
50	Edina city, Hennepin County, Minnesota	62%
51	Elko city, Scott County, Minnesota	15%
52	Empire township, Dakota County, Minnesota	37%
53	Eureka township, Dakota County, Minnesota	38%
54	Excelsior city, Hennepin County, Minnesota	68%
55	Falcon Heights city, Ramsey County, Minnesota	77%
56	Farmington city, Dakota County, Minnesota	19%
57	Forest Lake city, Washington County, Minnesota	35%
58	Forest Lake township, Washington County, Minnesota	30%
59	Fort Snelling UT, Hennepin County, Minnesota	#DIV/0!
60	Fridley city, Anoka County, Minnesota	61%
61	Gem Lake city, Ramsey County, Minnesota	49%
62	Golden Valley city, Hennepin County, Minnesota	71%
63	Grant city, Washington County, Minnesota	28%
64	Greenfield city, Hennepin County, Minnesota	23%
65	Greenvale township, Dakota County, Minnesota	49%
66	Greenwood city, Hennepin County, Minnesota	58%
67	Grey Cloud Island township, Washington County, Minnesota	69%
68	Ham Lake city, Anoka County, Minnesota	18%
69	Hamburg city, Carver County, Minnesota	71%
70	Hampton city, Dakota County, Minnesota	60%
71	Hampton township, Dakota County, Minnesota	38%
72	Hancock township, Carver County, Minnesota	68%
73	Hanover city, Hennepin County, Minnesota	17%
74	Hassan township, Hennepin County, Minnesota	19%
75	Hastings city, Dakota County, Minnesota	47%
76	Hastings city, Washington County, Minnesota	0%
77	Helena township, Scott County, Minnesota	43%
78	Hilltop city, Anoka County, Minnesota	39%
79	Hollywood township, Carver County, Minnesota	62%
80	Hopkins city, Hennepin County, Minnesota	50%
81	Hugo city, Washington County, Minnesota	24%
82	Independence city, Hennepin County, Minnesota	38%
83	Inver Grove Heights city, Dakota County, Minnesota	23%
84	Jackson township, Scott County, Minnesota	12%
85	Jordan city, Scott County, Minnesota	39%
86	Lake Elmo city, Washington County, Minnesota	33%

87	Lake St. Croix Beach city, Washington County, Minnesota	61%
88	Lakeland city, Washington County, Minnesota	34%
89	Lakeland Shores city, Washington County, Minnesota	16%
90	Laketown township, Carver County, Minnesota	43%
91	Lakeville city, Dakota County, Minnesota	11%
92	Landfall city, Washington County, Minnesota	28%
93	Lauderdale city, Ramsey County, Minnesota	67%
94	Lexington city, Anoka County, Minnesota	55%
95	Lilydale city, Dakota County, Minnesota	16%
96	Lino Lakes city, Anoka County, Minnesota	13%
97	Linwood township, Anoka County, Minnesota	22%
98	Little Canada city, Ramsey County, Minnesota	30%
99	Long Lake city, Hennepin County, Minnesota	52%
100	Loretto city, Hennepin County, Minnesota	41%
101	Louisville township, Scott County, Minnesota	22%
102	Mahtomedi city, Washington County, Minnesota	39%
103	Maple Grove city, Hennepin County, Minnesota	9%
104	Maple Plain city, Hennepin County, Minnesota	43%
105	Maplewood city, Ramsey County, Minnesota	42%
106	Marine on St. Croix city, Washington County, Minnesota	68%
107	Marshan township, Dakota County, Minnesota	30%
108	May township, Washington County, Minnesota	35%
109	Mayer city, Carver County, Minnesota	49%
110	Medicine Lake city, Hennepin County, Minnesota	71%
111	Medina city, Hennepin County, Minnesota	37%
112	Mendota city, Dakota County, Minnesota	90%
113	Mendota Heights city, Dakota County, Minnesota	35%
114	Miesville city, Dakota County, Minnesota	75%
115	Minneapolis city, Hennepin County, Minnesota	82%
116	Minnetonka Beach city, Hennepin County, Minnesota	63%
117	Minnetonka city, Hennepin County, Minnesota	38%
118	Minnetrista city, Hennepin County, Minnesota	38%
119	Mound city, Hennepin County, Minnesota	51%
120	Mounds View city, Ramsey County, Minnesota	43%
121	New Brighton city, Ramsey County, Minnesota	50%
122	New Germany city, Carver County, Minnesota	58%
123	New Hope city, Hennepin County, Minnesota	66%
124	New Market city, Scott County, Minnesota	46%
125	New Market township, Scott County, Minnesota	24%
126	New Prague city, Scott County, Minnesota	48%
127	New Scandia township, Washington County, Minnesota	35%
128	New Trier city, Dakota County, Minnesota	85%
129	Newport city, Washington County, Minnesota	55%
130	Nininger township, Dakota County, Minnesota	37%
131	North Oaks city, Ramsey County, Minnesota	28%
132	North St. Paul city, Ramsey County, Minnesota	59%

133	Northfield city, Dakota County, Minnesota	1%
134	Norwood Young America city, Carver County, Minnesota	51%
135	Oak Grove city, Anoka County, Minnesota	17%
136	Oak Park Heights city, Washington County, Minnesota	22%
137	Oakdale city, Washington County, Minnesota	20%
138	Orono city, Hennepin County, Minnesota	55%
139	Osseo city, Hennepin County, Minnesota	70%
140	Pine Springs city, Washington County, Minnesota	29%
141	Plymouth city, Hennepin County, Minnesota	18%
142	Prior Lake city, Scott County, Minnesota	16%
143	Ramsey city, Anoka County, Minnesota	10%
144	Randolph city, Dakota County, Minnesota	69%
145	Randolph township, Dakota County, Minnesota	47%
146	Ravenna township, Dakota County, Minnesota	12%
147	Richfield city, Hennepin County, Minnesota	85%
148	Robbinsdale city, Hennepin County, Minnesota	78%
149	Rockford city, Hennepin County, Minnesota	36%
150	Rogers city, Hennepin County, Minnesota	11%
151	Rosemount city, Dakota County, Minnesota	19%
152	Roseville city, Ramsey County, Minnesota	63%
153	San Francisco township, Carver County, Minnesota	27%
154	Sand Creek township, Scott County, Minnesota	43%
155	Savage city, Scott County, Minnesota	11%
156	Sciota township, Dakota County, Minnesota	36%
157	Shakopee city, Scott County, Minnesota	24%
158	Shoreview city, Ramsey County, Minnesota	27%
159	Shorewood city, Hennepin County, Minnesota	41%
160	South St. Paul city, Dakota County, Minnesota	79%
161	Spring Lake Park city, Anoka County, Minnesota	50%
162	Spring Lake Park city, Ramsey County, Minnesota	38%
163	Spring Lake township, Scott County, Minnesota	34%
164	Spring Park city, Hennepin County, Minnesota	46%
165	St. Anthony city, Hennepin County, Minnesota	73%
166	St. Anthony city, Ramsey County, Minnesota	45%
167	St. Bonifacius city, Hennepin County, Minnesota	27%
168	St. Francis city, Anoka County, Minnesota	11%
169	St. Lawrence township, Scott County, Minnesota	38%
170	St. Louis Park city, Hennepin County, Minnesota	71%
171	St. Marys Point city, Washington County, Minnesota	68%
172	St. Paul city, Ramsey County, Minnesota	81%
173	St. Paul Park city, Washington County, Minnesota	67%
174	Stillwater city, Washington County, Minnesota	49%
175	Stillwater township, Washington County, Minnesota	28%
176	Sunfish Lake city, Dakota County, Minnesota	46%
177	Tonka Bay city, Hennepin County, Minnesota	56%
178	Vadnais Heights city, Ramsey County, Minnesota	13%

179	Vermillion city, Dakota County, Minnesota	47%
180	Vermillion township, Dakota County, Minnesota	43%
181	Victoria city, Carver County, Minnesota	21%
182	Waconia city, Carver County, Minnesota	32%
183	Waconia township, Carver County, Minnesota	46%
184	Waterford township, Dakota County, Minnesota	64%
185	Watertown city, Carver County, Minnesota	37%
186	Watertown township, Carver County, Minnesota	49%
187	Wayzata city, Hennepin County, Minnesota	60%
188	West Lakeland township, Washington County, Minnesota	14%
189	West St. Paul city, Dakota County, Minnesota	63%
190	White Bear Lake city, Ramsey County, Minnesota	58%
191	White Bear Lake city, Washington County, Minnesota	2%
192	White Bear township, Ramsey County, Minnesota	32%
193	Willernie city, Washington County, Minnesota	74%
194	Woodbury city, Washington County, Minnesota	8%
195	Woodland city, Hennepin County, Minnesota	58%
196	Young America township, Carver County, Minnesota	65%

TABLE 9 - HYPOTHESIS #1 – MEDIAN HOME VALUE – Z-SCORES ALPHABETICAL

#	ALL SUBURBS	1980	1990	2000	2010
1	AFTON	(0.04)	1.05	1.16	1.36
2	ANDOVER	(0.16)	0.14	0.23	0.09
3	ANOKA	(0.38)	(0.28)	(0.32)	(0.36)
4	APPLE VALLEY	0.20	0.27	0.17	(0.09)
5	ARDEN HILLS	0.10	0.82	0.41	0.21
6	BAYPORT	(0.40)	(0.25)	(0.15)	(0.18)
7	BAYTOWN TWP.	(0.46)	0.90	1.84	1.64
8	BELLE PLAINE	(0.99)	(0.54)	(0.17)	(0.40)
9	BELLE PLAINE TWP.	(2.27)	(0.60)	0.46	0.83
10	BENTON TWP.	(2.11)	(0.28)	0.06	0.50
11	BETHEL	(1.54)	(0.79)	(0.54)	(0.35)
12	BIRCHWOOD VILLAGE	1.10	1.33	0.89	0.81
13	BLAINE	(0.77)	(0.25)	(0.23)	(0.25)
14	BLAKELEY TWP.	(2.18)	(0.73)	(0.28)	0.54
15	BLOOMINGTON	0.16	0.18	0.07	(0.09)
16	BROOKLYN CENTER	(0.37)	(0.29)	(0.51)	(0.54)
17	BROOKLN PARK	(0.11)	(0.06)	(0.15)	(0.19)
18	BURNS TWP.*	(1.09)	(0.06)	0.21	no data
19	BURNSVILLE	0.04	0.44	0.19	(0.09)
20	CAMDEN TWP.	(2.11)	(0.09)	0.26	0.57
21	CARVER	(0.88)	(0.20)	0.14	0.17
22	CASTLE ROCK TWP.	(1.11)	0.07	0.50	0.45
23	CEDAR LAKE TWP.	(1.25)	0.29	0.66	1.58
24	CENTERVILLE	(0.48)	(0.08)	0.00	(0.08)
25	CHAMPLIN	(0.21)	(0.06)	(0.06)	(0.13)
26	CHANHASSEN	0.78	0.83	0.95	0.78
27	CHASKA*	(0.91)	(0.04)	0.26	(0.01)
28	CHASKA TWP.*	(0.86)	0.11	0.28	no data
29	CIRCLE PINES	(0.37)	(0.40)	(0.36)	(0.26)
30	COATES	(1.07)	(0.51)	(0.45)	(0.34)
31	COLOGNE	(0.81)	(0.58)	(0.18)	(0.28)
32	COLUMBIA HEIGHTS	(0.52)	(0.41)	(0.54)	(0.49)
33	COLUMBUS*	(0.72)	0.01	0.17	0.22
34	COON RAPIDS	(0.35)	(0.19)	(0.24)	(0.36)
35	CORCORAN	(0.65)	0.38	0.63	0.48
36	COTTAGE GROVE	(0.14)	(0.08)	(0.07)	(0.16)
37	CREDIT RIVER TWP.	(0.13)	0.27	0.41	1.25
38	CRYSTAL	(0.38)	(0.33)	(0.41)	(0.44)
39	DAHLGREN TWP.	(1.42)	0.08	0.45	0.92
40	DAYTON	(0.61)	(0.01)	0.03	(0.03)
41	DEEPHAVEN	1.90	1.50	2.06	2.50
42	DELLWOOD	3.44	4.09	3.80	2.99
43	DENMARK TWP.	(0.82)	0.76	0.76	1.66
44	DOUGLAS TWP.	(1.60)	(0.33)	0.43	0.62
45	EAGAN	0.22	0.36	0.31	0.06
46	EAST BETHEL	(0.97)	(0.28)	(0.05)	(0.12)
47	EDEN PRAIRIE	0.70	0.79	0.78	0.59
48	EDINA	1.08	1.66	1.47	1.13
49	ELKO NEW MARKET*	(0.86)	(0.52)	0.24	0.25
50	EMPIRE TWP.	(0.68)	(0.10)	0.24	0.18
51	EUREKA TWP.	(0.91)	0.24	0.77	0.77

52	EXCELSIOR	(0.06)	0.14	0.61	0.73
53	FALCON HEIGHTS	0.20	0.31	0.27	0.30
54	FARMINGTON	(0.51)	(0.25)	0.06	(0.16)
55	FOREST LAKE*	(0.62)	(0.23)	(0.27)	0.03
56	FOREST LAKE TWP.*	0.01	0.28	0.36	no data
57	FRIDLEY	(0.15)	(0.11)	(0.30)	(0.34)
58	GEM LAKE	0.57	0.17	0.24	0.19
59	GOLDEN VALLEY	0.55	0.47	0.25	0.19
60	GRANT*	0.03	1.24	1.46	1.35
61	GREENFIELD	(0.69)	0.04	0.98	1.49
62	GREENVALE TWP.	(1.72)	0.19	0.85	0.65
63	GREENWOOD	2.14	2.35	3.29	4.12
64	GREY CLOUD ISLAND TWP.	(0.02)	0.05	0.17	0.36
65	HAM LAKE	(0.57)	(0.06)	0.11	0.35
66	HAMBURG	(0.76)	(0.76)	(0.39)	(0.50)
67	HAMPTON	(1.01)	(0.62)	(0.30)	(0.30)
68	HAMPTON TWP.	(1.36)	0.11	0.82	0.75
69	HANCOCK	(1.89)	0.00	0.46	0.67
70	HANOVER	(0.68)	0.44	0.58	0.93
71	HASSAN TWP.	(0.77)	0.11	0.41	0.96
72	HASTINGS	(0.48)	(0.17)	(0.14)	(0.30)
73	HELENA TWP.	(1.46)	(0.07)	0.42	0.95
74	HILLTOP	(2.32)	(0.85)	(1.21)	(1.74)
75	HOLLYWOOD TWP.	(2.07)	(0.38)	(0.00)	0.56
76	HOPKINS	(0.23)	(0.11)	(0.13)	(0.18)
77	HUGO	(0.81)	0.18	0.09	0.05
78	INDEPENDENCE	(0.65)	0.57	1.29	1.61
79	INVER GROVE	(0.59)	0.08	0.04	(0.13)
80	JACKSON TWP.	(1.20)	0.29	0.94	(0.06)
81	JORDAN	(1.24)	(0.54)	(0.21)	(0.33)
82	LAKE ELMO	(0.48)	0.95	1.16	1.04
83	LAKE ST. CROIX BEACH	(0.65)	(0.50)	(0.29)	(0.22)
84	LAKELAND	0.09	0.03	0.12	(0.06)
85	LAKELAND SHORES	1.01	1.16	1.05	0.78
86	LAKETOWN	0.20	0.45	0.54	0.83
87	LAKEVILLE	(0.46)	0.15	0.39	0.17
88	LAND FALL	(1.57)	1.18	(0.41)	(1.73)
89	LAUDERDALE	(0.61)	(0.38)	(0.40)	(0.43)
90	LEXINGTON	(1.23)	(0.48)	(0.53)	(0.47)
91	LILYDALE	(2.24)	2.33	1.43	0.57
92	LINO LAKES	(0.49)	0.04	0.29	0.24
93	LINWOOD TWP.	(0.96)	(0.25)	(0.10)	(0.11)
94	LITTLE CANADA	(0.94)	0.22	0.12	(0.23)
95	LONG LAKE	0.32	0.30	0.12	0.16
96	LORETTO	(0.65)	(0.18)	0.15	(0.14)
97	LOUISVILLE	(0.64)	0.17	0.53	1.08
98	MAHOTMEDI	(0.07)	0.31	0.53	0.64
99	MAPLE GROVE	0.09	0.14	0.18	0.09
100	MAPLE PLAIN	(0.27)	(0.01)	0.01	(0.09)
101	MAPLEWOOD	(0.33)	(0.07)	(0.14)	(0.20)
102	MARINE ON ST. CROIX	(0.08)	0.43	0.83	0.77
103	MASHAN TWP.	(0.73)	0.31	0.78	0.75
104	MAY TWP.	(0.59)	0.80	1.28	1.30
105	MAYER	(0.84)	(0.52)	(0.36)	(0.24)

106	MEDICINE LAKE	0.86	2.42	2.19	3.50
107	MEDINA	(0.27)	0.78	0.93	1.65
108	MENDOTA	(0.86)	(0.87)	(0.57)	(0.29)
109	MENDOTA HEIGHTS	0.87	1.50	0.93	0.83
110	MIESVILLE	(0.47)	(0.16)	(0.01)	(0.44)
111	MINNEAPOLIS	(0.67)	(0.48)	(0.40)	(0.17)
112	MINNETONKA BEACH	3.19	5.34	6.12	5.41
113	MINNETONKA	0.64	0.74	0.67	0.52
114	MINNETRISTA	0.75	1.41	1.89	1.83
115	MOUND	0.08	(0.08)	(0.03)	(0.08)
116	MOUNDS VIEW	(0.58)	(0.09)	(0.22)	(0.32)
117	NEW BRIGHTON	0.09	0.29	0.03	(0.11)
118	NEW GERMANY	(0.99)	(1.01)	(0.73)	(0.58)
119	NEW HOPE	0.06	0.06	(0.08)	(0.22)
120	NEW MARKET*	(1.13)	(0.52)	(0.28)	1.63
121	NEW MARKET TWP.	(1.32)	0.37	1.21	no data
122	NEW PRAGUE	(0.82)	(0.56)	no data	(0.30)
123	NEW SCANDIA*	(0.84)	0.22	0.49	no data
124	NEW TRIER	(1.46)	(0.63)	(0.27)	(0.24)
125	NEWPORT	(0.52)	(0.42)	(0.41)	(0.31)
126	NINIGER TWP.	(0.26)	0.15	0.48	0.78
127	NORTH OAKS	4.16	4.21	3.76	2.79
128	NORTH ST. PAUL	(0.40)	(0.24)	(0.32)	(0.31)
129	NORTHFIELD	no data	(0.07)	0.60	(0.02)
130	NORWOOD YOUNG AMERICA*	(1.02)	(0.61)	(0.43)	(0.57)
131	OAK GROVE*	(0.47)	(0.08)	0.12	0.16
132	OAK PARK HEIGHTS	(0.63)	(0.13)	0.09	(0.18)
133	OAKDALE	(0.49)	(0.07)	(0.07)	(0.25)
134	ORONO	1.52	2.10	2.53	2.95
135	OSSEO	(0.43)	(0.29)	(0.37)	(0.28)
136	PINE SPRINGS	1.70	1.37	1.57	1.38
137	PLYMOUTH	0.73	0.93	0.77	0.50
138	PRIOR LAKE	0.45	0.24	0.46	0.35
139	RAMSEY	(0.18)	(0.08)	0.02	(0.13)
140	RANDOLPH	(1.32)	(0.64)	(0.54)	(0.29)
141	RANDOLPH TWP.	(0.99)	0.05	0.61	0.67
142	RAVENA TWP.	(0.25)	0.12	0.44	0.37
143	RICHFIELD	(0.26)	(0.14)	(0.19)	(0.23)
144	ROBBINSDALE	(0.43)	(0.35)	(0.42)	(0.37)
145	ROCKFORD	(1.56)	(0.07)	0.06	(1.33)
146	ROGERS	(0.62)	(0.08)	0.62	0.30
147	ROSEMOUNT	(0.38)	0.01	0.17	0.02
148	ROSEVILLE	0.08	0.16	0.02	(0.10)
149	SAN FRANCISCO TWP.	(1.42)	0.26	0.70	0.88
150	SAND CREEK TWP.	(1.42)	0.03	0.28	0.91
151	SAVAGE	0.02	0.12	0.36	0.21
152	SCIOTA TWP.	(1.91)	(0.59)	0.33	0.17
153	SHAKOPEE	(0.35)	(0.11)	(0.01)	(0.09)
154	SHOREVIEW	0.11	0.49	0.21	0.07
155	SHOREWOOD	1.14	1.37	1.56	1.35
156	SOUTH ST. PAUL	(0.63)	(0.48)	(0.44)	(0.38)
157	SPRING LAKE PARK	(0.45)	(0.20)	(0.31)	(0.40)
158	SPRING LAKE TWP.	(0.89)	0.26	0.82	1.05
159	SPRING PARK	0.39	0.29	0.72	0.60

160	ST. ANTHONY	0.05	0.20	0.05	(0.03)
161	ST. BONIFACIOUS	(0.48)	(0.16)	0.16	(0.04)
162	ST. FANCIS	(1.31)	(0.59)	(0.19)	(0.40)
163	ST. LAWRENCE TWP.	(1.83)	(0.19)	(0.02)	1.07
164	ST. LOUIS PARK	(0.19)	(0.09)	(0.09)	(0.08)
165	ST. MARYS POINT	(0.01)	0.10	0.03	0.30
166	ST. PAUL	(0.69)	(0.51)	(0.51)	(0.34)
167	ST. PAUL PARK	(0.75)	(0.44)	(0.49)	(0.46)
168	STILLWATER	(0.27)	(0.02)	0.20	0.08
169	STILLWATER TWP.	(0.18)	1.37	1.76	1.26
170	SUNFISH LAKE	1.52	5.88	5.50	4.61
171	TONKA BAY	1.39	1.93	2.33	2.75
172	VADNAIS HEIGHTS	(0.52)	0.17	0.02	(0.12)
173	VERMILLION	(0.68)	(0.32)	(0.26)	(0.36)
174	VERMILLION TWP.	(1.21)	(0.06)	0.30	0.49
175	VICTORIA	0.42	1.01	1.20	1.08
176	WACONIA	(0.42)	(0.13)	0.13	(0.00)
177	WACONIA TWP.	(1.14)	0.43	0.63	0.88
178	WATERFORD	(1.19)	(0.37)	(0.14)	0.22
179	WATERTOWN	(1.16)	(0.40)	(0.23)	(0.31)
180	WATERTOWN TWP.	(1.39)	0.06	0.52	0.72
181	WAYZATA	1.36	1.19	1.94	1.33
182	WEST LAKELAND TWP.	(0.05)	1.21	1.98	1.42
183	WEST ST. PAUL	(0.27)	(0.14)	(0.25)	(0.26)
184	WHITE BEAR LAKE	(0.15)	(0.07)	(0.17)	(0.20)
185	WHITE BEAR TWP.	0.07	0.19	0.23	0.16
186	WILLERNIE	(0.89)	(0.61)	(0.49)	(0.46)
187	WOODBURY	0.11	0.47	0.45	0.28
188	WOODLAND	3.80	5.26	4.96	4.17
189	YOUNG AMERICA*	(0.82)	(0.50)	0.22	0.53
190	YOUNG AMERICA TWP.	(1.78)	(0.39)	no data	no data
191	NOWTHEN*	no data	no data	no data	0.60
192	SCANDIA*	no data	no data	no data	0.71
	STRONG LEVEL OF INVESTMENT >1.00	15	25	27	33
	MODERATE LEVEL OF INVESTMENT .51 - 1.00	9	11	30	36
	WEAK LEVEL OF INVESTMENT .01 - .50	24	62	67	35
	MEDIAN .00	0	0	0	0
	WEAK LEVEL OF DISINVESTMENT (.01) - (.50)	49	68	55	76
	MODERATE LEVEL OF DISINVESTMENT (.51) - (1.00)	52	23	8	3
	STRONG LEVEL OF DISINVESTMENT <(1.00)	40	1	1	3
	NO DATA	3	2	4	6
		192	192	192	192

TABLE 10 - HYPOTHESIS #1 - MEDIAN GROSS RENT – Z-SCORES ALPHABETICAL

#	ALL SUBURBS	1980	1990	2000	2010
1	AFTON	1.54	(0.03)	4.16	2.12
2	ANDOVER	1.14	1.04	0.67	0.88
3	ANOKA	(0.15)	(0.29)	(0.31)	(0.34)
4	APPLE VALLEY	0.91	0.87	0.52	0.61
5	ARDEN HILLS	(1.16)	0.70	0.19	1.38
6	BAYPORT	(0.46)	0.08	(0.12)	0.92
7	BAYTOWN TWP.	(0.06)	(1.15)	0.62	3.63
8	BELLE PLAINE	(0.82)	(0.96)	(0.99)	(0.66)
9	BELLE PLAINE TWP.	(1.00)	(0.76)	(0.32)	(0.78)
10	BENTON TWP.	(0.54)	(1.09)	(0.56)	0.70
11	BETHEL	(0.06)	(1.01)	(1.09)	(0.75)
12	BIRCHWOOD VILLAGE	0.37	(0.58)	0.72	2.72
13	BLAINE	0.42	0.45	0.27	0.35
14	BLAKELEY TWP.	no data	(0.56)	(0.18)	0.68
15	BLOOMINGTON	0.91	0.72	0.56	0.05
16	BROOKLYN CENTER	0.26	0.21	(0.12)	(0.10)
17	BROOKLN PARK	0.17	(0.06)	0.04	(0.23)
18	BURNS TWP.*	(1.76)	0.33	(0.47)	no data
19	BURNSVILLE	0.85	0.74	0.71	0.06
20	CAMDEN TWP.	(1.16)	0.64	0.33	1.28
21	CARVER	(1.06)	(0.03)	(0.10)	0.14
22	CASTLE ROCK TWP.	0.19	(0.40)	(0.36)	0.71
23	CEDAR LAKE TWP.	2.62	(0.46)	5.13	1.52
24	CENTERVILLE	(0.15)	(0.93)	(0.47)	(0.18)
25	CHAMPLIN	0.42	0.22	(0.09)	(0.05)
26	CHANHASSEN	0.25	0.20	0.01	0.13
27	CHASKA*	(0.06)	0.14	0.16	0.07
28	CHASKA TWP.*	(0.32)	0.73	(0.18)	no data
29	CIRCLE PINES	3.72	(0.66)	(0.29)	0.70
30	COATES	(0.66)	(1.20)	(0.71)	0.13
31	COLOGNE	(0.79)	(1.26)	(1.31)	(0.40)
32	COLUMBIA HEIGHTS	(0.20)	(0.18)	(0.52)	(0.16)
33	COLUMBUS*	1.00	0.68	1.20	(0.30)
34	COON RAPIDS	0.23	0.58	0.46	0.03
35	CORCORAN	(0.32)	(0.42)	1.07	2.72
36	COTTAGE GROVE	2.52	1.01	0.86	0.72
37	CREDIT RIVER TWP.	2.16	1.66	0.89	0.78
38	CRYSTAL	0.28	0.17	0.09	(0.20)
39	DAHLGREN TWP.	(0.39)	(0.86)	(1.19)	0.31
40	DAYTON	0.17	2.59	(0.93)	0.43
41	DEEPHAVEN	1.45	2.63	0.23	2.82
42	DELLWOOD	2.93	(1.52)	(0.18)	no data
43	DENMARK TWP.	0.23	(0.16)	(0.28)	(1.25)
44	DOUGLAS TWP.	1.39	(1.86)	0.11	no data
45	EAGAN	0.76	0.96	0.87	0.18
46	EAST BETHEL	1.98	0.99	0.16	1.71
47	EDEN PRAIRIE	1.44	1.39	1.31	0.49
48	EDINA	2.08	1.36	1.20	0.60
49	ELKO NEW MARKET*	no data	0.73	(1.92)	0.70
50	EMPIRE TWP.	(0.43)	0.68	0.75	0.97
51	EUREKA TWP.	0.71	0.55	1.47	2.41

52	EXCELSIOR	0.06	(0.17)	(0.30)	(0.37)
53	FALCON HEIGHTS	(0.80)	(0.76)	(0.94)	(0.42)
54	FARMINGTON	(0.42)	(0.57)	(0.50)	(0.06)
55	FOREST LAKE*	(0.12)	(0.39)	(0.45)	(0.17)
56	FOREST LAKE TWP.*	2.08	1.15	1.54	no data
57	FRIDLEY	0.20	0.02	(0.12)	(0.20)
58	GEM LAKE	0.00	0.73	0.91	2.24
59	GOLDEN VALLEY	0.42	0.31	0.08	0.12
60	GRANT*	(0.34)	1.53	no data	2.23
61	GREENFIELD	(0.23)	(0.06)	(0.34)	0.05
62	GREENVALE TWP.	(1.54)	(1.35)	(1.15)	(0.76)
63	GREENWOOD	1.39	1.56	1.19	0.80
64	GREY CLOUD ISLAND TWP.	0.11	1.13	0.40	no data
65	HAM LAKE	0.63	0.04	(0.18)	0.03
66	HAMBURG	(1.70)	(1.74)	(1.65)	(1.20)
67	HAMPTON	(0.34)	(0.86)	(1.19)	(0.44)
68	HAMPTON TWP.	0.43	0.07	(0.39)	0.66
69	HANCOCK	0.23	(0.86)	0.98	0.01
70	HANOVER	no data	(1.66)	(1.92)	no data
71	HASSAN TWP.	(0.03)	(1.19)	0.36	0.61
72	HASTINGS	(0.26)	(0.33)	(0.38)	(0.38)
73	HELENA TWP.	0.43	(0.06)	(0.47)	0.29
74	HILLTOP	(0.26)	(0.60)	(0.97)	(0.81)
75	HOLLYWOOD TWP.	1.00	(0.46)	0.40	0.36
76	HOPKINS	0.56	0.29	0.31	(0.16)
77	HUGO	0.15	(0.65)	(1.15)	1.14
78	INDEPENDENCE	0.14	1.84	0.95	0.24
79	INVER GROVE	0.63	0.49	0.64	0.16
80	JACKSON TWP.	0.40	(0.84)	0.61	0.53
81	JORDAN	0.06	(0.90)	(0.49)	(0.84)
82	LAKE ELMO	0.69	0.29	(0.78)	(0.62)
83	LAKE ST. CROIX BEACH	0.37	(0.22)	(0.57)	0.57
84	LAKELAND	1.00	0.08	0.69	0.84
85	LAKELAND SHORES	no data	3.12	no data	no data
86	LAKETOWN	(0.03)	(0.81)	(1.34)	(0.19)
87	LAKEVILLE	1.05	1.09	0.87	0.72
88	LAND FALL	(1.00)	(0.61)	(1.87)	no data
89	LAUDERDALE	(0.37)	(0.25)	(0.31)	(0.25)
90	LEXINGTON	(0.11)	(0.02)	(0.54)	(0.36)
91	LILYDALE	3.19	2.73	3.08	1.61
92	LINO LAKES	1.39	1.05	0.53	0.84
93	LINWOOD TWP.	0.43	(0.40)	(1.24)	(0.07)
94	LITTLE CANADA	0.56	0.41	0.15	(0.11)
95	LONG LAKE	0.05	0.17	(0.07)	0.18
96	LORETTO	(0.54)	(1.01)	(1.52)	(0.79)
97	LOUISVILLE	0.14	0.07	0.16	(0.95)
98	MAHOTMEDI	1.40	1.05	0.62	0.74
99	MAPLE GROVE	3.67	1.81	1.36	0.92
100	MAPLE PLAIN	(0.34)	0.22	(0.22)	(0.41)
101	MAPLEWOOD	0.32	0.23	0.19	(0.11)
102	MARINE ON ST. CROIX	1.13	0.29	(0.09)	(0.61)
103	MASHAN TWP.	(0.19)	(0.16)	(0.82)	(0.51)
104	MAY TWP.	(1.00)	3.62	0.69	0.37
105	MAYER	(0.79)	(1.34)	(1.24)	(0.97)

106	MEDICINE LAKE	0.83	(0.13)	(0.50)	0.10
107	MEDINA	0.39	1.16	(0.36)	0.02
108	MENDOTA	(1.10)	1.53	(0.56)	(0.33)
109	MENDOTA HEIGHTS	1.54	1.05	1.07	0.25
110	MIESVILLE	(1.93)	(2.05)	(1.63)	(1.13)
111	MINNEAPOLIS	(0.51)	(0.47)	(0.47)	(0.34)
112	MINNETONKA BEACH	0.32	4.12	2.24	1.71
113	MINNETONKA	1.33	1.41	1.50	0.45
114	MINNETRISTA	1.88	0.93	2.47	0.06
115	MOUND	0.60	0.28	(0.43)	(0.50)
116	MOUNDS VIEW	0.35	0.08	(0.14)	(0.29)
117	NEW BRIGHTON	0.31	0.03	0.04	(0.24)
118	NEW GERMANY	(0.56)	(1.61)	(1.34)	0.02
119	NEW HOPE	0.32	0.32	0.18	(0.21)
120	NEW MARKET*	(0.03)	0.04	1.12	0.70
121	NEW MARKET TWP.	0.88	(0.16)	(0.53)	no data
122	NEW PRAGUE	(0.17)	(1.07)	no data	(0.61)
123	NEW SCANDIA*	0.08	(0.26)	(0.38)	no data
124	NEW TRIER	no data	(0.46)	(1.19)	0.23
125	NEWPORT	(0.25)	(0.28)	(0.46)	(0.75)
126	NINIGER TWP.	0.34	1.07	(0.76)	(0.76)
127	NORTH OAKS	no data	2.50	1.12	3.63
128	NORTH ST. PAUL	(0.28)	(0.22)	(0.26)	(0.41)
129	NORTHFIELD	no data	no data	1.27	no data
130	NORWOOD YOUNG AMERICA*	(0.83)	(1.20)	(0.82)	(0.62)
131	OAK GROVE*	2.16	0.64	(0.08)	1.02
132	OAK PARK HEIGHTS	(0.22)	(0.01)	(0.24)	0.23
133	OAKDALE	(0.25)	(0.33)	(0.01)	(0.19)
134	ORONO	1.45	1.53	1.56	1.64
135	OSSEO	0.00	(0.16)	(0.27)	(0.47)
136	PINE SPRINGS	no data	0.33	no data	no data
137	PLYMOUTH	0.97	1.02	1.16	0.48
138	PRIOR LAKE	0.65	0.66	0.28	0.02
139	RAMSEY	(0.23)	0.73	1.63	1.61
140	RANDOLPH	(0.69)	(1.28)	(0.76)	0.58
141	RANDOLPH TWP.	no data	no data	0.93	0.69
142	RAVENA TWP.	0.23	1.04	0.98	(0.30)
143	RICHFIELD	(0.08)	(0.21)	(0.10)	(0.42)
144	ROBBINSDALE	0.15	0.19	(0.17)	(0.22)
145	ROCKFORD	(0.73)	0.37	no data	(0.55)
146	ROGERS	(0.52)	(0.66)	(1.00)	0.50
147	ROSEMOUNT	0.19	(0.04)	(0.12)	0.24
148	ROSEVILLE	0.34	0.19	0.19	(0.21)
149	SAN FRANCISCO TWP.	1.59	(0.86)	0.69	no data
150	SAND CREEK TWP.	0.62	0.47	(0.32)	(0.09)
151	SAVAGE	(0.42)	0.42	0.22	0.55
152	SCIOTA TWP.	(0.03)	(0.16)	(0.61)	0.53
153	SHAKOPEE	0.09	0.03	0.25	0.07
154	SHOREVIEW	0.40	0.34	0.32	0.06
155	SHOREWOOD	2.92	1.02	2.11	0.60
156	SOUTH ST. PAUL	(0.49)	(0.49)	(0.52)	(0.35)
157	SPRING LAKE PARK	0.23	(0.10)	0.10	0.08
158	SPRING LAKE TWP.	0.96	0.33	0.16	(0.91)
159	SPRING PARK	0.59	0.48	0.39	0.48

160	ST. ANTHONY	1.87	0.62	1.37	1.27
161	ST. BONIFACIOUS	0.09	(0.13)	(0.16)	(1.09)
162	ST. FANCIS	(0.20)	0.08	(0.18)	(0.42)
163	ST. LAWRENCE TWP.	(2.31)	(1.94)	(0.66)	2.68
164	ST. LOUIS PARK	0.42	0.49	0.35	0.10
165	ST. MARYS POINT	no data	(0.06)	(1.26)	3.22
166	ST. PAUL	(0.51)	(0.47)	(0.53)	(0.39)
167	ST. PAUL PARK	(0.63)	(0.47)	(0.52)	(0.61)
168	STILLWATER	(0.20)	(0.19)	(0.27)	0.01
169	STILLWATER TWP.	1.62	0.04	1.12	(0.45)
170	SUNFISH LAKE	0.62	1.53	(2.21)	no data
171	TONKA BAY	2.82	2.21	1.22	1.45
172	VADNAIS HEIGHTS	0.35	0.44	0.30	(0.03)
173	VERMILLION	(0.31)	0.17	(0.28)	(0.12)
174	VERMILLION TWP.	1.00	(0.22)	(0.55)	(0.39)
175	VICTORIA	(0.73)	0.00	0.34	2.30
176	WACONIA	(0.74)	(0.48)	(0.02)	(0.66)
177	WACONIA TWP.	(0.31)	(0.46)	(0.08)	0.53
178	WATERFORD	(0.46)	(0.46)	(1.19)	(0.97)
179	WATERTOWN	(0.34)	(1.28)	(1.03)	(0.50)
180	WATERTOWN TWP.	(0.80)	(0.66)	(0.25)	(1.03)
181	WAYZATA	0.80	0.48	0.54	0.01
182	WEST LAKELAND TWP.	1.39	0.33	0.34	3.63
183	WEST ST. PAUL	0.31	0.06	(0.20)	(0.24)
184	WHITE BEAR LAKE	0.06	0.49	0.38	0.11
185	WHITE BEAR TWP.	0.93	1.24	0.70	0.84
186	WILLERNIE	(0.45)	(0.46)	(0.32)	(0.33)
187	WOODBURY	0.90	1.47	1.94	0.94
188	WOODLAND	0.14	(0.46)	0.11	3.63
189	YOUNG AMERICA*	(0.86)	(0.74)	(1.34)	(1.56)
190	YOUNG AMERICA TWP.	0.05	(1.32)	no data	no data
191	NOWTHEN*	no data	no data	no data	1.69
192	SCANDIA*	no data	no data	no data	0.03
	STRONG LEVEL OF INVESTMENT >1.00	35	34	26	27
	MODERATE LEVEL OF INVESTMENT .51 - 1.00	22	19	25	32
	WEAK LEVEL OF INVESTMENT .01 - .50	48	46	35	42
	MEDIAN .00	2	1	0	0
	WEAK LEVEL OF DISINVESTMENT (.01) - (.50)	42	46	51	46
	MODERATE LEVEL OF DISINVESTMENT (.51) - (1.00)	22	21	25	23
	STRONG LEVEL OF DISINVESTMENT <(1.00)	9	21	22	6
	NO DATA	12	4	8	16
		192	192	192	192

TABLE 11 - HYPOTHESIS #2 - MEDIAN HOME VALUE – Z-SCORES ALPHABETICAL

#	ALL SUBURBS	1980-1990	1990-2000	2000-2010	1980-2010
1	AFTON	1.62	1.16	1.41	1.52
2	ANDOVER	0.37	0.30	(0.06)	0.13
3	ANOKA	(0.06)	(0.33)	(0.36)	(0.32)
4	APPLE VALLEY	0.22	0.04	(0.34)	(0.15)
5	ARDEN HILLS	1.13	(0.08)	(0.00)	0.22
6	BAYPORT	0.01	(0.02)	(0.19)	(0.11)
7	BAYTOWN TWP.	1.80	2.70	1.26	1.91
8	BELLE PLAINE	0.14	0.25	(0.59)	(0.25)
9	BELLE PLAINE TWP.	1.27	1.58	1.11	1.39
10	BENTON TWP.	1.60	0.43	0.88	0.99
11	BETHEL	0.30	(0.22)	(0.13)	(0.08)
12	BIRCHWOOD VILLAGE	0.95	0.30	0.65	0.67
13	BLAINE	0.36	(0.18)	(0.25)	(0.12)
14	BLAKELEY TWP.	0.99	0.26	1.28	1.05
15	BLOOMINGTON	0.11	(0.06)	(0.23)	(0.13)
16	BROOKLYN CENTER	(0.09)	(0.69)	(0.51)	(0.52)
17	BROOKLN PARK	0.02	(0.25)	(0.21)	(0.19)
18	BURNS TWP.*	0.95	0.49	no data	no data
19	BURNSVILLE	0.62	(0.10)	(0.36)	(0.11)
20	CAMDEN TWP.	1.88	0.62	0.81	1.06
21	CARVER	0.54	0.51	0.18	0.37
22	CASTLE ROCK TWP.	1.17	0.92	0.35	0.72
23	CEDAR LAKE TWP.	1.62	1.01	2.29	2.00
24	CENTERVILLE	0.34	0.10	(0.15)	0.01
25	CHAMPLIN	0.12	(0.06)	(0.19)	(0.10)
26	CHANHASSEN	0.50	0.99	0.54	0.71
27	CHASKA*	0.81	0.57	(0.28)	0.17
28	CHASKA TWP.*	0.98	0.45	no data	no data
29	CIRCLE PINES	(0.25)	(0.27)	(0.13)	(0.21)
30	COATES	0.25	(0.33)	(0.20)	(0.16)
31	COLOGNE	(0.09)	0.28	(0.34)	(0.14)
32	COLUMBIA HEIGHTS	(0.12)	(0.63)	(0.38)	(0.44)
33	COLUMBUS*	0.71	0.33	0.24	0.39
34	COON RAPIDS	0.04	(0.27)	(0.43)	(0.32)
35	CORCORAN	1.19	0.84	0.29	0.67
36	COTTAGE GROVE	0.02	(0.05)	(0.23)	(0.15)
37	CREDIT RIVER TWP.	0.54	0.51	1.94	1.42
38	CRYSTAL	(0.13)	(0.45)	(0.42)	(0.41)
39	DAHLGREN TWP.	1.48	0.82	1.27	1.31
40	DAYTON	0.57	0.07	(0.08)	0.09
41	DEEPHAVEN	0.44	2.47	2.66	2.39
42	DELLWOOD	2.84	3.09	1.89	2.62
43	DENMARK TWP.	1.92	0.68	2.35	2.01
44	DOUGLAS TWP.	1.03	1.22	0.74	1.02
45	EAGAN	0.34	0.22	(0.20)	0.02
46	EAST BETHEL	0.51	0.21	(0.18)	0.06
47	EDEN PRAIRIE	0.53	0.68	0.35	0.52
48	EDINA	1.45	1.12	0.67	1.03
49	ELKO NEW MARKET*	0.04	1.06	0.24	0.46
50	EMPIRE TWP.	0.50	0.59	0.10	0.34
51	EUREKA TWP.	1.23	1.27	0.69	1.04

52	EXCELSIOR	0.27	1.06	0.77	0.82
53	FALCON HEIGHTS	0.27	0.19	0.29	0.29
54	FARMINGTON	0.12	0.39	(0.36)	(0.08)
55	FOREST LAKE*	0.25	(0.28)	0.32	0.16
56	FOREST LAKE TWP.*	0.41	0.41	no data	(1.50)
57	FRIDLEY	(0.02)	(0.49)	(0.34)	(0.35)
58	GEM LAKE	(0.29)	0.30	0.12	0.10
59	GOLDEN VALLEY	0.18	(0.02)	0.11	0.10
60	GRANT*	1.83	1.56	1.09	1.49
61	GREENFIELD	0.72	1.92	1.83	1.79
62	GREENVALE TWP.	1.93	1.49	0.39	1.08
63	GREENWOOD	1.47	4.00	4.49	4.14
64	GREY CLOUD ISLAND TWP.	0.09	0.28	0.52	0.41
65	HAM LAKE	0.45	0.30	0.54	0.50
66	HAMBURG	(0.42)	0.07	(0.55)	(0.40)
67	HAMPTON	0.04	0.08	(0.26)	(0.12)
68	HAMPTON TWP.	1.47	1.52	0.59	1.11
69	HANCOCK	1.81	0.91	0.81	1.13
70	HANOVER	1.32	0.68	1.16	1.17
71	HASSAN TWP.	0.90	0.71	1.38	1.22
72	HASTINGS	0.21	(0.11)	(0.43)	(0.24)
73	HELENA TWP.	1.29	0.92	1.37	1.36
74	HILLTOP	0.95	no data	no data	(1.46)
75	HOLLYWOOD TWP.	1.42	0.41	1.04	1.04
76	HOPKINS	0.05	(0.15)	(0.20)	(0.15)
77	HUGO	1.04	(0.01)	0.01	0.23
78	INDEPENDENCE	1.47	1.95	1.75	1.92
79	INVER GROVE	0.68	(0.01)	(0.28)	(0.02)
80	JACKSON TWP.	1.57	1.57	(1.02)	0.18
81	JORDAN	0.38	0.17	(0.41)	(0.11)
82	LAKE ELMO	1.87	1.28	0.82	1.26
83	LAKE ST. CROIX BEACH	(0.13)	(0.04)	(0.12)	(0.11)
84	LAKELAND	(0.05)	0.22	(0.24)	(0.09)
85	LAKELAND SHORES	0.77	0.82	0.44	0.66
86	LAKETOWN	0.49	0.57	1.02	0.88
87	LAKEVILLE	0.66	0.62	(0.06)	0.28
88	LAND FALL	3.27	no data	no data	no data
89	LAUDERDALE	0.02	(0.38)	(0.41)	(0.35)
90	LEXINGTON	0.45	(0.52)	(0.36)	(0.27)
91	LILYDALE	5.63	0.29	(0.33)	1.09
92	LINO LAKES	0.53	0.53	0.16	0.36
93	LINWOOD TWP.	0.54	0.08	(0.11)	0.07
94	LITTLE CANADA	1.23	(0.00)	(0.55)	(0.06)
95	LONG LAKE	0.14	(0.08)	0.18	0.12
96	LORETTO	0.36	0.49	(0.40)	(0.02)
97	LOUISVILLE	0.87	0.88	1.49	1.33
98	MAHOTMEDI	0.53	0.72	0.67	0.72
99	MAPLE GROVE	0.12	0.21	(0.00)	0.09
100	MAPLE PLAIN	0.25	0.02	(0.18)	(0.05)
101	MAPLEWOOD	0.21	(0.20)	(0.24)	(0.16)
102	MARINE ON ST. CROIX	0.73	1.20	0.63	0.88
103	MASHAN TWP.	1.16	1.22	0.63	0.98
104	MAY TWP.	1.77	1.69	1.17	1.56
105	MAYER	0.02	(0.14)	(0.11)	(0.10)

106	MEDICINE LAKE	2.80	1.71	4.39	3.71
107	MEDINA	1.43	0.99	2.17	1.88
108	MENDOTA	(0.49)	(0.17)	0.02	(0.14)
109	MENDOTA HEIGHTS	1.42	0.19	0.65	0.75
110	MIESVILLE	0.20	0.17	(0.81)	(0.39)
111	MINNEAPOLIS	(0.08)	(0.26)	0.07	(0.05)
112	MINNETONKA BEACH	4.95	6.35	4.13	5.35
113	MINNETONKA	0.50	0.51	0.32	0.44
114	MINNETRISTA	1.39	2.23	1.57	1.87
115	MOUND	(0.19)	0.04	(0.12)	(0.10)
116	MOUNDS VIEW	0.42	(0.34)	(0.38)	(0.23)
117	NEW BRIGHTON	0.34	(0.26)	(0.24)	(0.15)
118	NEW GERMANY	(0.58)	(0.33)	(0.38)	(0.44)
119	NEW HOPE	0.03	(0.22)	(0.33)	(0.25)
120	NEW MARKET*	0.31	0.02	3.31	2.04
121	NEW MARKET TWP.	1.81	2.02	no data	no data
122	NEW PRAGUE	(0.06)	no data	no data	(0.17)
123	NEW SCANDIA*	1.13	0.74	no data	no data
124	NEW TRIER	0.45	0.17	(0.20)	0.03
125	NEWPORT	(0.14)	(0.36)	(0.19)	(0.24)
126	NINIGER TWP.	0.48	0.79	0.99	0.92
127	NORTH OAKS	2.34	2.88	1.55	2.25
128	NORTH ST. PAUL	0.03	(0.39)	(0.26)	(0.26)
129	NORTHFIELD	no data	1.28	(0.62)	no data
130	NORWOOD YOUNG AMERICA*	0.07	(0.18)	(0.65)	(0.42)
131	OAK GROVE*	0.33	0.34	0.18	0.28
132	OAK PARK HEIGHTS	0.41	0.32	(0.42)	(0.07)
133	OAKDALE	0.37	(0.06)	(0.39)	(0.17)
134	ORONO	1.70	2.74	3.04	2.96
135	OSSEO	(0.03)	(0.41)	(0.16)	(0.22)
136	PINE SPRINGS	0.43	1.63	1.05	1.19
137	PLYMOUTH	0.70	0.51	0.18	0.40
138	PRIOR LAKE	(0.07)	0.65	0.20	0.29
139	RAMSEY	0.05	0.13	(0.27)	(0.11)
140	RANDOLPH	0.30	(0.37)	(0.02)	(0.06)
141	RANDOLPH TWP.	1.03	1.16	0.65	0.94
142	RAVENA TWP.	0.41	0.76	0.27	0.46
143	RICHFIELD	0.04	(0.22)	(0.24)	(0.20)
144	ROBBINSDALE	(0.11)	(0.45)	(0.29)	(0.32)
145	ROCKFORD	1.38	0.20	(2.53)	(1.15)
146	ROGERS	0.47	1.33	(0.03)	0.46
147	ROSEMOUNT	0.38	0.32	(0.13)	0.10
148	ROSEVILLE	0.16	(0.14)	(0.21)	(0.13)
149	SAN FRANCISCO TWP.	1.75	1.11	0.97	1.27
150	SAND CREEK TWP.	1.40	0.54	1.41	1.29
151	SAVAGE	0.16	0.60	0.03	0.23
152	SCIOTA TWP.	0.94	1.32	0.01	0.58
153	SHAKOPEE	0.17	0.11	(0.16)	(0.03)
154	SHOREVIEW	0.62	(0.12)	(0.07)	0.06
155	SHOREWOOD	0.96	1.60	1.00	1.26
156	SOUTH ST. PAUL	(0.11)	(0.36)	(0.28)	(0.29)
157	SPRING LAKE PARK	0.12	(0.39)	(0.45)	(0.35)
158	SPRING LAKE TWP.	1.25	1.36	1.16	1.35
159	SPRING PARK	0.06	1.13	0.42	0.59

160	ST. ANTHONY	0.25	(0.13)	(0.11)	(0.05)
161	ST. BONIFACIOUS	0.22	0.50	(0.23)	0.06
162	ST. FANCIS	0.36	0.28	(0.56)	(0.17)
163	ST. LAWRENCE TWP.	1.46	0.17	2.01	1.56
164	ST. LOUIS PARK	0.05	(0.07)	(0.06)	(0.05)
165	ST. MARYS POINT	0.16	(0.06)	0.54	0.34
166	ST. PAUL	(0.10)	(0.46)	(0.13)	(0.23)
167	ST. PAUL PARK	0.06	(0.50)	(0.39)	(0.36)
168	STILLWATER	0.23	0.41	(0.03)	0.15
169	STILLWATER TWP.	2.23	2.02	0.63	1.43
170	SUNFISH LAKE	7.37	4.51	3.25	4.81
171	TONKA BAY	1.56	2.55	2.86	2.77
172	VADNAIS HEIGHTS	0.75	(0.14)	(0.24)	(0.03)
173	VERMILLION	0.17	(0.16)	(0.41)	(0.26)
174	VERMILLION TWP.	1.07	0.66	0.62	0.79
175	VICTORIA	1.11	1.29	0.85	1.11
176	WACONIA	0.21	0.40	(0.13)	0.08
177	WACONIA TWP.	1.74	0.79	1.03	1.21
178	WATERFORD	0.58	0.14	0.54	0.48
179	WATERTOWN	0.50	(0.02)	(0.35)	(0.11)
180	WATERTOWN TWP.	1.42	0.98	0.83	1.08
181	WAYZATA	0.47	2.57	0.59	1.19
182	WEST LAKELAND TWP.	1.86	2.63	0.72	1.58
183	WEST ST. PAUL	0.05	(0.34)	(0.24)	(0.23)
184	WHITE BEAR LAKE	0.04	(0.26)	(0.21)	(0.19)
185	WHITE BEAR TWP.	0.22	0.24	0.07	0.16
186	WILLERNIE	(0.06)	(0.31)	(0.37)	(0.33)
187	WOODBURY	0.60	0.37	0.10	0.29
188	WOODLAND	4.25	4.13	2.96	3.86
189	YOUNG AMERICA*	0.03	1.00	0.78	0.75
190	YOUNG AMERICA TWP.	1.11	no data	no data	no data
191	NOWTHEN*	no data	no data	no data	no data
192	SCANDIA*	no data	no data	no data	no data
	STRONG INCREASE IN INVESTMENT >1.00	57	44	37	51
	MODERATE INCREASE IN INVESTMENT .51 - 1.00	33	35	29	20
	WEAK INCREASE IN INVESTMENT .01 - .50	76	48	28	40
	MEDIAN .00	0	0	0	0
	WEAK INCREASE IN DISINVESTMENT (.01) - (.50)	22	55	77	68
	MODERATE INCREASE IN DISINVESTMENT (.51) - (1.00)	1	4	8	1
	STRONG INCREASE IN DISINVESTMENT <(1.00)	0	0	2	3
	NO DATA	3	6	11	9
		192	192	192	192

TABLE 12 - HYPOTHSIS #2 - MEDIAN GROSS RENT – Z-SCORES ALPHABETICAL

#	ALL SUBURBS	1980-1990	1990-2000	2000-2010	1980-2010
1	AFTON	(0.95)	4.79	(0.23)	1.96
2	ANDOVER	0.51	(0.09)	0.56	0.70
3	ANOKA	(0.25)	(0.11)	(0.19)	(0.34)
4	APPLE VALLEY	0.46	(0.13)	0.36	0.46
5	ARDEN HILLS	1.49	(0.37)	1.43	1.77
6	BAYPORT	0.37	(0.21)	1.11	1.11
7	BAYTOWN TWP.	(1.29)	1.67	3.68	3.98
8	BELLE PLAINE	(0.62)	(0.33)	(0.12)	(0.53)
9	BELLE PLAINE TWP.	(0.27)	0.26	(0.67)	(0.62)
10	BENTON TWP.	(0.93)	0.27	1.13	0.89
11	BETHEL	(1.12)	(0.41)	(0.16)	(0.81)
12	BIRCHWOOD VILLAGE	(0.89)	1.31	2.60	2.89
13	BLAINE	0.26	(0.07)	0.22	0.29
14	BLAKELEY TWP.	no data	0.26	0.88	no data
15	BLOOMINGTON	0.29	0.04	(0.29)	(0.15)
16	BROOKLYN CENTER	0.08	(0.30)	(0.04)	(0.17)
17	BROOKLN PARK	(0.17)	0.10	(0.29)	(0.29)
18	BURNS TWP.*	1.42	(0.82)	no data	no data
19	BURNSVILLE	0.35	0.20	(0.38)	(0.13)
20	CAMDEN TWP.	1.41	(0.15)	1.23	1.67
21	CARVER	0.59	(0.09)	0.22	0.40
22	CASTLE ROCK TWP.	(0.57)	(0.08)	1.02	0.73
23	CEDAR LAKE TWP.	(2.08)	6.26	(1.50)	1.07
24	CENTERVILLE	(0.98)	0.24	0.09	(0.16)
25	CHAMPLIN	0.00	(0.28)	(0.00)	(0.15)
26	CHANHASSEN	0.08	(0.16)	0.14	0.08
27	CHASKA*	0.19	0.07	(0.02)	0.09
28	CHASKA TWP.*	1.03	(0.82)	no data	no data
29	CIRCLE PINES	(2.96)	0.22	0.97	(0.08)
30	COATES	(0.99)	0.19	0.59	0.29
31	COLOGNE	(0.98)	(0.45)	0.37	(0.25)
32	COLUMBIA HEIGHTS	(0.09)	(0.44)	0.14	(0.13)
33	COLUMBUS*	0.18	0.82	(1.09)	(0.56)
34	COON RAPIDS	0.53	0.05	(0.26)	(0.02)
35	CORCORAN	(0.29)	1.57	2.39	3.05
36	COTTAGE GROVE	(0.33)	0.14	0.27	0.21
37	CREDIT RIVER TWP.	0.63	(0.37)	0.32	0.35
38	CRYSTAL	0.03	(0.04)	(0.28)	(0.29)
39	DAHLGREN TWP.	(0.76)	(0.65)	1.10	0.43
40	DAYTON	2.87	(3.22)	1.07	0.43
41	DEEPHAVEN	2.15	(1.92)	3.01	2.75
42	DELLWOOD	(3.48)	1.06	no data	no data
43	DENMARK TWP.	(0.32)	(0.19)	(1.22)	(1.42)
44	DOUGLAS TWP.	(2.95)	1.67	no data	no data
45	EAGAN	0.66	0.19	(0.34)	0.02
46	EAST BETHEL	(0.04)	(0.64)	1.83	1.42
47	EDEN PRAIRIE	0.74	0.35	(0.27)	0.21
48	EDINA	0.33	0.25	(0.08)	0.18
49	ELKO NEW MARKET*	no data	(2.80)	1.98	no data
50	EMPIRE TWP.	1.03	0.30	0.62	1.16
51	EUREKA TWP.	0.21	1.23	1.79	2.48

52	EXCELSIOR	(0.23)	(0.21)	(0.23)	(0.42)
53	FALCON HEIGHTS	(0.40)	(0.44)	0.11	(0.28)
54	FARMINGTON	(0.41)	(0.10)	0.25	0.03
55	FOREST LAKE*	(0.37)	(0.19)	0.09	(0.16)
56	FOREST LAKE TWP.*	0.08	0.80	no data	no data
57	FRIDLEY	(0.10)	(0.15)	(0.14)	(0.26)
58	GEM LAKE	0.84	0.43	1.94	2.45
59	GOLDEN VALLEY	0.11	(0.17)	0.08	0.03
60	GRANT*	1.95	no data	no data	2.52
61	GREENFIELD	0.06	(0.34)	0.28	0.11
62	GREENVALE TWP.	(0.64)	(0.19)	(0.13)	(0.48)
63	GREENWOOD	0.97	0.06	0.15	0.55
64	GREY CLOUD ISLAND TWP.	1.23	(0.48)	no data	no data
65	HAM LAKE	(0.33)	(0.24)	0.14	(0.12)
66	HAMBURG	(0.99)	(0.44)	(0.32)	(0.93)
67	HAMPTON	(0.78)	(0.65)	0.25	(0.40)
68	HAMPTON TWP.	(0.17)	(0.51)	0.99	0.63
69	HANCOCK	(1.12)	1.84	(0.60)	(0.04)
70	HANOVER	no data	(0.82)	no data	no data
71	HASSAN TWP.	(1.35)	1.40	0.46	0.67
72	HASTINGS	(0.22)	(0.17)	(0.19)	(0.36)
73	HELENA TWP.	(0.33)	(0.48)	0.62	0.22
74	HILLTOP	(0.53)	(0.61)	(0.31)	(0.83)
75	HOLLYWOOD TWP.	(1.12)	0.84	0.15	0.16
76	HOPKINS	0.01	0.11	(0.37)	(0.30)
77	HUGO	(0.83)	(0.78)	2.00	1.21
78	INDEPENDENCE	2.03	(0.44)	(0.33)	0.23
79	INVER GROVE	0.19	0.32	(0.22)	0.04
80	JACKSON TWP.	(1.20)	1.39	0.21	0.49
81	JORDAN	(1.07)	0.19	(0.63)	(0.93)
82	LAKE ELMO	(0.07)	(1.14)	(0.21)	(0.84)
83	LAKE ST. CROIX BEACH	(0.47)	(0.47)	0.99	0.54
84	LAKELAND	(0.50)	0.72	0.51	0.69
85	LAKELAND SHORES	no data	no data	no data	no data
86	LAKETOWN	(0.91)	(0.85)	0.63	(0.20)
87	LAKEVILLE	0.63	0.09	0.26	0.54
88	LAND FALL	(0.11)	(1.63)	no data	no data
89	LAUDERDALE	(0.07)	(0.15)	(0.08)	(0.18)
90	LEXINGTON	0.04	(0.60)	(0.06)	(0.36)
91	LILYDALE	1.24	1.25	(0.12)	1.02
92	LINO LAKES	0.38	(0.27)	0.61	0.60
93	LINWOOD TWP.	(0.71)	(1.09)	0.69	(0.18)
94	LITTLE CANADA	0.15	(0.17)	(0.22)	(0.25)
95	LONG LAKE	0.16	(0.22)	0.24	0.18
96	LORETTO	(0.84)	(0.90)	0.07	(0.74)
97	LOUISVILLE	0.00	0.12	(1.17)	(1.07)
98	MAHOTMEDI	0.37	(0.17)	0.44	0.48
99	MAPLE GROVE	(0.10)	0.05	0.18	0.17
100	MAPLE PLAIN	0.46	(0.44)	(0.32)	(0.37)
101	MAPLEWOOD	0.07	0.02	(0.24)	(0.20)
102	MARINE ON ST. CROIX	(0.33)	(0.35)	(0.62)	(0.92)
103	MASHAN TWP.	(0.07)	(0.81)	(0.06)	(0.52)
104	MAY TWP.	4.75	(2.23)	(0.01)	0.64
105	MAYER	(1.07)	(0.30)	(0.32)	(0.88)

106	MEDICINE LAKE	(0.64)	(0.47)	0.43	(0.08)
107	MEDINA	1.10	(1.38)	0.24	(0.07)
108	MENDOTA	2.40	(1.92)	(0.02)	(0.11)
109	MENDOTA HEIGHTS	0.29	0.34	(0.39)	(0.08)
110	MIESVILLE	(1.21)	(0.15)	(0.25)	(0.79)
111	MINNEAPOLIS	(0.24)	(0.15)	(0.08)	(0.25)
112	MINNETONKA BEACH	4.54	(0.87)	0.53	1.80
113	MINNETONKA	0.83	0.54	(0.43)	0.19
114	MINNETRISTA	(0.05)	2.05	(1.48)	(0.36)
115	MOUND	(0.04)	(0.73)	(0.29)	(0.69)
116	MOUNDS VIEW	(0.12)	(0.23)	(0.23)	(0.40)
117	NEW BRIGHTON	(0.15)	0.02	(0.29)	(0.33)
118	NEW GERMANY	(1.52)	(0.19)	0.86	0.14
119	NEW HOPE	0.17	(0.06)	(0.35)	(0.30)
120	NEW MARKET*	0.06	1.25	0.08	0.77
121	NEW MARKET TWP.	(0.70)	(0.47)	no data	no data
122	NEW PRAGUE	(1.12)	no data	no data	(0.63)
123	NEW SCANDIA*	(0.35)	(0.22)	no data	no data
124	NEW TRIER	no data	(0.98)	1.01	no data
125	NEWPORT	(0.17)	(0.29)	(0.56)	(0.77)
126	NINIGER TWP.	1.02	(1.76)	(0.38)	(0.91)
127	NORTH OAKS	no data	(0.80)	3.37	no data
128	NORTH ST. PAUL	(0.08)	(0.12)	(0.30)	(0.39)
129	NORTHFIELD	no data	no data	no data	no data
130	NORWOOD YOUNG AMERICA*	(0.89)	0.07	(0.19)	(0.49)
131	OAK GROVE*	(0.55)	(0.62)	1.19	0.62
132	OAK PARK HEIGHTS	0.12	(0.27)	0.41	0.30
133	OAKDALE	(0.23)	0.26	(0.21)	(0.15)
134	ORONO	0.89	0.51	0.86	1.46
135	OSSEO	(0.18)	(0.18)	(0.36)	(0.52)
136	PINE SPRINGS	no data	no data	no data	no data
137	PLYMOUTH	0.59	0.48	(0.19)	0.30
138	PRIOR LAKE	0.37	(0.23)	(0.15)	(0.12)
139	RAMSEY	0.98	1.26	0.79	1.82
140	RANDOLPH	(1.06)	0.20	1.12	0.79
141	RANDOLPH TWP.	no data	no data	0.19	no data
142	RAVENA TWP.	1.05	0.26	(0.95)	(0.38)
143	RICHFIELD	(0.19)	0.05	(0.41)	(0.45)
144	ROBBINSDALE	0.13	(0.36)	(0.14)	(0.28)
145	ROCKFORD	0.85	no data	no data	(0.43)
146	ROGERS	(0.45)	(0.59)	1.18	0.67
147	ROSEMOUNT	(0.16)	(0.11)	0.35	0.22
148	ROSEVILLE	0.02	0.05	(0.35)	(0.31)
149	SAN FRANCISCO TWP.	(1.93)	1.50	no data	no data
150	SAND CREEK TWP.	0.17	(0.76)	0.10	(0.24)
151	SAVAGE	0.73	(0.10)	0.47	0.69
152	SCIOTA TWP.	(0.16)	(0.57)	0.98	0.59
153	SHAKOPEE	(0.02)	0.27	(0.08)	0.05
154	SHOREVIEW	0.16	0.09	(0.13)	(0.02)
155	SHOREWOOD	(0.56)	1.57	(0.64)	(0.01)
156	SOUTH ST. PAUL	(0.26)	(0.19)	(0.07)	(0.27)
157	SPRING LAKE PARK	(0.26)	0.20	0.03	0.04
158	SPRING LAKE TWP.	(0.18)	(0.10)	(1.12)	(1.22)
159	SPRING PARK	0.20	0.05	0.30	0.40

160	ST. ANTHONY	(0.39)	1.05	0.56	0.96
161	ST. BONIFACIOUS	(0.20)	(0.07)	(1.13)	(1.22)
162	ST. FANCIS	0.21	(0.27)	(0.36)	(0.41)
163	ST. LAWRENCE TWP.	(0.85)	0.85	3.42	3.46
164	ST. LOUIS PARK	0.31	(0.01)	(0.11)	0.01
165	ST. MARYS POINT	no data	(1.39)	4.40	no data
166	ST. PAUL	(0.24)	(0.21)	(0.11)	(0.31)
167	ST. PAUL PARK	(0.16)	(0.21)	(0.36)	(0.53)
168	STILLWATER	(0.10)	(0.15)	0.18	0.06
169	STILLWATER TWP.	(0.91)	1.25	(1.20)	(0.86)
170	SUNFISH LAKE	1.39	(3.80)	no data	no data
171	TONKA BAY	0.86	(0.44)	0.87	0.94
172	VADNAIS HEIGHTS	0.29	(0.02)	(0.22)	(0.11)
173	VERMILLION	0.37	(0.46)	0.04	(0.06)
174	VERMILLION TWP.	(0.84)	(0.45)	(0.09)	(0.65)
175	VICTORIA	0.43	0.39	2.37	2.68
176	WACONIA	(0.11)	0.37	(0.72)	(0.55)
177	WACONIA TWP.	(0.35)	0.29	0.64	0.65
178	WATERFORD	(0.26)	(0.98)	(0.34)	(0.95)
179	WATERTOWN	(1.27)	(0.11)	0.08	(0.47)
180	WATERTOWN TWP.	(0.28)	0.27	(1.00)	(0.95)
181	WAYZATA	0.07	0.22	(0.33)	(0.17)
182	WEST LAKELAND TWP.	(0.44)	0.11	3.85	3.65
183	WEST ST. PAUL	(0.11)	(0.28)	(0.14)	(0.33)
184	WHITE BEAR LAKE	0.53	0.02	(0.12)	0.10
185	WHITE BEAR TWP.	0.88	(0.23)	0.50	0.71
186	WILLERNIE	(0.26)	0.01	(0.16)	(0.25)
187	WOODBURY	1.16	0.99	(0.16)	0.82
188	WOODLAND	(0.61)	0.51	4.00	3.94
189	YOUNG AMERICA*	(0.34)	(0.91)	(0.92)	(1.51)
190	YOUNG AMERICA TWP.	(1.54)	no data	no data	no data
191	NOWTHEN*	no data	no data	no data	no data
192	SCANDIA*	no data	no data	no data	no data
	STRONG INCREASE IN INVESTMENT >1.00	19	19	26	23
	MODERATE INCREASE IN INVESTMENT .51 - 1.00	18	9	21	22
	WEAK INCREASE IN INVESTMENT .01 - .50	40	46	38	35
	MEDIAN .00	2	0	0	0
	WEAK INCREASE IN DISINVESTMENT (.01) - (.50)	55	73	68	59
	MODERATE INCREASE IN DISINVESTMENT (.51) - (1.00)	27	23	10	24
	STRONG INCREASE IN DISINVESTMENT <(1.00)	19	12	8	5
	NO DATA	12	10	21	24
		192	192	192	192

TABLE 13 - HYPOTHESIS #3 - MEDIAN HOME VALUE – Z-SCORES ALPHABETICAL

#	ALL SUBURBS	1980-1990 1990-2000	1990-2000 2000-2010
1	AFTON	(0.06)	1.19
2	ANDOVER	0.04	(0.28)
3	ANOKA	(0.42)	(0.27)
4	APPLE VALLEY	(0.19)	(0.50)
5	ARDEN HILLS	(1.33)	0.05
6	BAYPORT	(0.04)	(0.25)
7	BAYTOWN TWP.	1.99	(0.06)
8	BELLE PLAINE	0.22	(0.99)
9	BELLE PLAINE TWP.	0.93	0.48
10	BENTON TWP.	(1.09)	0.92
11	BETHEL	(0.64)	(0.03)
12	BIRCHWOOD VILLAGE	(0.58)	0.69
13	BLAINE	(0.64)	(0.23)
14	BLAKELEY TWP.	(0.69)	1.61
15	BLOOMINGTON	(0.20)	(0.28)
16	BROOKLYN CENTER	(0.91)	(0.24)
17	BROOKLN PARK	(0.38)	(0.12)
18	BURNS TWP.*	(0.31)	no data
19	BURNSVILLE	(0.81)	(0.44)
20	CAMDEN TWP.	(1.12)	0.71
21	CARVER	0.16	(0.09)
22	CASTLE ROCK TWP.	0.08	(0.14)
23	CEDAR LAKE TWP.	(0.28)	2.51
24	CENTERVILLE	(0.22)	(0.28)
25	CHAMPLIN	(0.22)	(0.22)
26	CHANHASSEN	0.91	0.08
27	CHASKA*	(0.05)	(0.77)
28	CHASKA TWP.*	(0.40)	no data
29	CIRCLE PINES	(0.13)	(0.00)
30	COATES	(0.76)	(0.05)
31	COLOGNE	0.50	(0.66)
32	COLUMBIA HEIGHTS	(0.80)	(0.10)
33	COLUMBUS*	(0.28)	0.11
34	COON RAPIDS	(0.44)	(0.41)
35	CORCORAN	(0.07)	(0.16)
36	COTTAGE GROVE	(0.10)	(0.29)
37	CREDIT RIVER TWP.	0.17	2.35
38	CRYSTAL	(0.52)	(0.28)
39	DAHLGREN TWP.	(0.40)	1.21
40	DAYTON	(0.52)	(0.16)
41	DEEPHAVEN	3.12	2.04
42	DELLWOOD	1.44	0.55
43	DENMARK TWP.	(1.07)	2.81
44	DOUGLAS TWP.	0.67	0.21
45	EAGAN	(0.05)	(0.42)
46	EAST BETHEL	(0.25)	(0.39)
47	EDEN PRAIRIE	0.43	0.03
48	EDINA	0.08	0.18
49	ELKO NEW MARKET*	1.49	(0.37)
50	EMPIRE TWP.	0.32	(0.26)

51	EUREKA TWP.	0.53	0.10
52	EXCELSIOR	1.26	0.35
53	FALCON HEIGHTS	(0.01)	0.27
54	FARMINGTON	0.44	(0.76)
55	FOREST LAKE*	(0.68)	0.64
56	FOREST LAKE TWP.*	0.16	no data
57	FRIDLEY	(0.69)	(0.14)
58	GEM LAKE	0.75	(0.03)
59	GOLDEN VALLEY	(0.22)	0.17
60	GRANT*	0.30	0.47
61	GREENFIELD	2.02	1.26
62	GREENVALE TWP.	0.10	(0.46)
63	GREENWOOD	4.24	3.55
64	GREY CLOUD ISLAND TWP.	0.31	0.53
65	HAM LAKE	(0.06)	0.55
66	HAMBURG	0.55	(0.81)
67	HAMPTON	0.07	(0.41)
68	HAMPTON TWP.	0.63	(0.20)
69	HANCOCK	(0.63)	0.51
70	HANOVER	(0.43)	1.15
71	HASSAN TWP.	0.07	1.44
72	HASTINGS	(0.38)	(0.52)
73	HELENA TWP.	(0.05)	1.29
74	HILLTOP	no data	no data
75	HOLLYWOOD TWP.	(0.92)	1.16
76	HOPKINS	(0.28)	(0.18)
77	HUGO	(1.13)	0.02
78	INDEPENDENCE	1.26	1.11
79	INVER GROVE	(0.75)	(0.38)
80	JACKSON TWP.	0.60	(2.48)
81	JORDAN	(0.16)	(0.68)
82	LAKE ELMO	(0.15)	0.27
83	LAKE ST. CROIX BEACH	0.09	(0.14)
84	LAKELAND	0.37	(0.48)
85	LAKELAND SHORES	0.36	0.06
86	LAKETOWN	0.31	1.03
87	LAKEVILLE	0.20	(0.51)
88	LAND FALL	no data	no data
89	LAUDERDALE	(0.58)	(0.32)
90	LEXINGTON	(1.25)	(0.15)
91	LILYDALE	(5.65)	(0.66)
92	LINO LAKES	0.20	(0.13)
93	LINWOOD TWP.	(0.46)	(0.21)
94	LITTLE CANADA	(1.32)	(0.76)
95	LONG LAKE	(0.27)	0.31
96	LORETTO	0.33	(0.88)
97	LOUISVILLE	0.35	1.48
98	MAHOTMEDI	0.48	0.45
99	MAPLE GROVE	0.18	(0.15)
100	MAPLE PLAIN	(0.24)	(0.27)
101	MAPLEWOOD	(0.53)	(0.20)
102	MARINE ON ST. CROIX	0.96	0.07
103	MASHAN TWP.	0.53	0.06
104	MAY TWP.	0.56	0.49

105	MAYER	(0.23)	(0.06)
106	MEDICINE LAKE	(0.52)	4.95
107	MEDINA	(0.10)	2.35
108	MENDOTA	0.28	0.14
109	MENDOTA HEIGHTS	(1.24)	0.78
110	MIESVILLE	0.03	(1.24)
111	MINNEAPOLIS	(0.30)	0.28
112	MINNETONKA BEACH	3.91	1.47
113	MINNETONKA	0.21	0.10
114	MINNETRISTA	1.74	0.68
115	MOUND	0.26	(0.19)
116	MOUNDS VIEW	(0.95)	(0.30)
117	NEW BRIGHTON	(0.75)	(0.16)
118	NEW GERMANY	0.14	(0.31)
119	NEW HOPE	(0.35)	(0.31)
120	NEW MARKET*	(0.30)	4.59
121	NEW MARKET TWP.	0.98	no data
122	NEW PRAGUE	no data	no data
123	NEW SCANDIA*	(0.14)	no data
124	NEW TRIER	(0.24)	(0.38)
125	NEWPORT	(0.37)	(0.02)
126	NINIGER TWP.	0.64	0.85
127	NORTH OAKS	1.67	0.21
128	NORTH ST. PAUL	(0.60)	(0.10)
129	NORTHFIELD	no data	(1.73)
130	NORWOOD YOUNG AMERICA*	(0.34)	(0.78)
131	OAK GROVE*	0.14	0.03
132	OAK PARK HEIGHTS	0.02	(0.80)
133	OAKDALE	(0.48)	(0.50)
134	ORONO	2.16	2.38
135	OSSEO	(0.57)	0.06
136	PINE SPRINGS	1.90	0.36
137	PLYMOUTH	(0.01)	(0.10)
138	PRIOR LAKE	1.03	(0.16)
139	RAMSEY	0.13	(0.46)
140	RANDOLPH	(0.87)	0.22
141	RANDOLPH TWP.	0.57	0.13
142	RAVENA TWP.	0.66	(0.14)
143	RICHFIELD	(0.37)	(0.19)
144	ROBBINSDALE	(0.54)	(0.09)
145	ROCKFORD	(1.20)	(3.65)
146	ROGERS	1.43	(0.94)
147	ROSEMOUNT	0.05	(0.40)
148	ROSEVILLE	(0.38)	(0.19)
149	SAN FRANCISCO TWP.	(0.27)	0.60
150	SAND CREEK TWP.	(0.72)	1.60
151	SAVAGE	0.70	(0.36)
152	SCIOTA TWP.	0.91	(0.88)
153	SHAKOPEE	(0.03)	(0.30)
154	SHOREVIEW	(0.84)	(0.02)
155	SHOREWOOD	1.29	0.32
156	SOUTH ST. PAUL	(0.40)	(0.15)
157	SPRING LAKE PARK	(0.70)	(0.36)
158	SPRING LAKE TWP.	0.64	0.70

159	SPRING PARK	1.59	(0.18)
160	ST. ANTHONY	(0.45)	(0.06)
161	ST. BONIFACIOUS	0.49	(0.65)
162	ST. FANCIS	0.02	(0.96)
163	ST. LAWRENCE TWP.	(1.33)	2.69
164	ST. LOUIS PARK	(0.16)	(0.04)
165	ST. MARYS POINT	(0.25)	0.79
166	ST. PAUL	(0.57)	0.12
167	ST. PAUL PARK	(0.80)	(0.20)
168	STILLWATER	0.35	(0.32)
169	STILLWATER TWP.	0.54	(0.49)
170	SUNFISH LAKE	(1.37)	1.48
171	TONKA BAY	2.03	2.26
172	VADNAIS HEIGHTS	(1.00)	(0.25)
173	VERMILLION	(0.43)	(0.46)
174	VERMILLION TWP.	(0.19)	0.42
175	VICTORIA	0.69	0.31
176	WACONIA	0.36	(0.45)
177	WACONIA TWP.	(0.73)	0.91
178	WATERFORD	(0.43)	0.65
179	WATERTOWN	(0.57)	(0.47)
180	WATERTOWN TWP.	(0.10)	0.49
181	WAYZATA	3.23	(0.91)
182	WEST LAKELAND TWP.	1.82	(0.77)
183	WEST ST. PAUL	(0.55)	(0.11)
184	WHITE BEAR LAKE	(0.42)	(0.12)
185	WHITE BEAR TWP.	0.12	(0.07)
186	WILLERNIE	(0.39)	(0.31)
187	WOODBURY	(0.11)	(0.12)
188	WOODLAND	1.43	1.34
189	YOUNG AMERICA*	1.42	0.41
190	YOUNG AMERICA TWP.	no data	no data
191	NOWTHEN*	no data	no data
192	SCANDIA*	no data	no data
	STRONG ACCERLATION IN INVESTMENT >1.00	22	26
	MODERATE ACCELERATION IN INVESTMENT .51 - 1.00	20	16
	WEAK ACCELERATION IN INVESTMENT .01 - .50	40	35
	MEDIAN .00	0	0
	WEAK ACCELERATION IN DISINVESTMENT (.01) - (.50)	58	80
	MODERATE ACCELERATION IN DISINVESTMENT (.51) - (1.00)	33	20
	STRONG ACCELRATION IN DISINVESTMENT <(1.00)	12	4
	NO DATA	7	11
		192	192

TABLE 14 - HYPOTHESIS #3 - MEDIAN GROSS RENT – Z-SCORES ALPHABETICAL

#	ALL SUBURBS	1980-1990 1990-2000	1990-2000 2000-2010
1	AFTON	3.78	(2.38)
2	ANDOVER	(0.32)	0.51
3	ANOKA	0.05	(0.11)
4	APPLE VALLEY	(0.32)	0.36
5	ARDEN HILLS	(1.00)	1.36
6	BAYPORT	(0.32)	1.02
7	BAYTOWN TWP.	1.80	2.31
8	BELLE PLAINE	0.08	0.05
9	BELLE PLAINE TWP.	0.32	(0.68)
10	BENTON TWP.	0.65	0.82
11	BETHEL	0.28	0.05
12	BIRCHWOOD VILLAGE	1.34	1.58
13	BLAINE	(0.18)	0.22
14	BLAKELEY TWP.	no data	0.61
15	BLOOMINGTON	(0.12)	(0.26)
16	BROOKLYN CENTER	(0.25)	0.10
17	BROOKLN PARK	0.16	(0.28)
18	BURNS TWP.*	(1.28)	no data
19	BURNSVILLE	(0.04)	(0.41)
20	CAMDEN TWP.	(0.81)	1.10
21	CARVER	(0.36)	0.23
22	CASTLE ROCK TWP.	0.23	0.89
23	CEDAR LAKE TWP.	5.36	(4.11)
24	CENTERVILLE	0.65	(0.03)
25	CHAMPLIN	(0.19)	0.12
26	CHANHASSEN	(0.15)	0.19
27	CHASKA*	(0.05)	(0.05)
28	CHASKA TWP.*	(1.08)	no data
29	CIRCLE PINES	1.63	0.71
30	COATES	0.62	0.41
31	COLOGNE	0.18	0.52
32	COLUMBIA HEIGHTS	(0.26)	0.32
33	COLUMBUS*	0.47	(1.29)
34	COON RAPIDS	(0.23)	(0.24)
35	CORCORAN	1.23	1.28
36	COTTAGE GROVE	0.26	0.16
37	CREDIT RIVER TWP.	(0.57)	0.43
38	CRYSTAL	(0.04)	(0.22)
39	DAHLGREN TWP.	(0.07)	1.21
40	DAYTON	(3.66)	2.36
41	DEEPHAVEN	(2.41)	3.40
42	DELLWOOD	2.47	no data
43	DENMARK TWP.	0.03	(0.93)
44	DOUGLAS TWP.	2.63	no data
45	EAGAN	(0.20)	(0.37)
46	EAST BETHEL	(0.43)	1.82
47	EDEN PRAIRIE	(0.13)	(0.38)
48	EDINA	0.00	(0.18)
49	ELKO NEW MARKET*	no data	2.94
50	EMPIRE TWP.	(0.31)	0.38

51	EUREKA TWP.	0.74	0.93
52	EXCELSIOR	(0.03)	(0.10)
53	FALCON HEIGHTS	(0.10)	0.29
54	FARMINGTON	0.14	0.25
55	FOREST LAKE*	0.05	0.17
56	FOREST LAKE TWP.*	0.51	no data
57	FRIDLEY	(0.05)	(0.05)
58	GEM LAKE	(0.12)	1.43
59	GOLDEN VALLEY	(0.17)	0.15
60	GRANT*	no data	no data
61	GREENFIELD	(0.27)	0.38
62	GREENVALE TWP.	0.19	(0.03)
63	GREENWOOD	(0.44)	0.10
64	GREY CLOUD ISLAND TWP.	(0.95)	no data
65	HAM LAKE	0.00	0.23
66	HAMBURG	0.20	(0.07)
67	HAMPTON	(0.05)	0.51
68	HAMPTON TWP.	(0.27)	1.06
69	HANCOCK	1.83	(1.34)
70	HANOVER	no data	no data
71	HASSAN TWP.	1.65	(0.26)
72	HASTINGS	(0.00)	(0.08)
73	HELENA TWP.	(0.17)	0.74
74	HILLTOP	(0.16)	0.02
75	HOLLYWOOD TWP.	1.14	(0.26)
76	HOPKINS	0.07	(0.36)
77	HUGO	(0.12)	2.03
78	INDEPENDENCE	(1.32)	(0.07)
79	INVER GROVE	0.13	(0.33)
80	JACKSON TWP.	1.56	(0.46)
81	JORDAN	0.66	(0.61)
82	LAKE ELMO	(0.75)	0.35
83	LAKE ST. CROIX BEACH	(0.09)	1.04
84	LAKELAND	0.75	0.10
85	LAKELAND SHORES	no data	no data
86	LAKETOWN	(0.13)	0.91
87	LAKEVILLE	(0.25)	0.17
88	LAND FALL	(1.07)	no data
89	LAUDERDALE	(0.06)	0.00
90	LEXINGTON	(0.43)	0.22
91	LILYDALE	0.24	(0.67)
92	LINO LAKES	(0.38)	0.63
93	LINWOOD TWP.	(0.39)	1.07
94	LITTLE CANADA	(0.19)	(0.11)
95	LONG LAKE	(0.23)	0.30
96	LORETTO	(0.20)	0.47
97	LOUISVILLE	0.08	(1.03)
98	MAHOTMEDI	(0.30)	0.44
99	MAPLE GROVE	0.09	0.13
100	MAPLE PLAIN	(0.53)	(0.07)
101	MAPLEWOOD	(0.02)	(0.21)
102	MARINE ON ST. CROIX	(0.08)	(0.36)
103	MASHAN TWP.	(0.52)	0.32
104	MAY TWP.	(3.92)	1.01

105	MAYER	0.32	(0.12)
106	MEDICINE LAKE	(0.00)	0.57
107	MEDINA	(1.50)	0.83
108	MENDOTA	(2.53)	0.86
109	MENDOTA HEIGHTS	0.09	(0.48)
110	MIESVILLE	0.50	(0.14)
111	MINNEAPOLIS	0.02	(0.00)
112	MINNETONKA BEACH	(2.88)	0.84
113	MINNETONKA	(0.04)	(0.61)
114	MINNETRISTA	1.44	(2.17)
115	MOUND	(0.48)	0.09
116	MOUNDS VIEW	(0.10)	(0.09)
117	NEW BRIGHTON	0.09	(0.25)
118	NEW GERMANY	0.63	0.80
119	NEW HOPE	(0.13)	(0.26)
120	NEW MARKET*	0.83	(0.51)
121	NEW MARKET TWP.	0.03	no data
122	NEW PRAGUE	no data	no data
123	NEW SCANDIA*	0.02	no data
124	NEW TRIER	no data	1.29
125	NEWPORT	(0.11)	(0.33)
126	NINIGER TWP.	(1.72)	0.48
127	NORTH OAKS	no data	3.18
128	NORTH ST. PAUL	(0.04)	(0.19)
129	NORTHFIELD	no data	no data
130	NORWOOD YOUNG AMERICA*	0.49	(0.19)
131	OAK GROVE*	(0.15)	1.28
132	OAK PARK HEIGHTS	(0.25)	0.47
133	OAKDALE	0.29	(0.29)
134	ORONO	(0.10)	0.49
135	OSSEO	(0.03)	(0.22)
136	PINE SPRINGS	no data	no data
137	PLYMOUTH	0.04	(0.38)
138	PRIOR LAKE	(0.34)	(0.02)
139	RAMSEY	0.38	0.08
140	RANDOLPH	0.67	0.85
141	RANDOLPH TWP.	no data	no data
142	RAVENA TWP.	(0.35)	(0.91)
143	RICHFIELD	0.13	(0.37)
144	ROBBINSDALE	(0.31)	0.05
145	ROCKFORD	no data	no data
146	ROGERS	(0.18)	1.26
147	ROSEMOUNT	0.00	0.34
148	ROSEVILLE	0.03	(0.32)
149	SAN FRANCISCO TWP.	2.00	no data
150	SAND CREEK TWP.	(0.61)	0.43
151	SAVAGE	(0.43)	0.44
152	SCIOTA TWP.	(0.31)	1.08
153	SHAKOPEE	0.19	(0.19)
154	SHOREVIEW	(0.02)	(0.15)
155	SHOREWOOD	1.36	(1.26)
156	SOUTH ST. PAUL	0.00	0.03
157	SPRING LAKE PARK	0.27	(0.06)
158	SPRING LAKE TWP.	0.02	(0.89)

159	SPRING PARK	(0.06)	0.22
160	ST. ANTHONY	0.92	(0.01)
161	ST. BONIFACIOUS	0.05	(0.91)
162	ST. FANCIS	(0.29)	(0.17)
163	ST. LAWRENCE TWP.	1.02	2.47
164	ST. LOUIS PARK	(0.16)	(0.09)
165	ST. MARYS POINT	no data	4.31
166	ST. PAUL	(0.03)	0.00
167	ST. PAUL PARK	(0.06)	(0.21)
168	STILLWATER	(0.05)	0.22
169	STILLWATER TWP.	1.32	(1.58)
170	SUNFISH LAKE	(3.32)	no data
171	TONKA BAY	(0.73)	0.92
172	VADNAIS HEIGHTS	(0.16)	(0.18)
173	VERMILLION	(0.50)	0.24
174	VERMILLION TWP.	0.11	0.13
175	VICTORIA	0.05	1.80
176	WACONIA	0.31	(0.78)
177	WACONIA TWP.	0.38	0.41
178	WATERFORD	(0.55)	0.16
179	WATERTOWN	0.56	0.12
180	WATERTOWN TWP.	0.32	(0.96)
181	WAYZATA	0.11	(0.37)
182	WEST LAKELAND TWP.	0.30	3.17
183	WEST ST. PAUL	(0.14)	0.02
184	WHITE BEAR LAKE	(0.25)	(0.11)
185	WHITE BEAR TWP.	(0.60)	0.53
186	WILLERNIE	0.14	(0.14)
187	WOODBURY	0.11	(0.59)
188	WOODLAND	0.66	3.11
189	YOUNG AMERICA*	(0.46)	(0.35)
190	YOUNG AMERICA TWP.	no data	no data
191	NOWTHEN*	no data	no data
192	SCANDIA*	no data	no data
	STRONG ACCELERATION OF INVESTMENT >1.00	17	27
	MODERATE ACCELERATION OF INVESTMENT .51 - 1.00	14	19
	WEAK ACCELERATION OF INVESTMENT .01 - .50	47	50
	MEDIAN.00	1	0
	WEAK ACCELERATION OF DISINVESTMENT (.01) - (.50)	73	54
	MODERATE ACCELERATION OF DISINVESTMENT (.51) - (1.00)	12	12
	STRONG ACCELERATION OF DISINVESTMENT <(1.00)	12	8
	NO DATA	16	22
		192	192

TABLE 15: HYPOTHESIS #1- MEDIAN HOME VALUE 1980 - Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	NORTHFIELD	no data
2	NOWTHEN*	no data
3	SCANDIA*	no data
4	NORTH OAKS	4.16
5	WOODLAND	3.80
6	DELLWOOD	3.44
7	MINNETONKA BEACH	3.19
8	GREENWOOD	2.14
9	DEEPHAVEN	1.90
10	PINE SPRINGS	1.70
11	ORONO	1.52
12	SUNFISH LAKE	1.52
13	TONKA BAY	1.39
14	WAYZATA	1.36
15	SHOREWOOD	1.14
16	BIRCHWOOD VILLAGE	1.10
17	EDINA	1.08
18	LAKELAND SHORES	1.01
19	MENDOTA HEIGHTS	0.87
20	MEDICINE LAKE	0.86
21	CHANHASSEN	0.78
22	MINNETRISTA	0.75
23	PLYMOUTH	0.73
24	EDEN PRAIRIE	0.70
25	MINNETONKA	0.64
26	GEM LAKE	0.57
27	GOLDEN VALLEY	0.55
28	PRIOR LAKE	0.45
29	VICTORIA	0.42
30	SPRING PARK	0.39
31	LONG LAKE	0.32
32	EAGAN	0.22
33	FALCON HEIGHTS	0.20
34	LAKETOWN	0.20
35	APPLE VALLEY	0.20
36	BLOOMINGTON	0.16
37	WOODBURY	0.11
38	SHOREVIEW	0.11
39	ARDEN HILLS	0.10
40	LAKELAND	0.09
41	MAPLE GROVE	0.09
42	NEW BRIGHTON	0.09
43	ROSEVILLE	0.08
44	MOUND	0.08
45	WHITE BEAR TWP.	0.07
46	NEW HOPE	0.06
47	ST. ANTHONY	0.05
48	BURNSVILLE	0.04
49	GRANT*	0.03
50	SAVAGE	0.02

51	FOREST LAKE TWP.*	0.01
52	ST. MARYS POINT	(0.01)
53	GREY CLOUD ISLAND TWP.	(0.02)
54	AFTON	(0.04)
55	WEST LAKELAND TWP.	(0.05)
56	EXCELSIOR	(0.06)
57	MAHOTMEDI	(0.07)
58	MARINE ON ST. CROIX	(0.08)
59	BROOKLN PARK	(0.11)
60	CREDIT RIVER TWP.	(0.13)
61	COTTAGE GROVE	(0.14)
62	FRIDLEY	(0.15)
63	WHITE BEAR LAKE	(0.15)
64	ANDOVER	(0.16)
65	RAMSEY	(0.18)
66	STILLWATER TWP.	(0.18)
67	ST. LOUIS PARK	(0.19)
68	CHAMPLIN	(0.21)
69	HOPKINS	(0.23)
70	RAVENA TWP.	(0.25)
71	NINIGER TWP.	(0.26)
72	RICHFIELD	(0.26)
73	STILLWATER	(0.27)
74	MEDINA	(0.27)
75	MAPLE PLAIN	(0.27)
76	WEST ST. PAUL	(0.27)
77	MAPLEWOOD	(0.33)
78	COON RAPIDS	(0.35)
79	SHAKOPEE	(0.35)
80	CIRCLE PINES	(0.37)
81	BROOKLYN CENTER	(0.37)
82	ANOKA	(0.38)
83	ROSEMOUNT	(0.38)
84	CRYSTAL	(0.38)
85	BAYPORT	(0.40)
86	NORTH ST. PAUL	(0.40)
87	WACONIA	(0.42)
88	OSSEO	(0.43)
89	ROBBINSDALE	(0.43)
90	SPRING LAKE PARK	(0.45)
91	LAKEVILLE	(0.46)
92	BAYTOWN TWP.	(0.46)
93	OAK GROVE*	(0.47)
94	MIESVILLE	(0.47)
95	ST. BONIFACIOUS	(0.48)
96	LAKE ELMO	(0.48)
97	HASTINGS	(0.48)
98	CENTERVILLE	(0.48)
99	LINO LAKES	(0.49)
100	OAKDALE	(0.49)
101	FARMINGTON	(0.51)
102	COLUMBIA HEIGHTS	(0.52)
103	NEWPORT	(0.52)

104	VADNAIS HEIGHTS	(0.52)
105	HAM LAKE	(0.57)
106	MOUNDS VIEW	(0.58)
107	INVER GROVE	(0.59)
108	MAY TWP.	(0.59)
109	LAUDERDALE	(0.61)
110	DAYTON	(0.61)
111	ROGERS	(0.62)
112	FOREST LAKE*	(0.62)
113	OAK PARK HEIGHTS	(0.63)
114	SOUTH ST. PAUL	(0.63)
115	LOUISVILLE	(0.64)
116	LAKE ST. CROIX BEACH	(0.65)
117	LORETTO	(0.65)
118	INDEPENDENCE	(0.65)
119	CORCORAN	(0.65)
120	MINNEAPOLIS	(0.67)
121	VERMILLION	(0.68)
122	EMPIRE TWP.	(0.68)
123	HANOVER	(0.68)
124	GREENFIELD	(0.69)
125	ST. PAUL	(0.69)
126	COLUMBUS*	(0.72)
127	MASHAN TWP.	(0.73)
128	ST. PAUL PARK	(0.75)
129	HAMBURG	(0.76)
130	BLAINE	(0.77)
131	HASSAN TWP.	(0.77)
132	COLOGNE	(0.81)
133	HUGO	(0.81)
134	YOUNG AMERICA*	(0.82)
135	NEW PRAGUE	(0.82)
136	DENMARK TWP.	(0.82)
137	NEW SCANDIA*	(0.84)
138	MAYER	(0.84)
139	MENDOTA	(0.86)
140	CHASKA TWP.*	(0.86)
141	ELKO NEW MARKET*	(0.86)
142	CARVER	(0.88)
143	WILLERNIE	(0.89)
144	SPRING LAKE TWP.	(0.89)
145	CHASKA*	(0.91)
146	EUREKA TWP.	(0.91)
147	LITTLE CANADA	(0.94)
148	LINWOOD TWP.	(0.96)
149	EAST BETHEL	(0.97)
150	BELLE PLAINE	(0.99)
151	NEW GERMANY	(0.99)
152	RANDOLPH TWP.	(0.99)
153	HAMPTON	(1.01)
154	NORWOOD YOUNG AMERICA*	(1.02)
155	COATES	(1.07)
156	BURNS TWP.*	(1.09)
157	CASTLE ROCK TWP.	(1.11)

158	NEW MARKET*	(1.13)
159	WACONIA TWP.	(1.14)
160	WATERTOWN	(1.16)
161	WATERFORD	(1.19)
162	JACKSON TWP.	(1.20)
163	VERMILLION TWP.	(1.21)
164	LEXINGTON	(1.23)
165	JORDAN	(1.24)
166	CEDAR LAKE TWP.	(1.25)
167	ST. FANCIS	(1.31)
168	NEW MARKET TWP.	(1.32)
169	RANDOLPH	(1.32)
170	HAMPTON TWP.	(1.36)
171	WATERTOWN TWP.	(1.39)
172	SAND CREEK TWP.	(1.42)
173	DAHLGREN TWP.	(1.42)
174	SAN FRANCISCO TWP.	(1.42)
175	HELENA TWP.	(1.46)
176	NEW TRIER	(1.46)
177	BETHEL	(1.54)
178	ROCKFORD	(1.56)
179	LAND FALL	(1.57)
180	DOUGLAS TWP.	(1.60)
181	GREENVALE TWP.	(1.72)
182	YOUNG AMERICA TWP.	(1.78)
183	ST. LAWRENCE TWP.	(1.83)
184	HANCOCK	(1.89)
185	SCIOTA TWP.	(1.91)
186	HOLLYWOOD TWP.	(2.07)
187	BENTON TWP.	(2.11)
188	CAMDEN TWP.	(2.11)
189	BLAKELEY TWP.	(2.18)
190	LILYDALE	(2.24)
191	BELLE PLAINE TWP.	(2.27)
192	HILLTOP	(2.32)
	STRONG LEVEL OF INVESTMENT >1.00	15
	MODERATE LEVEL OF INVESTMENT .51 - 1.00	9
	WEAK LEVEL OF INVESTMENT .01 - .50	24
	MEDIAN .00	0
	WEAK LEVEL OF DISINVESTMENT (.01) - (.50)	49
	MODERATE LEVEL OF DISINVESTMENT (.51) - (1.00)	52
	STRONG LEVEL OF DISINVESTMENT <(1.00)	40
	NO DATA	3
	TOTAL	192

TABLE 16: HYPOTHESIS #1- MEDIAN HOME VALUE 1990 - Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	NOWTHEN*	no data
2	SCANDIA*	no data
3	SUNFISH LAKE	5.88
4	MINNETONKA BEACH	5.34
5	WOODLAND	5.26
6	NORTH OAKS	4.21
7	DELLWOOD	4.09
8	MEDICINE LAKE	2.42
9	GREENWOOD	2.35
10	LILYDALE	2.33
11	ORONO	2.10
12	TONKA BAY	1.93
13	EDINA	1.66
14	DEEPHAVEN	1.50
15	MENDOTA HEIGHTS	1.50
16	MINNETRISTA	1.41
17	PINE SPRINGS	1.37
18	SHOREWOOD	1.37
19	STILLWATER TWP.	1.37
20	BIRCHWOOD VILLAGE	1.33
21	GRANT*	1.24
22	WEST LAKELAND TWP.	1.21
23	WAYZATA	1.19
24	LAND FALL	1.18
25	LAKELAND SHORES	1.16
26	AFTON	1.05
27	VICTORIA	1.01
28	LAKE ELMO	0.95
29	PLYMOUTH	0.93
30	BAYTOWN TWP.	0.90
31	CHANHASSEN	0.83
32	ARDEN HILLS	0.82
33	MAY TWP.	0.80
34	EDEN PRAIRIE	0.79
35	MEDINA	0.78
36	DENMARK TWP.	0.76
37	MINNETONKA	0.74
38	INDEPENDENCE	0.57
39	SHOREVIEW	0.49
40	WOODBURY	0.47
41	GOLDEN VALLEY	0.47
42	LAKETOWN	0.45
43	HANOVER	0.44
44	BURNSVILLE	0.44
45	MARINE ON ST. CROIX	0.43
46	WACONIA TWP.	0.43
47	CORCORAN	0.38
48	NEW MARKET TWP.	0.37
49	EAGAN	0.36
50	MASHAN TWP.	0.31
51	FALCON HEIGHTS	0.31

52	MAHOTMEDI	0.31
53	LONG LAKE	0.30
54	CEDAR LAKE TWP.	0.29
55	JACKSON TWP.	0.29
56	NEW BRIGHTON	0.29
57	SPRING PARK	0.29
58	FOREST LAKE TWP.*	0.28
59	APPLE VALLEY	0.27
60	CREDIT RIVER TWP.	0.27
61	SPRING LAKE TWP.	0.26
62	SAN FRANCISCO TWP.	0.26
63	EUREKA TWP.	0.24
64	PRIOR LAKE	0.24
65	NEW SCANDIA*	0.22
66	LITTLE CANADA	0.22
67	ST. ANTHONY	0.20
68	GREENVALE TWP.	0.19
69	WHITE BEAR TWP.	0.19
70	BLOOMINGTON	0.18
71	HUGO	0.18
72	LOUISVILLE	0.17
73	GEM LAKE	0.17
74	VADNAIS HEIGHTS	0.17
75	ROSEVILLE	0.16
76	NINIGER TWP.	0.15
77	LAKEVILLE	0.15
78	ANDOVER	0.14
79	EXCELSIOR	0.14
80	MAPLE GROVE	0.14
81	SAVAGE	0.12
82	RAVENA TWP.	0.12
83	HAMPTON TWP.	0.11
84	CHASKA TWP.*	0.11
85	HASSAN TWP.	0.11
86	ST. MARYS POINT	0.10
87	DAHLGREN TWP.	0.08
88	INVER GROVE	0.08
89	CASTLE ROCK TWP.	0.07
90	NEW HOPE	0.06
91	WATERTOWN TWP.	0.06
92	RANDOLPH TWP.	0.05
93	GREY CLOUD ISLAND TWP.	0.05
94	LINO LAKES	0.04
95	GREENFIELD	0.04
96	LAKELAND	0.03
97	SAND CREEK TWP.	0.03
98	COLUMBUS*	0.01
99	ROSEMOUNT	0.01
100	HANCOCK	0.00
101	MAPLE PLAIN	(0.01)
102	DAYTON	(0.01)
103	STILLWATER	(0.02)
104	CHASKA*	(0.04)

105	CHAMPLIN	(0.06)
106	BROOKLN PARK	(0.06)
107	BURNS TWP.*	(0.06)
108	VERMILLION TWP.	(0.06)
109	HAM LAKE	(0.06)
110	MAPLEWOOD	(0.07)
111	OAKDALE	(0.07)
112	WHITE BEAR LAKE	(0.07)
113	HELENA TWP.	(0.07)
114	NORTHFIELD	(0.07)
115	ROCKFORD	(0.07)
116	COTTAGE GROVE	(0.08)
117	MOUND	(0.08)
118	OAK GROVE*	(0.08)
119	RAMSEY	(0.08)
120	ROGERS	(0.08)
121	CENTERVILLE	(0.08)
122	MOUNDS VIEW	(0.09)
123	CAMDEN TWP.	(0.09)
124	ST. LOUIS PARK	(0.09)
125	EMPIRE TWP.	(0.10)
126	FRIDLEY	(0.11)
127	HOPKINS	(0.11)
128	SHAKOPEE	(0.11)
129	WACONIA	(0.13)
130	OAK PARK HEIGHTS	(0.13)
131	RICHFIELD	(0.14)
132	WEST ST. PAUL	(0.14)
133	ST. BONIFACIOUS	(0.16)
134	MIESVILLE	(0.16)
135	HASTINGS	(0.17)
136	LORETTO	(0.18)
137	ST. LAWRENCE TWP.	(0.19)
138	COON RAPIDS	(0.19)
139	CARVER	(0.20)
140	SPRING LAKE PARK	(0.20)
141	FOREST LAKE*	(0.23)
142	NORTH ST. PAUL	(0.24)
143	BAYPORT	(0.25)
144	FARMINGTON	(0.25)
145	LINWOOD TWP.	(0.25)
146	BLAINE	(0.25)
147	ANOKA	(0.28)
148	BENTON TWP.	(0.28)
149	EAST BETHEL	(0.28)
150	BROOKLYN CENTER	(0.29)
151	OSSEO	(0.29)
152	VERMILLION	(0.32)
153	CRYSTAL	(0.33)
154	DOUGLAS TWP.	(0.33)
155	ROBBINSDALE	(0.35)
156	WATERFORD	(0.37)
157	HOLLYWOOD TWP.	(0.38)
158	LAUDERDALE	(0.38)

159	YOUNG AMERICA TWP.	(0.39)
160	CIRCLE PINES	(0.40)
161	WATERTOWN	(0.40)
162	COLUMBIA HEIGHTS	(0.41)
163	NEWPORT	(0.42)
164	ST. PAUL PARK	(0.44)
165	SOUTH ST. PAUL	(0.48)
166	LEXINGTON	(0.48)
167	MINNEAPOLIS	(0.48)
168	LAKE ST. CROIX BEACH	(0.50)
169	YOUNG AMERICA*	(0.50)
170	ST. PAUL	(0.51)
171	COATES	(0.51)
172	MAYER	(0.52)
173	NEW MARKET*	(0.52)
174	ELKO NEW MARKET*	(0.52)
175	BELLE PLAINE	(0.54)
176	JORDAN	(0.54)
177	NEW PRAGUE	(0.56)
178	COLOGNE	(0.58)
179	SCIOTA TWP.	(0.59)
180	ST. FANCIS	(0.59)
181	BELLE PLAINE TWP.	(0.60)
182	NORWOOD YOUNG AMERICA*	(0.61)
183	WILLERNIE	(0.61)
184	HAMPTON	(0.62)
185	NEW TRIER	(0.63)
186	RANDOLPH	(0.64)
187	BLAKELEY TWP.	(0.73)
188	HAMBURG	(0.76)
189	BETHEL	(0.79)
190	HILLTOP	(0.85)
191	MENDOTA	(0.87)
192	NEW GERMANY	(1.01)

STRONG LEVEL OF INVESTMENT >1.00	25
MODERATE LEVEL OF INVESTMENT .51 - 1.00	11
WEAK LEVEL OF INVESTMENT .01 - .50	62
MEDIAN .00	0
WEAK LEVEL OF DISINVESTMENT (.01) - (.50)	68
MODERATE LEVEL OF DISINVESTMENT (.51) - (1.00)	23
STRONG LEVEL OF DISINVESTMENT <(1.00)	1
NO DATA	2
TOTAL	192

TABLE 17: HYPOTHESIS #1- MEDIAN HOME VALUE 2000 - Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	NEW PRAGUE	no data
2	YOUNG AMERICA TWP.	no data
3	NOWTHEN*	no data
4	SCANDIA*	no data
5	MINNETONKA BEACH	6.12
6	SUNFISH LAKE	5.50
7	WOODLAND	4.96
8	DELLWOOD	3.80
9	NORTH OAKS	3.76
10	GREENWOOD	3.29
11	ORONO	2.53
12	TONKA BAY	2.33
13	MEDICINE LAKE	2.19
14	DEEPHAVEN	2.06
15	WEST LAKELAND TWP.	1.98
16	WAYZATA	1.94
17	MINNETRISTA	1.89
18	BAYTOWN TWP.	1.84
19	STILLWATER TWP.	1.76
20	PINE SPRINGS	1.57
21	SHOREWOOD	1.56
22	EDINA	1.47
23	GRANT*	1.46
24	LILYDALE	1.43
25	INDEPENDENCE	1.29
26	MAY TWP.	1.28
27	NEW MARKET TWP.	1.21
28	VICTORIA	1.20
29	LAKE ELMO	1.16
30	AFTON	1.16
31	LAKELAND SHORES	1.05
32	GREENFIELD	0.98
33	CHANHASSEN	0.95
34	JACKSON TWP.	0.94
35	MEDINA	0.93
36	MENDOTA HEIGHTS	0.93
37	BIRCHWOOD VILLAGE	0.89
38	GREENVALE TWP.	0.85
39	MARINE ON ST. CROIX	0.83
40	SPRING LAKE TWP.	0.82
41	HAMPTON TWP.	0.82
42	MASHAN TWP.	0.78
43	EDEN PRAIRIE	0.78
44	PLYMOUTH	0.77
45	EUREKA TWP.	0.77
46	DENMARK TWP.	0.76
47	SPRING PARK	0.72
48	SAN FRANCISCO TWP.	0.70
49	MINNETONKA	0.67
50	CEDAR LAKE TWP.	0.66
51	WACONIA TWP.	0.63

52	CORCORAN	0.63
53	ROGERS	0.62
54	EXCELSIOR	0.61
55	RANDOLPH TWP.	0.61
56	NORTHFIELD	0.60
57	HANOVER	0.58
58	LAKETOWN	0.54
59	LOUISVILLE	0.53
60	MAHOTMEDI	0.53
61	WATERTOWN TWP.	0.52
62	CASTLE ROCK TWP.	0.50
63	NEW SCANDIA*	0.49
64	NINIGER TWP.	0.48
65	PRIOR LAKE	0.46
66	BELLE PLAINE TWP.	0.46
67	HANCOCK	0.46
68	DAHLGREN TWP.	0.45
69	WOODBURY	0.45
70	RAVENA TWP.	0.44
71	DOUGLAS TWP.	0.43
72	HELENA TWP.	0.42
73	HASSAN TWP.	0.41
74	ARDEN HILLS	0.41
75	CREDIT RIVER TWP.	0.41
76	LAKEVILLE	0.39
77	SAVAGE	0.36
78	FOREST LAKE TWP.*	0.36
79	SCIOTA TWP.	0.33
80	EAGAN	0.31
81	VERMILLION TWP.	0.30
82	LINO LAKES	0.29
83	CHASKA TWP.*	0.28
84	SAND CREEK TWP.	0.28
85	FALCON HEIGHTS	0.27
86	CHASKA*	0.26
87	CAMDEN TWP.	0.26
88	GOLDEN VALLEY	0.25
89	EMPIRE TWP.	0.24
90	GEM LAKE	0.24
91	ELKO NEW MARKET*	0.24
92	ANDOVER	0.23
93	WHITE BEAR TWP.	0.23
94	YOUNG AMERICA*	0.22
95	BURNS TWP.*	0.21
96	SHOREVIEW	0.21
97	STILLWATER	0.20
98	BURNSVILLE	0.19
99	MAPLE GROVE	0.18
100	COLUMBUS*	0.17
101	APPLE VALLEY	0.17
102	GREY CLOUD ISLAND TWP.	0.17
103	ROSEMOUNT	0.17
104	ST. BONIFACIOUS	0.16
105	LORETTO	0.15

106	CARVER	0.14
107	WACONIA	0.13
108	LAKELAND	0.12
109	LONG LAKE	0.12
110	OAK GROVE*	0.12
111	LITTLE CANADA	0.12
112	HAM LAKE	0.11
113	HUGO	0.09
114	OAK PARK HEIGHTS	0.09
115	BLOOMINGTON	0.07
116	BENTON TWP.	0.06
117	ROCKFORD	0.06
118	FARMINGTON	0.06
119	ST. ANTHONY	0.05
120	INVER GROVE	0.04
121	NEW BRIGHTON	0.03
122	DAYTON	0.03
123	ST. MARYS POINT	0.03
124	VADNAIS HEIGHTS	0.02
125	RAMSEY	0.02
126	ROSEVILLE	0.02
127	MAPLE PLAIN	0.01
128	CENTERVILLE	0.00
129	HOLLYWOOD TWP.	(0.00)
130	MIESVILLE	(0.01)
131	SHAKOPEE	(0.01)
132	ST. LAWRENCE TWP.	(0.02)
133	MOUND	(0.03)
134	EAST BETHEL	(0.05)
135	CHAMPLIN	(0.06)
136	COTTAGE GROVE	(0.07)
137	OAKDALE	(0.07)
138	NEW HOPE	(0.08)
139	ST. LOUIS PARK	(0.09)
140	LINWOOD TWP.	(0.10)
141	HOPKINS	(0.13)
142	MAPLEWOOD	(0.14)
143	WATERFORD	(0.14)
144	HASTINGS	(0.14)
145	BAYPORT	(0.15)
146	BROOKLN PARK	(0.15)
147	WHITE BEAR LAKE	(0.17)
148	BELLE PLAINE	(0.17)
149	COLOGNE	(0.18)
150	RICHFIELD	(0.19)
151	ST. FANCIS	(0.19)
152	JORDAN	(0.21)
153	MOUNDS VIEW	(0.22)
154	BLAINE	(0.23)
155	WATERTOWN	(0.23)
156	COON RAPIDS	(0.24)
157	WEST ST. PAUL	(0.25)
158	VERMILLION	(0.26)

159	NEW TRIER	(0.27)
160	FOREST LAKE*	(0.27)
161	BLAKELEY TWP.	(0.28)
162	NEW MARKET*	(0.28)
163	LAKE ST. CROIX BEACH	(0.29)
164	FRIDLEY	(0.30)
165	HAMPTON	(0.30)
166	SPRING LAKE PARK	(0.31)
167	ANOKA	(0.32)
168	NORTH ST. PAUL	(0.32)
169	MAYER	(0.36)
170	CIRCLE PINES	(0.36)
171	OSSEO	(0.37)
172	HAMBURG	(0.39)
173	MINNEAPOLIS	(0.40)
174	LAUDERDALE	(0.40)
175	CRYSTAL	(0.41)
176	LAND FALL	(0.41)
177	NEWPORT	(0.41)
178	ROBBINSDALE	(0.42)
179	NORWOOD YOUNG AMERICA*	(0.43)
180	SOUTH ST. PAUL	(0.44)
181	COATES	(0.45)
182	ST. PAUL PARK	(0.49)
183	WILLERNIE	(0.49)
184	BROOKLYN CENTER	(0.51)
185	ST. PAUL	(0.51)
186	LEXINGTON	(0.53)
187	RANDOLPH	(0.54)
188	COLUMBIA HEIGHTS	(0.54)
189	BETHEL	(0.54)
190	MENDOTA	(0.57)
191	NEW GERMANY	(0.73)
192	HILLTOP	(1.21)

STRONG LEVEL OF INVESTMENT >1.00	27
MODERATE LEVEL OF INVESTMENT .51 - 1.00	30
WEAK LEVEL OF INVESTMENT .01 - .50	67
MEDIAN .00	0
WEAK LEVEL OF DISINVESTMENT (.01) - (.50)	55
MODERATE LEVEL OF DISINVESTMENT (.51) - (1.00)	8
STRONG LEVEL OF DISINVESTMENT <(1.00)	1
NO DATA	4
TOTAL	192

TABLE 18: HYPOTHESIS #1- MEDIAN HOME VALUE 2010 - Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	BURNS TWP.*	no data
2	CHASKA TWP.*	no data
3	FOREST LAKE TWP.*	no data
4	NEW MARKET TWP.	no data
5	NEW SCANDIA*	no data
6	YOUNG AMERICA TWP.	no data
7	MINNETONKA BEACH	5.41
8	SUNFISH LAKE	4.61
9	WOODLAND	4.17
10	GREENWOOD	4.12
11	MEDICINE LAKE	3.50
12	DELLWOOD	2.99
13	ORONO	2.95
14	NORTH OAKS	2.79
15	TONKA BAY	2.75
16	DEEPHAVEN	2.50
17	MINNETRISTA	1.83
18	DENMARK TWP.	1.66
19	MEDINA	1.65
20	BAYTOWN TWP.	1.64
21	NEW MARKET*	1.63
22	INDEPENDENCE	1.61
23	CEDAR LAKE TWP.	1.58
24	GREENFIELD	1.49
25	WEST LAKELAND TWP.	1.42
26	PINE SPRINGS	1.38
27	AFTON	1.36
28	SHOREWOOD	1.35
29	GRANT*	1.35
30	WAYZATA	1.33
31	MAY TWP.	1.30
32	STILLWATER TWP.	1.26
33	CREDIT RIVER TWP.	1.25
34	EDINA	1.13
35	VICTORIA	1.08
36	LOUISVILLE	1.08
37	ST. LAWRENCE TWP.	1.07
38	SPRING LAKE TWP.	1.05
39	LAKE ELMO	1.04
40	HASSAN TWP.	0.96
41	HELENA TWP.	0.95
42	HANOVER	0.93
43	DAHLGREN TWP.	0.92
44	SAND CREEK TWP.	0.91
45	SAN FRANCISCO TWP.	0.88
46	WACONIA	0.88
47	MENDOTA HEIGHTS	0.83
48	BELLE PLAINE TWP.	0.83
49	LAKETOWN	0.83
50	BIRCHWOOD VILLAGE	0.81
51	CHANHASSEN	0.78

52	NINIGER TWP.	0.78
53	LAKELAND SHORES	0.78
54	MARINE ON ST. CROIX	0.77
55	EUREKA TWP.	0.77
56	HAMPTON TWP.	0.75
57	MASHAN TWP.	0.75
58	EXCELSIOR	0.73
59	WATERTOWN TWP.	0.72
60	SCANDIA*	0.71
61	HANCOCK	0.67
62	RANDOLPH TWP.	0.67
63	GREENVALE TWP.	0.65
64	MAHOTMEDI	0.64
65	DOUGLAS TWP.	0.62
66	SPRING PARK	0.60
67	NOWTHEN*	0.60
68	EDEN PRAIRIE	0.59
69	CAMDEN TWP.	0.57
70	LILYDALE	0.57
71	HOLLYWOOD TWP.	0.56
72	BLAKELEY TWP.	0.54
73	YOUNG AMERICA*	0.53
74	MINNETONKA	0.52
75	BENTON TWP.	0.50
76	PLYMOUTH	0.50
77	VERMILLION TWP.	0.49
78	CORCORAN	0.48
79	CASTLE ROCK TWP.	0.45
80	RAVENA TWP.	0.37
81	GREY CLOUD ISLAND TWP.	0.36
82	HAM LAKE	0.35
83	PRIOR LAKE	0.35
84	ROGERS	0.30
85	ST. MARYS POINT	0.30
86	FALCON HEIGHTS	0.30
87	WOODBURY	0.28
88	ELKO NEW MARKET*	0.25
89	LINO LAKES	0.24
90	COLUMBUS*	0.22
91	WATERFORD	0.22
92	ARDEN HILLS	0.21
93	SAVAGE	0.21
94	GEM LAKE	0.19
95	GOLDEN VALLEY	0.19
96	EMPIRE TWP.	0.18
97	SCIOTA TWP.	0.17
98	CARVER	0.17
99	LAKEVILLE	0.17
100	LONG LAKE	0.16
101	OAK GROVE*	0.16
102	WHITE BEAR TWP.	0.16
103	MAPLE GROVE	0.09
104	ANDOVER	0.09
105	STILLWATER	0.08

106	SHOREVIEW	0.07
107	EAGAN	0.06
108	HUGO	0.05
109	FOREST LAKE*	0.03
110	ROSEMOUNT	0.02
111	WACONIA	(0.00)
112	CHASKA*	(0.01)
113	NORTHFIELD	(0.02)
114	DAYTON	(0.03)
115	ST. ANTHONY	(0.03)
116	ST. BONIFACIOUS	(0.04)
117	JACKSON TWP.	(0.06)
118	LAKELAND	(0.06)
119	MOUND	(0.08)
120	ST. LOUIS PARK	(0.08)
121	CENTERVILLE	(0.08)
122	BLOOMINGTON	(0.09)
123	SHAKOPEE	(0.09)
124	APPLE VALLEY	(0.09)
125	BURNSVILLE	(0.09)
126	MAPLE PLAIN	(0.09)
127	ROSEVILLE	(0.10)
128	LINWOOD TWP.	(0.11)
129	NEW BRIGHTON	(0.11)
130	VADNAIS HEIGHTS	(0.12)
131	EAST BETHEL	(0.12)
132	INVER GROVE	(0.13)
133	CHAMPLIN	(0.13)
134	RAMSEY	(0.13)
135	LORETTO	(0.14)
136	COTTAGE GROVE	(0.16)
137	FARMINGTON	(0.16)
138	MINNEAPOLIS	(0.17)
139	BAYPORT	(0.18)
140	HOPKINS	(0.18)
141	OAK PARK HEIGHTS	(0.18)
142	BROOKLN PARK	(0.19)
143	MAPLEWOOD	(0.20)
144	WHITE BEAR LAKE	(0.20)
145	LAKE ST. CROIX BEACH	(0.22)
146	NEW HOPE	(0.22)
147	RICHFIELD	(0.23)
148	LITTLE CANADA	(0.23)
149	MAYER	(0.24)
150	NEW TRIER	(0.24)
151	OAKDALE	(0.25)
152	BLAINE	(0.25)
153	CIRCLE PINES	(0.26)
154	WEST ST. PAUL	(0.26)
155	OSSEO	(0.28)
156	COLOGNE	(0.28)
157	MENDOTA	(0.29)
158	RANDOLPH	(0.29)

159	HAMPTON	(0.30)
160	NEW PRAGUE	(0.30)
161	HASTINGS	(0.30)
162	NORTH ST. PAUL	(0.31)
163	WATERTOWN	(0.31)
164	NEWPORT	(0.31)
165	MOUNDS VIEW	(0.32)
166	JORDAN	(0.33)
167	ST. PAUL	(0.34)
168	FRIDLEY	(0.34)
169	COATES	(0.34)
170	BETHEL	(0.35)
171	COON RAPIDS	(0.36)
172	VERMILLION	(0.36)
173	ANOKA	(0.36)
174	ROBBINSDALE	(0.37)
175	SOUTH ST. PAUL	(0.38)
176	ST. FANCIS	(0.40)
177	SPRING LAKE PARK	(0.40)
178	BELLE PLAINE	(0.40)
179	LAUDERDALE	(0.43)
180	CRYSTAL	(0.44)
181	MIESVILLE	(0.44)
182	WILLERNIE	(0.46)
183	ST. PAUL PARK	(0.46)
184	LEXINGTON	(0.47)
185	COLUMBIA HEIGHTS	(0.49)
186	HAMBURG	(0.50)
187	BROOKLYN CENTER	(0.54)
188	NORWOOD YOUNG AMERICA*	(0.57)
189	NEW GERMANY	(0.58)
190	ROCKFORD	(1.33)
191	LAND FALL	(1.73)
192	HILLTOP	(1.74)

STRONG LEVEL OF INVESTMENT >1.00	33
MODERATE LEVEL OF INVESTMENT .51 - 1.00	36
WEAK LEVEL OF INVESTMENT .01 - .50	35
MEDIAN .00	0
WEAK LEVEL OF DISINVESTMENT (.01) - (.50)	76
MODERATE LEVEL OF DISINVESTMENT (.51) - (1.00)	3
STRONG LEVEL OF DISINVESTMENT <(1.00)	3
NO DATA	6
TOTAL	192

TABLE 19: HYPOTHESIS #1- MEDIAN GROSS RENT 1980 - Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	BLAKELEY TWP.	no data
2	ELKO NEW MARKET*	no data
3	HANOVER	no data
4	LAKELAND SHORES	no data
5	NEW TRIER	no data
6	NORTH OAKS	no data
7	NORTHFIELD	no data
8	PINE SPRINGS	no data
9	RANDOLPH TWP.	no data
10	ST. MARYS POINT	no data
11	NOWTHEN*	no data
12	SCANDIA*	no data
13	CIRCLE PINES	3.72
14	MAPLE GROVE	3.67
15	LILYDALE	3.19
16	DELLWOOD	2.93
17	SHOREWOOD	2.92
18	TONKA BAY	2.82
19	CEDAR LAKE TWP.	2.62
20	COTTAGE GROVE	2.52
21	CREDIT RIVER TWP.	2.16
22	OAK GROVE*	2.16
23	EDINA	2.08
24	FOREST LAKE TWP.*	2.08
25	EAST BETHEL	1.98
26	MINNETRISTA	1.88
27	ST. ANTHONY	1.87
28	STILLWATER TWP.	1.62
29	SAN FRANCISCO TWP.	1.59
30	AFTON	1.54
31	MENDOTA HEIGHTS	1.54
32	DEEPHAVEN	1.45
33	ORONO	1.45
34	EDEN PRAIRIE	1.44
35	MAHOTMEDI	1.40
36	DOUGLAS TWP.	1.39
37	GREENWOOD	1.39
38	LINO LAKES	1.39
39	WEST LAKELAND TWP.	1.39
40	MINNETONKA	1.33
41	ANDOVER	1.14
42	MARINE ON ST. CROIX	1.13
43	LAKEVILLE	1.05
44	COLUMBUS*	1.00
45	HOLLYWOOD TWP.	1.00
46	LAKELAND	1.00
47	VERMILLION TWP.	1.00
48	PLYMOUTH	0.97
49	SPRING LAKE TWP.	0.96
50	WHITE BEAR TWP.	0.93
51	APPLE VALLEY	0.91

52	BLOOMINGTON	0.91
53	WOODBURY	0.90
54	NEW MARKET TWP.	0.88
55	BURNSVILLE	0.85
56	MEDICINE LAKE	0.83
57	WAYZATA	0.80
58	EAGAN	0.76
59	EUREKA TWP.	0.71
60	LAKE ELMO	0.69
61	PRIOR LAKE	0.65
62	HAM LAKE	0.63
63	INVER GROVE	0.63
64	SAND CREEK TWP.	0.62
65	SUNFISH LAKE	0.62
66	MOUND	0.60
67	SPRING PARK	0.59
68	HOPKINS	0.56
69	LITTLE CANADA	0.56
70	HAMPTON TWP.	0.43
71	HELENA TWP.	0.43
72	LINWOOD TWP.	0.43
73	BLAINE	0.42
74	CHAMPLIN	0.42
75	GOLDEN VALLEY	0.42
76	ST. LOUIS PARK	0.42
77	JACKSON TWP.	0.40
78	SHOREVIEW	0.40
79	MEDINA	0.39
80	BIRCHWOOD VILLAGE	0.37
81	LAKE ST. CROIX BEACH	0.37
82	MOUNDS VIEW	0.35
83	VADNAIS HEIGHTS	0.35
84	NINIGER TWP.	0.34
85	ROSEVILLE	0.34
86	MAPLEWOOD	0.32
87	MINNETONKA BEACH	0.32
88	NEW HOPE	0.32
89	NEW BRIGHTON	0.31
90	WEST ST. PAUL	0.31
91	CRYSTAL	0.28
92	BROOKLYN CENTER	0.26
93	CHANHASSEN	0.25
94	COON RAPIDS	0.23
95	DENMARK TWP.	0.23
96	HANCOCK	0.23
97	RAVENA TWP.	0.23
98	SPRING LAKE PARK	0.23
99	FRIDLEY	0.20
100	CASTLE ROCK TWP.	0.19
101	ROSEMOUNT	0.19
102	BROOKLN PARK	0.17
103	DAYTON	0.17
104	HUGO	0.15
105	ROBBINSDALE	0.15

106	INDEPENDENCE	0.14
107	LOUISVILLE	0.14
108	WOODLAND	0.14
109	GREY CLOUD ISLAND TWP.	0.11
110	SHAKOPEE	0.09
111	ST. BONIFACIOUS	0.09
112	NEW SCANDIA*	0.08
113	EXCELSIOR	0.06
114	JORDAN	0.06
115	WHITE BEAR LAKE	0.06
116	LONG LAKE	0.05
117	YOUNG AMERICA TWP.	0.05
118	GEM LAKE	0.00
119	OSSEO	0.00
120	HASSAN TWP.	(0.03)
121	LAKETOWN	(0.03)
122	NEW MARKET*	(0.03)
123	SCIOTA TWP.	(0.03)
124	BAYTOWN TWP.	(0.06)
125	BETHEL	(0.06)
126	CHASKA*	(0.06)
127	RICHFIELD	(0.08)
128	LEXINGTON	(0.11)
129	FOREST LAKE*	(0.12)
130	ANOKA	(0.15)
131	CENTERVILLE	(0.15)
132	NEW PRAGUE	(0.17)
133	MASHAN TWP.	(0.19)
134	COLUMBIA HEIGHTS	(0.20)
135	ST. FANCIS	(0.20)
136	STILLWATER	(0.20)
137	OAK PARK HEIGHTS	(0.22)
138	GREENFIELD	(0.23)
139	RAMSEY	(0.23)
140	NEWPORT	(0.25)
141	OAKDALE	(0.25)
142	HASTINGS	(0.26)
143	HILLTOP	(0.26)
144	NORTH ST. PAUL	(0.28)
145	VERMILLION	(0.31)
146	WACONIA TWP.	(0.31)
147	CHASKA TWP.*	(0.32)
148	CORCORAN	(0.32)
149	GRANT*	(0.34)
150	HAMPTON	(0.34)
151	MAPLE PLAIN	(0.34)
152	WATERTOWN	(0.34)
153	LAUDERDALE	(0.37)
154	DAHLGREN TWP.	(0.39)
155	FARMINGTON	(0.42)
156	SAVAGE	(0.42)
157	EMPIRE TWP.	(0.43)
158	WILLERNIE	(0.45)

159	BAYPORT	(0.46)
160	WATERFORD	(0.46)
161	SOUTH ST. PAUL	(0.49)
162	MINNEAPOLIS	(0.51)
163	ST. PAUL	(0.51)
164	ROGERS	(0.52)
165	BENTON TWP.	(0.54)
166	LORETTO	(0.54)
167	NEW GERMANY	(0.56)
168	ST. PAUL PARK	(0.63)
169	COATES	(0.66)
170	RANDOLPH	(0.69)
171	ROCKFORD	(0.73)
172	VICTORIA	(0.73)
173	WACONIA	(0.74)
174	COLOGNE	(0.79)
175	MAYER	(0.79)
176	FALCON HEIGHTS	(0.80)
177	WATERTOWN TWP.	(0.80)
178	BELLE PLAINE	(0.82)
179	NORWOOD YOUNG AMERICA*	(0.83)
180	YOUNG AMERICA*	(0.86)
181	BELLE PLAINE TWP.	(1.00)
182	LAND FALL	(1.00)
183	MAY TWP.	(1.00)
184	CARVER	(1.06)
185	MENDOTA	(1.10)
186	ARDEN HILLS	(1.16)
187	CAMDEN TWP.	(1.16)
188	GREENVALE TWP.	(1.54)
189	HAMBURG	(1.70)
190	BURNS TWP.*	(1.76)
191	MIESVILLE	(1.93)
192	ST. LAWRENCE TWP.	(2.31)

STRONG LEVEL OF INVESTMENT >1.00	35
MODERATE LEVEL OF INVESTMENT .51 - 1.00	22
WEAK LEVEL OF INVESTMENT .01 - .50	48
MEDIAN .00	2
WEAK LEVEL OF DISINVESTMENT (.01) - (.50)	42
MODERATE LEVEL OF DISINVESTMENT (.51) - (1.00)	19
STRONG LEVEL OF DISINVESTMENT <(1.00)	12
NO DATA	12
TOTAL	192

TABLE 20: HYPOTHESIS #1- MEDIAN GROSS RENT 1990 - Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	RANDOLPH TWP.	no data
2	NOWTHEN*	no data
3	SCANDIA*	no data
4	NORTHFIELD	no data
5	MINNETONKA BEACH	4.12
6	MAY TWP.	3.62
7	LAKELAND SHORES	3.12
8	LILYDALE	2.73
9	DEEPHAVEN	2.63
10	DAYTON	2.59
11	NORTH OAKS	2.50
12	TONKA BAY	2.21
13	INDEPENDENCE	1.84
14	MAPLE GROVE	1.81
15	CREDIT RIVER TWP.	1.66
16	GREENWOOD	1.56
17	GRANT*	1.53
18	MENDOTA	1.53
19	ORONO	1.53
20	SUNFISH LAKE	1.53
21	WOODBURY	1.47
22	MINNETONKA	1.41
23	EDEN PRAIRIE	1.39
24	EDINA	1.36
25	WHITE BEAR TWP.	1.24
26	MEDINA	1.16
27	FOREST LAKE TWP.*	1.15
28	GREY CLOUD ISLAND TWP.	1.13
29	LAKEVILLE	1.09
30	NINIGER TWP.	1.07
31	LINO LAKES	1.05
32	MAHOTMEDI	1.05
33	MENDOTA HEIGHTS	1.05
34	ANDOVER	1.04
35	RAVENA TWP.	1.04
36	PLYMOUTH	1.02
37	SHOREWOOD	1.02
38	COTTAGE GROVE	1.01
39	EAST BETHEL	0.99
40	EAGAN	0.96
41	MINNETRISTA	0.93
42	APPLE VALLEY	0.87
43	BURNSVILLE	0.74
44	CHASKA TWP.*	0.73
45	ELKO NEW MARKET*	0.73
46	GEM LAKE	0.73
47	RAMSEY	0.73
48	BLOOMINGTON	0.72
49	ARDEN HILLS	0.70
50	COLUMBUS*	0.68
51	EMPIRE TWP.	0.68

52	PRIOR LAKE	0.66
53	CAMDEN TWP.	0.64
54	OAK GROVE*	0.64
55	ST. ANTHONY	0.62
56	COON RAPIDS	0.58
57	EUREKA TWP.	0.55
58	INVER GROVE	0.49
59	WHITE BEAR LAKE	0.49
60	ST. LOUIS PARK	0.49
61	SPRING PARK	0.48
62	WAYZATA	0.48
63	SAND CREEK TWP.	0.47
64	BLAINE	0.45
65	VADNAIS HEIGHTS	0.44
66	SAVAGE	0.42
67	LITTLE CANADA	0.41
68	ROCKFORD	0.37
69	SHOREVIEW	0.34
70	BURNS TWP.*	0.33
71	PINE SPRINGS	0.33
72	SPRING LAKE TWP.	0.33
73	WEST LAKELAND TWP.	0.33
74	NEW HOPE	0.32
75	GOLDEN VALLEY	0.31
76	HOPKINS	0.29
77	LAKE ELMO	0.29
78	MARINE ON ST. CROIX	0.29
79	MOUND	0.28
80	MAPLEWOOD	0.23
81	MAPLE PLAIN	0.22
82	CHAMPLIN	0.22
83	BROOKLYN CENTER	0.21
84	CHANHASSEN	0.20
85	ROBBINSDALE	0.19
86	ROSEVILLE	0.19
87	CRYSTAL	0.17
88	LONG LAKE	0.17
89	VERMILLION	0.17
90	CHASKA*	0.14
91	BAYPORT	0.08
92	LAKELAND	0.08
93	MOUNDS VIEW	0.08
94	ST. FANCIS	0.08
95	HAMPTON TWP.	0.07
96	LOUISVILLE	0.07
97	WEST ST. PAUL	0.06
98	HAM LAKE	0.04
99	NEW MARKET*	0.04
100	STILLWATER TWP.	0.04
101	NEW BRIGHTON	0.03
102	SHAKOPEE	0.03
103	FRIDLEY	0.02
104	VICTORIA	0.00

105	OAK PARK HEIGHTS	(0.01)
106	LEXINGTON	(0.02)
107	AFTON	(0.03)
108	CARVER	(0.03)
109	ROSEMOUNT	(0.04)
110	BROOKLN PARK	(0.06)
111	GREENFIELD	(0.06)
112	HELENA TWP.	(0.06)
113	ST. MARYS POINT	(0.06)
114	SPRING LAKE PARK	(0.10)
115	MEDICINE LAKE	(0.13)
116	ST. BONIFACIOUS	(0.13)
117	DENMARK TWP.	(0.16)
118	MASHAN TWP.	(0.16)
119	NEW MARKET TWP.	(0.16)
120	OSSEO	(0.16)
121	SCIOTA TWP.	(0.16)
122	EXCELSIOR	(0.17)
123	COLUMBIA HEIGHTS	(0.18)
124	STILLWATER	(0.19)
125	RICHFIELD	(0.21)
126	LAKE ST. CROIX BEACH	(0.22)
127	NORTH ST. PAUL	(0.22)
128	VERMILLION TWP.	(0.22)
129	LAUDERDALE	(0.25)
130	NEW SCANDIA*	(0.26)
131	NEWPORT	(0.28)
132	ANOKA	(0.29)
133	HASTINGS	(0.33)
134	OAKDALE	(0.33)
135	FOREST LAKE*	(0.39)
136	CASTLE ROCK TWP.	(0.40)
137	LINWOOD TWP.	(0.40)
138	CORCORAN	(0.42)
139	CEDAR LAKE TWP.	(0.46)
140	HOLLYWOOD TWP.	(0.46)
141	NEW TRIER	(0.46)
142	WACONIA	(0.46)
143	WATERFORD	(0.46)
144	WILLERNIE	(0.46)
145	WOODLAND	(0.46)
146	MINNEAPOLIS	(0.47)
147	ST. PAUL	(0.47)
148	ST. PAUL PARK	(0.47)
149	WACONIA	(0.48)
150	SOUTH ST. PAUL	(0.49)
151	BLAKELEY TWP.	(0.56)
152	FARMINGTON	(0.57)
153	BIRCHWOOD VILLAGE	(0.58)
154	HILLTOP	(0.60)
155	LAND FALL	(0.61)
156	HUGO	(0.65)
157	CIRCLE PINES	(0.66)
158	ROGERS	(0.66)

159	WATERTOWN TWP.	(0.66)
160	YOUNG AMERICA*	(0.74)
161	BELLE PLAINE TWP.	(0.76)
162	FALCON HEIGHTS	(0.76)
163	LAKETOWN	(0.81)
164	JACKSON TWP.	(0.84)
165	DAHLGREN TWP.	(0.86)
166	HAMPTON	(0.86)
167	HANCOCK	(0.86)
168	SAN FRANCISCO TWP.	(0.86)
169	JORDAN	(0.90)
170	CENTERVILLE	(0.93)
171	BELLE PLAINE	(0.96)
172	BETHEL	(1.01)
173	LORETTO	(1.01)
174	NEW PRAGUE	(1.07)
175	BENTON TWP.	(1.09)
176	BAYTOWN TWP.	(1.15)
177	HASSAN TWP.	(1.19)
178	COATES	(1.20)
179	NORWOOD YOUNG AMERICA*	(1.20)
180	COLOGNE	(1.26)
181	RANDOLPH	(1.28)
182	WATERTOWN	(1.28)
183	YOUNG AMERICA TWP.	(1.32)
184	MAYER	(1.34)
185	GREENVALE TWP.	(1.35)
186	DELLWOOD	(1.52)
187	NEW GERMANY	(1.61)
188	HANOVER	(1.66)
189	HAMBURG	(1.74)
190	DOUGLAS TWP.	(1.86)
191	ST. LAWRENCE TWP.	(1.94)
192	MIESVILLE	(2.05)
	STRONG LEVEL OF INVESTMENT >1.00	34
	MODERATE LEVEL OF INVESTMENT .51 - 1.00	19
	WEAK LEVEL OF INVESTMENT .01 - .50	46
	MEDIAN .00	1
	WEAK LEVEL OF DISINVESTMENT (.01) - (.50)	46
	MODERATE LEVEL OF DISINVESTMENT (.51) - (1.00)	21
	STRONG LEVEL OF DISINVESTMENT <(1.00)	21
	NO DATA	4
	TOTAL	192

TABLE 21: HYPOTHESIS #1- MEDIAN GROSS RENT 2000 - Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	GRANT*	no data
2	LAKELAND SHORES	no data
3	NEW PRAGUE	no data
4	PINE SPRINGS	no data
5	ROCKFORD	no data
6	YOUNG AMERICA TWP.	no data
7	NOWTHEN*	no data
8	SCANDIA*	no data
9	CEDAR LAKE TWP.	5.13
10	AFTON	4.16
11	LILYDALE	3.08
12	MINNETRISTA	2.47
13	MINNETONKA BEACH	2.24
14	SHOREWOOD	2.11
15	WOODBURY	1.94
16	RAMSEY	1.63
17	ORONO	1.56
18	FOREST LAKE TWP.*	1.54
19	MINNETONKA	1.50
20	EUREKA TWP.	1.47
21	ST. ANTHONY	1.37
22	MAPLE GROVE	1.36
23	EDEN PRAIRIE	1.31
24	NORTHFIELD	1.27
25	TONKA BAY	1.22
26	COLUMBUS*	1.20
27	EDINA	1.20
28	GREENWOOD	1.19
29	PLYMOUTH	1.16
30	NEW MARKET*	1.12
31	NORTH OAKS	1.12
32	STILLWATER TWP.	1.12
33	CORCORAN	1.07
34	MENDOTA HEIGHTS	1.07
35	HANCOCK	0.98
36	RAVENA TWP.	0.98
37	INDEPENDENCE	0.95
38	RANDOLPH TWP.	0.93
39	GEM LAKE	0.91
40	CREDIT RIVER TWP.	0.89
41	LAKEVILLE	0.87
42	EAGAN	0.87
43	COTTAGE GROVE	0.86
44	EMPIRE TWP.	0.75
45	BIRCHWOOD VILLAGE	0.72
46	BURNSVILLE	0.71
47	WHITE BEAR TWP.	0.70
48	LAKELAND	0.69
49	MAY TWP.	0.69
50	SAN FRANCISCO TWP.	0.69
51	ANDOVER	0.67

52	INVER GROVE	0.64
53	BAYTOWN TWP.	0.62
54	MAHOTMEDI	0.62
55	JACKSON TWP.	0.61
56	BLOOMINGTON	0.56
57	WAYZATA	0.54
58	LINO LAKES	0.53
59	APPLE VALLEY	0.52
60	COON RAPIDS	0.46
61	GREY CLOUD ISLAND TWP.	0.40
62	HOLLYWOOD TWP.	0.40
63	SPRING PARK	0.39
64	WHITE BEAR LAKE	0.38
65	HASSAN TWP.	0.36
66	ST. LOUIS PARK	0.35
67	VICTORIA	0.34
68	WEST LAKELAND TWP.	0.34
69	CAMDEN TWP.	0.33
70	SHOREVIEW	0.32
71	HOPKINS	0.31
72	VADNAIS HEIGHTS	0.30
73	PRIOR LAKE	0.28
74	BLAINE	0.27
75	SHAKOPEE	0.25
76	DEEPHAVEN	0.23
77	SAVAGE	0.22
78	ARDEN HILLS	0.19
79	MAPLEWOOD	0.19
80	ROSEVILLE	0.19
81	NEW HOPE	0.18
82	CHASKA*	0.16
83	EAST BETHEL	0.16
84	LOUISVILLE	0.16
85	SPRING LAKE TWP.	0.16
86	LITTLE CANADA	0.15
87	DOUGLAS TWP.	0.11
88	WOODLAND	0.11
89	SPRING LAKE PARK	0.10
90	CRYSTAL	0.09
91	GOLDEN VALLEY	0.08
92	BROOKLN PARK	0.04
93	NEW BRIGHTON	0.04
94	CHANHASSEN	0.01
95	OAKDALE	(0.01)
96	WACONIA	(0.02)
97	LONG LAKE	(0.07)
98	OAK GROVE*	(0.08)
99	WACONIA TWP.	(0.08)
100	CHAMPLIN	(0.09)
101	MARINE ON ST. CROIX	(0.09)
102	CARVER	(0.10)
103	RICHFIELD	(0.10)
104	BROOKLYN CENTER	(0.12)

105	BAYPORT	(0.12)
106	FRIDLEY	(0.12)
107	ROSEMOUNT	(0.12)
108	MOUNDS VIEW	(0.14)
109	ST. BONIFACIOUS	(0.16)
110	ROBBINSDALE	(0.17)
111	BLAKELEY TWP.	(0.18)
112	CHASKA TWP.*	(0.18)
113	DELLWOOD	(0.18)
114	HAM LAKE	(0.18)
115	ST. FANCIS	(0.18)
116	WEST ST. PAUL	(0.20)
117	MAPLE PLAIN	(0.22)
118	OAK PARK HEIGHTS	(0.24)
119	WATERTOWN TWP.	(0.25)
120	NORTH ST. PAUL	(0.26)
121	STILLWATER	(0.27)
122	OSSEO	(0.27)
123	VERMILLION	(0.28)
124	DENMARK TWP.	(0.28)
125	CIRCLE PINES	(0.29)
126	EXCELSIOR	(0.30)
127	ANOKA	(0.31)
128	LAUDERDALE	(0.31)
129	BELLE PLAINE TWP.	(0.32)
130	SAND CREEK TWP.	(0.32)
131	WILLERNIE	(0.32)
132	GREENFIELD	(0.34)
133	CASTLE ROCK TWP.	(0.36)
134	MEDINA	(0.36)
135	HASTINGS	(0.38)
136	NEW SCANDIA*	(0.38)
137	HAMPTON TWP.	(0.39)
138	MOUND	(0.43)
139	FOREST LAKE*	(0.45)
140	NEWPORT	(0.46)
141	BURNS TWP.*	(0.47)
142	CENTERVILLE	(0.47)
143	HELENA TWP.	(0.47)
144	MINNEAPOLIS	(0.47)
145	JORDAN	(0.49)
146	FARMINGTON	(0.50)
147	MEDICINE LAKE	(0.50)
148	COLUMBIA HEIGHTS	(0.52)
149	SOUTH ST. PAUL	(0.52)
150	ST. PAUL PARK	(0.52)
151	NEW MARKET TWP.	(0.53)
152	ST. PAUL	(0.53)
153	LEXINGTON	(0.54)
154	VERMILLION TWP.	(0.55)
155	BENTON TWP.	(0.56)
156	MENDOTA	(0.56)
157	LAKE ST. CROIX BEACH	(0.57)
158	SCIOTA TWP.	(0.61)

159	ST. LAWRENCE TWP.	(0.66)
160	COATES	(0.71)
161	NINIGER TWP.	(0.76)
162	RANDOLPH	(0.76)
163	LAKE ELMO	(0.78)
164	NORWOOD YOUNG AMERICA*	(0.82)
165	MASHAN TWP.	(0.82)
166	DAYTON	(0.93)
167	FALCON HEIGHTS	(0.94)
168	HILLTOP	(0.97)
169	BELLE PLAINE	(0.99)
170	ROGERS	(1.00)
171	WATERTOWN	(1.03)
172	BETHEL	(1.09)
173	GREENVALE TWP.	(1.15)
174	HUGO	(1.15)
175	DAHLGREN TWP.	(1.19)
176	HAMPTON	(1.19)
177	NEW TRIER	(1.19)
178	WATERFORD	(1.19)
179	LINWOOD TWP.	(1.24)
180	MAYER	(1.24)
181	ST. MARYS POINT	(1.26)
182	COLOGNE	(1.31)
183	LAKETOWN	(1.34)
184	NEW GERMANY	(1.34)
185	YOUNG AMERICA*	(1.34)
186	LORETTO	(1.52)
187	MIESVILLE	(1.63)
188	HAMBURG	(1.65)
189	LAND FALL	(1.87)
190	ELKO NEW MARKET*	(1.92)
191	HANOVER	(1.92)
192	SUNFISH LAKE	(2.21)

STRONG LEVEL OF INVESTMENT >1.00	26
MODERATE LEVEL OF INVESTMENT .51 - 1.00	25
WEAK LEVEL OF INVESTMENT .01 - .50	35
MEDIAN .00	0
WEAK LEVEL OF DISINVESTMENT (.01) - (.50)	51
MODERATE LEVEL OF DISINVESTMENT (.51) - (1.00)	25
STRONG LEVEL OF DISINVESTMENT <(1.00)	22
NO DATA	8
TOTAL	192

TABLE 22: HYPOTHESIS #1- MEDIAN GROSS RENT 2010 - Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	BURNS TWP.*	no data
2	CHASKA TWP.*	no data
3	DELLWOOD	no data
4	DOUGLAS TWP.	no data
5	FOREST LAKE TWP.*	no data
6	GREY CLOUD ISLAND TWP.	no data
7	HANOVER	no data
8	LAKELAND SHORES	no data
9	LAND FALL	no data
10	NEW MARKET TWP.	no data
11	NEW SCANDIA*	no data
12	NORTHFIELD	no data
13	PINE SPRINGS	no data
14	SAN FRANCISCO TWP.	no data
15	SUNFISH LAKE	no data
16	YOUNG AMERICA TWP.	no data
17	BAYTOWN TWP.	3.63
18	NORTH OAKS	3.63
19	WEST LAKELAND TWP.	3.63
20	WOODLAND	3.63
21	ST. MARYS POINT	3.22
22	DEEPHAVEN	2.82
23	BIRCHWOOD VILLAGE	2.72
24	CORCORAN	2.72
25	ST. LAWRENCE TWP.	2.68
26	EUREKA TWP.	2.41
27	VICTORIA	2.30
28	GEM LAKE	2.24
29	GRANT*	2.23
30	AFTON	2.12
31	EAST BETHEL	1.71
32	MINNETONKA BEACH	1.71
33	NOWTHEN*	1.69
34	ORONO	1.64
35	RAMSEY	1.61
36	LILYDALE	1.61
37	CEDAR LAKE TWP.	1.52
38	TONKA BAY	1.45
39	ARDEN HILLS	1.38
40	CAMDEN TWP.	1.28
41	ST. ANTHONY	1.27
42	HUGO	1.14
43	OAK GROVE*	1.02
44	EMPIRE TWP.	0.97
45	WOODBURY	0.94
46	MAPLE GROVE	0.92
47	BAYPORT	0.92
48	ANDOVER	0.88
49	LAKELAND	0.84
50	WHITE BEAR TWP.	0.84
51	LINO LAKES	0.84

52	GREENWOOD	0.80
53	CREDIT RIVER TWP.	0.78
54	MAHOTMEDI	0.74
55	COTTAGE GROVE	0.72
56	LAKEVILLE	0.72
57	CASTLE ROCK TWP.	0.71
58	CIRCLE PINES	0.70
59	BENTON TWP.	0.70
60	ELKO NEW MARKET*	0.70
61	NEW MARKET*	0.70
62	RANDOLPH TWP.	0.69
63	BLAKELEY TWP.	0.68
64	HAMPTON TWP.	0.66
65	APPLE VALLEY	0.61
66	HASSAN TWP.	0.61
67	SHOREWOOD	0.60
68	EDINA	0.60
69	RANDOLPH	0.58
70	LAKE ST. CROIX BEACH	0.57
71	SAVAGE	0.55
72	JACKSON TWP.	0.53
73	SCIOTA TWP.	0.53
74	WACONIA TWP.	0.53
75	ROGERS	0.50
76	EDEN PRAIRIE	0.49
77	SPRING PARK	0.48
78	PLYMOUTH	0.48
79	MINNETONKA	0.45
80	DAYTON	0.43
81	MAY TWP.	0.37
82	HOLLYWOOD TWP.	0.36
83	BLAINE	0.35
84	DAHLGREN TWP.	0.31
85	HELENA TWP.	0.29
86	MENDOTA HEIGHTS	0.25
87	ROSEMOUNT	0.24
88	INDEPENDENCE	0.24
89	NEW TRIER	0.23
90	OAK PARK HEIGHTS	0.23
91	EAGAN	0.18
92	LONG LAKE	0.18
93	INVER GROVE	0.16
94	CARVER	0.14
95	CHANHASSEN	0.13
96	COATES	0.13
97	GOLDEN VALLEY	0.12
98	WHITE BEAR LAKE	0.11
99	MEDICINE LAKE	0.10
100	ST. LOUIS PARK	0.10
101	SPRING LAKE PARK	0.08
102	CHASKA*	0.07
103	SHAKOPEE	0.07
104	MINNETRISTA	0.06
105	SHOREVIEW	0.06

106	BURNSVILLE	0.06
107	BLOOMINGTON	0.05
108	GREENFIELD	0.05
109	COON RAPIDS	0.03
110	HAM LAKE	0.03
111	SCANDIA*	0.03
112	PRIOR LAKE	0.02
113	MEDINA	0.02
114	NEW GERMANY	0.02
115	STILLWATER	0.01
116	HANCOCK	0.01
117	WAYZATA	0.01
118	VADNAIS HEIGHTS	(0.03)
119	CHAMPLIN	(0.05)
120	FARMINGTON	(0.06)
121	LINWOOD TWP.	(0.07)
122	SAND CREEK TWP.	(0.09)
123	BROOKLYN CENTER	(0.10)
124	LITTLE CANADA	(0.11)
125	MAPLEWOOD	(0.11)
126	VERMILLION	(0.12)
127	HOPKINS	(0.16)
128	COLUMBIA HEIGHTS	(0.16)
129	FOREST LAKE*	(0.17)
130	CENTERVILLE	(0.18)
131	LAKETOWN	(0.19)
132	OAKDALE	(0.19)
133	FRIDLEY	(0.20)
134	CRYSTAL	(0.20)
135	NEW HOPE	(0.21)
136	ROSEVILLE	(0.21)
137	ROBBINSDALE	(0.22)
138	BROOKLN PARK	(0.23)
139	WEST ST. PAUL	(0.24)
140	NEW BRIGHTON	(0.24)
141	LAUDERDALE	(0.25)
142	MOUNDS VIEW	(0.29)
143	RAVENA TWP.	(0.30)
144	COLUMBUS*	(0.30)
145	WILLERNIE	(0.33)
146	MENDOTA	(0.33)
147	MINNEAPOLIS	(0.34)
148	ANOKA	(0.34)
149	SOUTH ST. PAUL	(0.35)
150	LEXINGTON	(0.36)
151	EXCELSIOR	(0.37)
152	HASTINGS	(0.38)
153	VERMILLION TWP.	(0.39)
154	ST. PAUL	(0.39)
155	COLOGNE	(0.40)
156	MAPLE PLAIN	(0.41)
157	NORTH ST. PAUL	(0.41)
158	ST. FANCIS	(0.42)

159	FALCON HEIGHTS	(0.42)
160	RICHFIELD	(0.42)
161	HAMPTON	(0.44)
162	STILLWATER TWP.	(0.45)
163	OSSEO	(0.47)
164	MOUND	(0.50)
165	WATERTOWN	(0.50)
166	MASHAN TWP.	(0.51)
167	ROCKFORD	(0.55)
168	MARINE ON ST. CROIX	(0.61)
169	NEW PRAGUE	(0.61)
170	ST. PAUL PARK	(0.61)
171	LAKE ELMO	(0.62)
172	NORWOOD YOUNG AMERICA*	(0.62)
173	BELLE PLAINE	(0.66)
174	WACONIA	(0.66)
175	BETHEL	(0.75)
176	NEWPORT	(0.75)
177	GREENVALE TWP.	(0.76)
178	NINIGER TWP.	(0.76)
179	BELLE PLAINE TWP.	(0.78)
180	LORETTO	(0.79)
181	HILLTOP	(0.81)
182	JORDAN	(0.84)
183	SPRING LAKE TWP.	(0.91)
184	LOUISVILLE	(0.95)
185	WATERFORD	(0.97)
186	MAYER	(0.97)
187	WATERTOWN TWP.	(1.03)
188	ST. BONIFACIOUS	(1.09)
189	MIESVILLE	(1.13)
190	HAMBURG	(1.20)
191	DENMARK TWP.	(1.25)
192	YOUNG AMERICA*	(1.56)

STRONG LEVEL OF INVESTMENT >1.00	27
MODERATE LEVEL OF INVESTMENT .51 - 1.00	32
WEAK LEVEL OF INVESTMENT .01 - .50	42
MEDIAN .00	0
WEAK LEVEL OF DISINVESTMENT (.01) - (.50)	46
MODERATE LEVEL OF DISINVESTMENT (.51) - (1.00)	23
STRONG LEVEL OF DISINVESTMENT <(1.00)	6
NO DATA	16
TOTAL	192

TABLE 23: HYPOTHESIS #2- MEDIAN HOME VALUE 1980-1990 - Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	NORTHFIELD	no data
2	NOWTHEN*	no data
3	SCANDIA*	no data
4	SUNFISH LAKE	7.37
5	LILYDALE	5.63
6	MINNETONKA BEACH	4.95
7	WOODLAND	4.25
8	LAND FALL	3.27
9	DELLWOOD	2.84
10	MEDICINE LAKE	2.80
11	NORTH OAKS	2.34
12	STILLWATER TWP.	2.23
13	GREENVALE TWP.	1.93
14	DENMARK TWP.	1.92
15	CAMDEN TWP.	1.88
16	LAKE ELMO	1.87
17	WEST LAKELAND TWP.	1.86
18	GRANT*	1.83
19	HANCOCK	1.81
20	NEW MARKET TWP.	1.81
21	BAYTOWN TWP.	1.80
22	MAY TWP.	1.77
23	SAN FRANCISCO TWP.	1.75
24	WACONIA TWP.	1.74
25	ORONO	1.70
26	CEDAR LAKE TWP.	1.62
27	AFTON	1.62
28	BENTON TWP.	1.60
29	JACKSON TWP.	1.57
30	TONKA BAY	1.56
31	DAHLGREN TWP.	1.48
32	INDEPENDENCE	1.47
33	GREENWOOD	1.47
34	HAMPTON TWP.	1.47
35	ST. LAWRENCE TWP.	1.46
36	EDINA	1.45
37	MEDINA	1.43
38	WATERTOWN TWP.	1.42
39	MENDOTA HEIGHTS	1.42
40	HOLLYWOOD TWP.	1.42
41	SAND CREEK TWP.	1.40
42	MINNETRISTA	1.39
43	ROCKFORD	1.38
44	HANOVER	1.32
45	HELENA TWP.	1.29
46	BELLE PLAINE TWP.	1.27
47	SPRING LAKE TWP.	1.25
48	EUREKA TWP.	1.23
49	LITTLE CANADA	1.23
50	CORCORAN	1.19
51	CASTLE ROCK TWP.	1.17

52	MASHAN TWP.	1.16
53	NEW SCANDIA*	1.13
54	ARDEN HILLS	1.13
55	YOUNG AMERICA TWP.	1.11
56	VICTORIA	1.11
57	VERMILLION TWP.	1.07
58	HUGO	1.04
59	DOUGLAS TWP.	1.03
60	RANDOLPH TWP.	1.03
61	BLAKELEY TWP.	0.99
62	CHASKA TWP.*	0.98
63	SHOREWOOD	0.96
64	BURNS TWP.*	0.95
65	BIRCHWOOD VILLAGE	0.95
66	HILLTOP	0.95
67	SCIOTA TWP.	0.94
68	HASSAN TWP.	0.90
69	LOUISVILLE	0.87
70	CHASKA*	0.81
71	LAKELAND SHORES	0.77
72	VADNAIS HEIGHTS	0.75
73	MARINE ON ST. CROIX	0.73
74	GREENFIELD	0.72
75	COLUMBUS*	0.71
76	PLYMOUTH	0.70
77	INVER GROVE	0.68
78	LAKEVILLE	0.66
79	SHOREVIEW	0.62
80	BURNSVILLE	0.62
81	WOODBURY	0.60
82	WATERFORD	0.58
83	DAYTON	0.57
84	LINWOOD TWP.	0.54
85	CARVER	0.54
86	CREDIT RIVER TWP.	0.54
87	MAHOTMEDI	0.53
88	LINO LAKES	0.53
89	EDEN PRAIRIE	0.53
90	EAST BETHEL	0.51
91	EMPIRE TWP.	0.50
92	WATERTOWN	0.50
93	MINNETONKA	0.50
94	CHANHASSEN	0.50
95	LAKETOWN	0.49
96	NINIGER TWP.	0.48
97	WAYZATA	0.47
98	ROGERS	0.47
99	HAM LAKE	0.45
100	NEW TRIER	0.45
101	LEXINGTON	0.45
102	DEEPHAVEN	0.44
103	PINE SPRINGS	0.43
104	MOUNDS VIEW	0.42
105	RAVENA TWP.	0.41

106	FOREST LAKE TWP.*	0.41
107	OAK PARK HEIGHTS	0.41
108	ROSEMOUNT	0.38
109	JORDAN	0.38
110	ANDOVER	0.37
111	OAKDALE	0.37
112	ST. FANCIS	0.36
113	LORETTO	0.36
114	BLAINE	0.36
115	NEW BRIGHTON	0.34
116	EAGAN	0.34
117	CENTERVILLE	0.34
118	OAK GROVE*	0.33
119	NEW MARKET*	0.31
120	RANDOLPH	0.30
121	BETHEL	0.30
122	FALCON HEIGHTS	0.27
123	EXCELSIOR	0.27
124	COATES	0.25
125	FOREST LAKE*	0.25
126	MAPLE PLAIN	0.25
127	ST. ANTHONY	0.25
128	STILLWATER	0.23
129	ST. BONIFACIOUS	0.22
130	APPLE VALLEY	0.22
131	WHITE BEAR TWP.	0.22
132	MAPLEWOOD	0.21
133	HASTINGS	0.21
134	WACONIA	0.21
135	MIESVILLE	0.20
136	GOLDEN VALLEY	0.18
137	VERMILLION	0.17
138	SHAKOPEE	0.17
139	ROSEVILLE	0.16
140	SAVAGE	0.16
141	ST. MARYS POINT	0.16
142	LONG LAKE	0.14
143	BELLE PLAINE	0.14
144	SPRING LAKE PARK	0.12
145	MAPLE GROVE	0.12
146	FARMINGTON	0.12
147	CHAMPLIN	0.12
148	BLOOMINGTON	0.11
149	GREY CLOUD ISLAND TWP.	0.09
150	NORWOOD YOUNG AMERICA*	0.07
151	SPRING PARK	0.06
152	ST. PAUL PARK	0.06
153	HOPKINS	0.05
154	RAMSEY	0.05
155	ST. LOUIS PARK	0.05
156	WEST ST. PAUL	0.05
157	COON RAPIDS	0.04
158	RICHFIELD	0.04
159	ELKO NEW MARKET*	0.04

160	HAMPTON	0.04
161	WHITE BEAR LAKE	0.04
162	NEW HOPE	0.03
163	NORTH ST. PAUL	0.03
164	YOUNG AMERICA*	0.03
165	MAYER	0.02
166	COTTAGE GROVE	0.02
167	BROOKLN PARK	0.02
168	LAUDERDALE	0.02
169	BAYPORT	0.01
170	FRIDLEY	(0.02)
171	OSSEO	(0.03)
172	LAKELAND	(0.05)
173	ANOKA	(0.06)
174	WILLERNIE	(0.06)
175	NEW PRAGUE	(0.06)
176	PRIOR LAKE	(0.07)
177	MINNEAPOLIS	(0.08)
178	COLOGNE	(0.09)
179	BROOKLYN CENTER	(0.09)
180	ST. PAUL	(0.10)
181	ROBBINSDALE	(0.11)
182	SOUTH ST. PAUL	(0.11)
183	COLUMBIA HEIGHTS	(0.12)
184	CRYSTAL	(0.13)
185	LAKE ST. CROIX BEACH	(0.13)
186	NEWPORT	(0.14)
187	MOUND	(0.19)
188	CIRCLE PINES	(0.25)
189	GEM LAKE	(0.29)
190	HAMBURG	(0.42)
191	MENDOTA	(0.49)
192	NEW GERMANY	(0.58)
	STRONG INCREASE OF INVESTMENT >1.00	57
	MODERATE INCREASE OF INVESTMENT .51 - 1.00	33
	WEAK INCREASE OF INVESTMENT .01 - .50	76
	MEDIAN .00	0
	WEAK INCREASE OF DISINVESTMENT (.01) - (.50)	22
	MODERATE INCREASE OF DISINVESTMENT (.51) - (1.00)	1
	STRONG INCREASE OF DISINVESTMENT <(1.00)	0
	NO DATA	3
	TOTAL	192

TABLE 24: HYPOTHESIS #2- MEDIAN HOME VALUE 1990-2000 - Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	HILLTOP	no data
2	LAND FALL	no data
3	NEW PRAGUE	no data
4	YOUNG AMERICA TWP.	no data
5	NOWTHEN*	no data
6	SCANDIA*	no data
7	MINNETONKA BEACH	6.35
8	SUNFISH LAKE	4.51
9	WOODLAND	4.13
10	GREENWOOD	4.00
11	DELLWOOD	3.09
12	NORTH OAKS	2.88
13	ORONO	2.74
14	BAYTOWN TWP.	2.70
15	WEST LAKELAND TWP.	2.63
16	WAYZATA	2.57
17	TONKA BAY	2.55
18	DEEPHAVEN	2.47
19	MINNETRISTA	2.23
20	STILLWATER TWP.	2.02
21	NEW MARKET TWP.	2.02
22	INDEPENDENCE	1.95
23	GREENFIELD	1.92
24	MEDICINE LAKE	1.71
25	MAY TWP.	1.69
26	PINE SPRINGS	1.63
27	SHOREWOOD	1.60
28	BELLE PLAINE TWP.	1.58
29	JACKSON TWP.	1.57
30	GRANT*	1.56
31	HAMPTON TWP.	1.52
32	GREENVALE TWP.	1.49
33	SPRING LAKE TWP.	1.36
34	ROGERS	1.33
35	SCIOTA TWP.	1.32
36	VICTORIA	1.29
37	LAKE ELMO	1.28
38	NORTHFIELD	1.28
39	EUREKA TWP.	1.27
40	DOUGLAS TWP.	1.22
41	MASHAN TWP.	1.22
42	MARINE ON ST. CROIX	1.20
43	AFTON	1.16
44	RANDOLPH TWP.	1.16
45	SPRING PARK	1.13
46	EDINA	1.12
47	SAN FRANCISCO TWP.	1.11
48	EXCELSIOR	1.06
49	ELKO NEW MARKET*	1.06
50	CEDAR LAKE TWP.	1.01
51	YOUNG AMERICA*	1.00

52	MEDINA	0.99
53	CHANHASSEN	0.99
54	WATERTOWN TWP.	0.98
55	CASTLE ROCK TWP.	0.92
56	HELENA TWP.	0.92
57	HANCOCK	0.91
58	LOUISVILLE	0.88
59	CORCORAN	0.84
60	DAHLGREN TWP.	0.82
61	LAKELAND SHORES	0.82
62	NINIGER TWP.	0.79
63	WACONIA TWP.	0.79
64	RAVENA TWP.	0.76
65	NEW SCANDIA*	0.74
66	MAHOTMEDI	0.72
67	HASSAN TWP.	0.71
68	DENMARK TWP.	0.68
69	EDEN PRAIRIE	0.68
70	HANOVER	0.68
71	VERMILLION TWP.	0.66
72	PRIOR LAKE	0.65
73	LAKEVILLE	0.62
74	CAMDEN TWP.	0.62
75	SAVAGE	0.60
76	EMPIRE TWP.	0.59
77	LAKETOWN	0.57
78	CHASKA*	0.57
79	SAND CREEK TWP.	0.54
80	LINO LAKES	0.53
81	CREDIT RIVER TWP.	0.51
82	CARVER	0.51
83	MINNETONKA	0.51
84	PLYMOUTH	0.51
85	ST. BONIFACIOUS	0.50
86	BURNS TWP.*	0.49
87	LORETTO	0.49
88	CHASKA TWP.*	0.45
89	BENTON TWP.	0.43
90	FOREST LAKE TWP.*	0.41
91	HOLLYWOOD TWP.	0.41
92	STILLWATER	0.41
93	WACONIA	0.40
94	FARMINGTON	0.39
95	WOODBURY	0.37
96	OAK GROVE*	0.34
97	COLUMBUS*	0.33
98	ROSEMOUNT	0.32
99	OAK PARK HEIGHTS	0.32
100	BIRCHWOOD VILLAGE	0.30
101	GEM LAKE	0.30
102	ANDOVER	0.30
103	HAM LAKE	0.30
104	LILYDALE	0.29
105	GREY CLOUD ISLAND TWP.	0.28

106	ST. FANCIS	0.28
107	COLOGNE	0.28
108	BLAKELEY TWP.	0.26
109	BELLE PLAINE	0.25
110	WHITE BEAR TWP.	0.24
111	EAGAN	0.22
112	LAKELAND	0.22
113	MAPLE GROVE	0.21
114	EAST BETHEL	0.21
115	ROCKFORD	0.20
116	FALCON HEIGHTS	0.19
117	MENDOTA HEIGHTS	0.19
118	JORDAN	0.17
119	MIESVILLE	0.17
120	NEW TRIER	0.17
121	ST. LAWRENCE TWP.	0.17
122	WATERFORD	0.14
123	RAMSEY	0.13
124	SHAKOPEE	0.11
125	CENTERVILLE	0.10
126	LINWOOD TWP.	0.08
127	HAMPTON	0.08
128	HAMBURG	0.07
129	DAYTON	0.07
130	APPLE VALLEY	0.04
131	MOUND	0.04
132	MAPLE PLAIN	0.02
133	NEW MARKET*	0.02
134	LITTLE CANADA	(0.00)
135	HUGO	(0.01)
136	INVER GROVE	(0.01)
137	BAYPORT	(0.02)
138	GOLDEN VALLEY	(0.02)
139	WATERTOWN	(0.02)
140	LAKE ST. CROIX BEACH	(0.04)
141	COTTAGE GROVE	(0.05)
142	BLOOMINGTON	(0.06)
143	ST. MARYS POINT	(0.06)
144	OAKDALE	(0.06)
145	CHAMPLIN	(0.06)
146	ST. LOUIS PARK	(0.07)
147	ARDEN HILLS	(0.08)
148	LONG LAKE	(0.08)
149	BURNSVILLE	(0.10)
150	HASTINGS	(0.11)
151	SHOREVIEW	(0.12)
152	ST. ANTHONY	(0.13)
153	MAYER	(0.14)
154	VADNAIS HEIGHTS	(0.14)
155	ROSEVILLE	(0.14)
156	HOPKINS	(0.15)
157	VERMILLION	(0.16)
158	MENDOTA	(0.17)

159	BLAINE	(0.18)
160	NORWOOD YOUNG AMERICA*	(0.18)
161	MAPLEWOOD	(0.20)
162	NEW HOPE	(0.22)
163	BETHEL	(0.22)
164	RICHFIELD	(0.22)
165	BROOKLN PARK	(0.25)
166	NEW BRIGHTON	(0.26)
167	WHITE BEAR LAKE	(0.26)
168	MINNEAPOLIS	(0.26)
169	CIRCLE PINES	(0.27)
170	COON RAPIDS	(0.27)
171	FOREST LAKE*	(0.28)
172	WILLERNIE	(0.31)
173	NEW GERMANY	(0.33)
174	ANOKA	(0.33)
175	COATES	(0.33)
176	MOUNDS VIEW	(0.34)
177	WEST ST. PAUL	(0.34)
178	NEWPORT	(0.36)
179	SOUTH ST. PAUL	(0.36)
180	RANDOLPH	(0.37)
181	LAUDERDALE	(0.38)
182	SPRING LAKE PARK	(0.39)
183	NORTH ST. PAUL	(0.39)
184	OSSEO	(0.41)
185	CRYSTAL	(0.45)
186	ROBBINSDALE	(0.45)
187	ST. PAUL	(0.46)
188	FRIDLEY	(0.49)
189	ST. PAUL PARK	(0.50)
190	LEXINGTON	(0.52)
191	COLUMBIA HEIGHTS	(0.63)
192	BROOKLYN CENTER	(0.69)

STRONG INCREASE OF INVESTMENT >1.00	44
MODERATE INCREASE OF INVESTMENT .51 - 1.00	35
WEAK INCREASE OF INVESTMENT .01 - .50	48
MEDIAN .00	0
WEAK INCREASE OF DISINVESTMENT (.01) - (.50)	55
MODERATE INCREASE OF DISINVESTMENT (.51) - (1.00)	4
STRONG INCREASE OF DISINVESTMENT <(1.00)	0
NO DATA	6
TOTAL	192

TABLE 25: HYPOTHESIS #2- MEDIAN HOME VALUE 2000-2010 - Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	BURNS TWP.*	no data
2	CHASKA TWP.*	no data
3	FOREST LAKE TWP.*	no data
4	HILLTOP	no data
5	LAND FALL	no data
6	NEW MARKET TWP.	no data
7	NEW PRAGUE	no data
8	NEW SCANDIA*	no data
9	YOUNG AMERICA TWP.	no data
10	NOWTHEN*	no data
11	SCANDIA*	no data
12	GREENWOOD	4.49
13	MEDICINE LAKE	4.39
14	MINNETONKA BEACH	4.13
15	NEW MARKET*	3.31
16	SUNFISH LAKE	3.25
17	ORONO	3.04
18	WOODLAND	2.96
19	TONKA BAY	2.86
20	DEEPHAVEN	2.66
21	DENMARK TWP.	2.35
22	CEDAR LAKE TWP.	2.29
23	MEDINA	2.17
24	ST. LAWRENCE TWP.	2.01
25	CREDIT RIVER TWP.	1.94
26	DELLWOOD	1.89
27	GREENFIELD	1.83
28	INDEPENDENCE	1.75
29	MINNETRISTA	1.57
30	NORTH OAKS	1.55
31	LOUISVILLE	1.49
32	AFTON	1.41
33	SAND CREEK TWP.	1.41
34	HASSAN TWP.	1.38
35	HELENA TWP.	1.37
36	BLAKELEY TWP.	1.28
37	DAHLGREN TWP.	1.27
38	BAYTOWN TWP.	1.26
39	MAY TWP.	1.17
40	SPRING LAKE TWP.	1.16
41	HANOVER	1.16
42	BELLE PLAINE TWP.	1.11
43	GRANT*	1.09
44	PINE SPRINGS	1.05
45	HOLLYWOOD TWP.	1.04
46	WACONIA TWP.	1.03
47	LAKETOWN	1.02
48	SHOREWOOD	1.00
49	NINIGER TWP.	0.99
50	SAN FRANCISCO TWP.	0.97
51	BENTON TWP.	0.88

52	VICTORIA	0.85
53	WATERTOWN TWP.	0.83
54	LAKE ELMO	0.82
55	CAMDEN TWP.	0.81
56	HANCOCK	0.81
57	YOUNG AMERICA*	0.78
58	EXCELSIOR	0.77
59	DOUGLAS TWP.	0.74
60	WEST LAKELAND TWP.	0.72
61	EUREKA TWP.	0.69
62	MAHOTMEDI	0.67
63	EDINA	0.67
64	MENDOTA HEIGHTS	0.65
65	RANDOLPH TWP.	0.65
66	BIRCHWOOD VILLAGE	0.65
67	MARINE ON ST. CROIX	0.63
68	MASHAN TWP.	0.63
69	STILLWATER TWP.	0.63
70	VERMILLION TWP.	0.62
71	HAMPTON TWP.	0.59
72	WAYZATA	0.59
73	ST. MARYS POINT	0.54
74	CHANHASSEN	0.54
75	HAM LAKE	0.54
76	WATERFORD	0.54
77	GREY CLOUD ISLAND TWP.	0.52
78	LAKELAND SHORES	0.44
79	SPRING PARK	0.42
80	GREENVALE TWP.	0.39
81	EDEN PRAIRIE	0.35
82	CASTLE ROCK TWP.	0.35
83	FOREST LAKE*	0.32
84	MINNETONKA	0.32
85	FALCON HEIGHTS	0.29
86	CORCORAN	0.29
87	RAVENA TWP.	0.27
88	ELKO NEW MARKET*	0.24
89	COLUMBUS*	0.24
90	PRIOR LAKE	0.20
91	CARVER	0.18
92	LONG LAKE	0.18
93	OAK GROVE*	0.18
94	PLYMOUTH	0.18
95	LINO LAKES	0.16
96	GEM LAKE	0.12
97	GOLDEN VALLEY	0.11
98	EMPIRE TWP.	0.10
99	WOODBURY	0.10
100	MINNEAPOLIS	0.07
101	WHITE BEAR TWP.	0.07
102	SAVAGE	0.03
103	MENDOTA	0.02
104	HUGO	0.01

105	SCIOTA TWP.	0.01
106	ARDEN HILLS	(0.00)
107	MAPLE GROVE	(0.00)
108	RANDOLPH	(0.02)
109	ROGERS	(0.03)
110	STILLWATER	(0.03)
111	ANDOVER	(0.06)
112	ST. LOUIS PARK	(0.06)
113	LAKEVILLE	(0.06)
114	SHOREVIEW	(0.07)
115	DAYTON	(0.08)
116	ST. ANTHONY	(0.11)
117	MAYER	(0.11)
118	LINWOOD TWP.	(0.11)
119	LAKE ST. CROIX BEACH	(0.12)
120	MOUND	(0.12)
121	ROSEMOUNT	(0.13)
122	BETHEL	(0.13)
123	WACONIA	(0.13)
124	CIRCLE PINES	(0.13)
125	ST. PAUL	(0.13)
126	CENTERVILLE	(0.15)
127	OSSEO	(0.16)
128	SHAKOPEE	(0.16)
129	EAST BETHEL	(0.18)
130	MAPLE PLAIN	(0.18)
131	CHAMPLIN	(0.19)
132	NEWPORT	(0.19)
133	BAYPORT	(0.19)
134	NEW TRIER	(0.20)
135	EAGAN	(0.20)
136	COATES	(0.20)
137	HOPKINS	(0.20)
138	BROOKLN PARK	(0.21)
139	ROSEVILLE	(0.21)
140	WHITE BEAR LAKE	(0.21)
141	ST. BONIFACIOUS	(0.23)
142	BLOOMINGTON	(0.23)
143	COTTAGE GROVE	(0.23)
144	LAKELAND	(0.24)
145	MAPLEWOOD	(0.24)
146	NEW BRIGHTON	(0.24)
147	RICHFIELD	(0.24)
148	VADNAIS HEIGHTS	(0.24)
149	WEST ST. PAUL	(0.24)
150	BLAINE	(0.25)
151	HAMPTON	(0.26)
152	NORTH ST. PAUL	(0.26)
153	RAMSEY	(0.27)
154	INVER GROVE	(0.28)
155	CHASKA*	(0.28)
156	SOUTH ST. PAUL	(0.28)
157	ROBBINSDALE	(0.29)

158	NEW HOPE	(0.33)
159	LILYDALE	(0.33)
160	FRIDLEY	(0.34)
161	APPLE VALLEY	(0.34)
162	COLOGNE	(0.34)
163	WATERTOWN	(0.35)
164	ANOKA	(0.36)
165	LEXINGTON	(0.36)
166	FARMINGTON	(0.36)
167	BURNSVILLE	(0.36)
168	WILLERNIE	(0.37)
169	NEW GERMANY	(0.38)
170	COLUMBIA HEIGHTS	(0.38)
171	MOUNDS VIEW	(0.38)
172	ST. PAUL PARK	(0.39)
173	OAKDALE	(0.39)
174	LORETTO	(0.40)
175	JORDAN	(0.41)
176	LAUDERDALE	(0.41)
177	VERMILLION	(0.41)
178	CRYSTAL	(0.42)
179	OAK PARK HEIGHTS	(0.42)
180	COON RAPIDS	(0.43)
181	HASTINGS	(0.43)
182	SPRING LAKE PARK	(0.45)
183	BROOKLYN CENTER	(0.51)
184	LITTLE CANADA	(0.55)
185	HAMBURG	(0.55)
186	ST. FANCIS	(0.56)
187	BELLE PLAINE	(0.59)
188	NORTHFIELD	(0.62)
189	NORWOOD YOUNG AMERICA*	(0.65)
190	MIESVILLE	(0.81)
191	JACKSON TWP.	(1.02)
192	ROCKFORD	(2.53)

STRONG INCREASE OF INVESTMENT >1.00	37
MODERATE INCREASE OF INVESTMENT .51 - 1.00	29
WEAK INCREASE OF INVESTMENT .01 - .50	28
MEDIAN .00	0
WEAK INCREASE OF DISINVESTMENT (.01) - (.50)	77
MODERATE INCREASE OF DISINVESTMENT (.51) - (1.00)	8
STRONG INCREASE OF DISINVESTMENT <(1.00)	2
NO DATA	11
TOTAL	192

TABLE 26: HYPOTHESIS #2- MEDIAN HOME VALUE 1980-2010 - Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	BURNS TWP.*	no data
2	CHASKA TWP.*	no data
3	LAND FALL	no data
4	NEW MARKET TWP.	no data
5	NEW SCANDIA*	no data
6	NORTHFIELD	no data
7	YOUNG AMERICA TWP.	no data
8	NOWTHEN*	no data
9	SCANDIA*	no data
10	MINNETONKA BEACH	5.35
11	SUNFISH LAKE	4.81
12	GREENWOOD	4.14
13	WOODLAND	3.86
14	MEDICINE LAKE	3.71
15	ORONO	2.96
16	TONKA BAY	2.77
17	DELLWOOD	2.62
18	DEEPHAVEN	2.39
19	NORTH OAKS	2.25
20	NEW MARKET*	2.04
21	DENMARK TWP.	2.01
22	CEDAR LAKE TWP.	2.00
23	INDEPENDENCE	1.92
24	BAYTOWN TWP.	1.91
25	MEDINA	1.88
26	MINNETRISTA	1.87
27	GREENFIELD	1.79
28	WEST LAKELAND TWP.	1.58
29	MAY TWP.	1.56
30	ST. LAWRENCE TWP.	1.56
31	AFTON	1.52
32	GRANT*	1.49
33	STILLWATER TWP.	1.43
34	CREDIT RIVER TWP.	1.42
35	BELLE PLAINE TWP.	1.39
36	HELENA TWP.	1.36
37	SPRING LAKE TWP.	1.35
38	LOUISVILLE	1.33
39	DAHLGREN TWP.	1.31
40	SAND CREEK TWP.	1.29
41	SAN FRANCISCO TWP.	1.27
42	SHOREWOOD	1.26
43	LAKE ELMO	1.26
44	HASSAN TWP.	1.22
45	WACONIA TWP.	1.21
46	WAYZATA	1.19
47	PINE SPRINGS	1.19
48	HANOVER	1.17
49	HANCOCK	1.13
50	VICTORIA	1.11
51	HAMPTON TWP.	1.11

52	LILYDALE	1.09
53	WATERTOWN TWP.	1.08
54	GREENVALE TWP.	1.08
55	CAMDEN TWP.	1.06
56	BLAKELEY TWP.	1.05
57	EUREKA TWP.	1.04
58	HOLLYWOOD TWP.	1.04
59	EDINA	1.03
60	DOUGLAS TWP.	1.02
61	BENTON TWP.	0.99
62	MASHAN TWP.	0.98
63	RANDOLPH TWP.	0.94
64	NINIGER TWP.	0.92
65	LAKETOWN	0.88
66	MARINE ON ST. CROIX	0.88
67	EXCELSIOR	0.82
68	VERMILLION TWP.	0.79
69	YOUNG AMERICA*	0.75
70	MENDOTA HEIGHTS	0.75
71	MAHOTMEDI	0.72
72	CASTLE ROCK TWP.	0.72
73	CHANHASSEN	0.71
74	BIRCHWOOD VILLAGE	0.67
75	CORCORAN	0.67
76	LAKELAND SHORES	0.66
77	SPRING PARK	0.59
78	SCIOTA TWP.	0.58
79	EDEN PRAIRIE	0.52
80	HAM LAKE	0.50
81	WATERFORD	0.48
82	RAVENA TWP.	0.46
83	ROGERS	0.46
84	ELKO NEW MARKET*	0.46
85	MINNETONKA	0.44
86	GREY CLOUD ISLAND TWP.	0.41
87	PLYMOUTH	0.40
88	COLUMBUS*	0.39
89	CARVER	0.37
90	LINO LAKES	0.36
91	EMPIRE TWP.	0.34
92	ST. MARYS POINT	0.34
93	PRIOR LAKE	0.29
94	WOODBURY	0.29
95	FALCON HEIGHTS	0.29
96	LAKEVILLE	0.28
97	OAK GROVE*	0.28
98	SAVAGE	0.23
99	HUGO	0.23
100	ARDEN HILLS	0.22
101	JACKSON TWP.	0.18
102	CHASKA*	0.17
103	FOREST LAKE*	0.16
104	WHITE BEAR TWP.	0.16
105	STILLWATER	0.15

106	ANDOVER	0.13
107	LONG LAKE	0.12
108	GOLDEN VALLEY	0.10
109	GEM LAKE	0.10
110	ROSEMOUNT	0.10
111	DAYTON	0.09
112	MAPLE GROVE	0.09
113	WACONIA	0.08
114	LINWOOD TWP.	0.07
115	EAST BETHEL	0.06
116	SHOREVIEW	0.06
117	ST. BONIFACIOUS	0.06
118	NEW TRIER	0.03
119	EAGAN	0.02
120	CENTERVILLE	0.01
121	LORETTO	(0.02)
122	INVER GROVE	(0.02)
123	VADNAIS HEIGHTS	(0.03)
124	SHAKOPEE	(0.03)
125	ST. ANTHONY	(0.05)
126	ST. LOUIS PARK	(0.05)
127	MINNEAPOLIS	(0.05)
128	MAPLE PLAIN	(0.05)
129	RANDOLPH	(0.06)
130	LITTLE CANADA	(0.06)
131	OAK PARK HEIGHTS	(0.07)
132	FARMINGTON	(0.08)
133	BETHEL	(0.08)
134	LAKELAND	(0.09)
135	MAYER	(0.10)
136	MOUND	(0.10)
137	CHAMPLIN	(0.10)
138	WATERTOWN	(0.11)
139	LAKE ST. CROIX BEACH	(0.11)
140	RAMSEY	(0.11)
141	BURNSVILLE	(0.11)
142	JORDAN	(0.11)
143	BAYPORT	(0.11)
144	HAMPTON	(0.12)
145	BLAINE	(0.12)
146	ROSEVILLE	(0.13)
147	BLOOMINGTON	(0.13)
148	MENDOTA	(0.14)
149	COLOGNE	(0.14)
150	NEW BRIGHTON	(0.15)
151	APPLE VALLEY	(0.15)
152	COTTAGE GROVE	(0.15)
153	HOPKINS	(0.15)
154	MAPLEWOOD	(0.16)
155	COATES	(0.16)
156	NEW PRAGUE	(0.17)
157	OAKDALE	(0.17)
158	ST. FANCIS	(0.17)

159	BROOKLN PARK	(0.19)
160	WHITE BEAR LAKE	(0.19)
161	RICHFIELD	(0.20)
162	CIRCLE PINES	(0.21)
163	OSSEO	(0.22)
164	ST. PAUL	(0.23)
165	MOUNDS VIEW	(0.23)
166	WEST ST. PAUL	(0.23)
167	HASTINGS	(0.24)
168	NEWPORT	(0.24)
169	BELLE PLAINE	(0.25)
170	NEW HOPE	(0.25)
171	VERMILLION	(0.26)
172	NORTH ST. PAUL	(0.26)
173	LEXINGTON	(0.27)
174	SOUTH ST. PAUL	(0.29)
175	ANOKA	(0.32)
176	ROBBINSDALE	(0.32)
177	COON RAPIDS	(0.32)
178	WILLERNIE	(0.33)
179	FRIDLEY	(0.35)
180	LAUDERDALE	(0.35)
181	SPRING LAKE PARK	(0.35)
182	ST. PAUL PARK	(0.36)
183	MIESVILLE	(0.39)
184	HAMBURG	(0.40)
185	CRYSTAL	(0.41)
186	NORWOOD YOUNG AMERICA*	(0.42)
187	COLUMBIA HEIGHTS	(0.44)
188	NEW GERMANY	(0.44)
189	BROOKLYN CENTER	(0.52)
190	ROCKFORD	(1.15)
191	HILLTOP	(1.46)
192	FOREST LAKE TWP.*	(1.50)

STRONG INCREASE OF INVESTMENT >1.00	51
MODERATE INCREASE OF INVESTMENT .51 - 1.00	20
WEAK INCREASE OF INVESTMENT .01 - .50	40
MEDIAN .00	0
WEAK INCREASE OF DISINVESTMENT (.01) - (.50)	68
MODERATE INCREASE OF DISINVESTMENT (.51) - (1.00)	1
STRONG INCREASE OF DISINVESTMENT <(1.00)	3
NO DATA	9
TOTAL	192

TABLE 27: HYPOTHESIS #2- MEDIAN GROSS RENT 1980-1990 - Z-SCORES RANKED

#	ALL SUBURBS	Z- SCORE
1	BLAKELEY TWP.	no data
2	ELKO NEW MARKET*	no data
3	HANOVER	no data
4	LAKELAND SHORES	no data
5	NEW TRIER	no data
6	NORTH OAKS	no data
7	NORTHFIELD	no data
8	PINE SPRINGS	no data
9	RANDOLPH TWP.	no data
10	ST. MARYS POINT	no data
11	NOWTHEN*	no data
12	SCANDIA*	no data
13	MAY TWP.	4.75
14	MINNETONKA BEACH	4.54
15	DAYTON	2.87
16	MENDOTA	2.40
17	DEEPHAVEN	2.15
18	INDEPENDENCE	2.03
19	GRANT*	1.95
20	ARDEN HILLS	1.49
21	BURNS TWP.*	1.42
22	CAMDEN TWP.	1.41
23	SUNFISH LAKE	1.39
24	LILYDALE	1.24
25	GREY CLOUD ISLAND TWP.	1.23
26	WOODBURY	1.16
27	MEDINA	1.10
28	RAVENA TWP.	1.05
29	CHASKA TWP.*	1.03
30	EMPIRE TWP.	1.03
31	NINIGER TWP.	1.02
32	RAMSEY	0.98
33	GREENWOOD	0.97
34	ORONO	0.89
35	WHITE BEAR TWP.	0.88
36	TONKA BAY	0.86
37	ROCKFORD	0.85
38	GEM LAKE	0.84
39	MINNETONKA	0.83
40	EDEN PRAIRIE	0.74
41	SAVAGE	0.73
42	EAGAN	0.66
43	CREDIT RIVER TWP.	0.63
44	LAKEVILLE	0.63
45	CARVER	0.59
46	PLYMOUTH	0.59
47	COON RAPIDS	0.53
48	WHITE BEAR LAKE	0.53
49	ANDOVER	0.51
50	APPLE VALLEY	0.46
51	MAPLE PLAIN	0.46

52	VICTORIA	0.43
53	LINO LAKES	0.38
54	MAHOTMEDI	0.37
55	PRIOR LAKE	0.37
56	VERMILLION	0.37
57	BAYPORT	0.37
58	BURNSVILLE	0.35
59	EDINA	0.33
60	ST. LOUIS PARK	0.31
61	BLOOMINGTON	0.29
62	MENDOTA HEIGHTS	0.29
63	VADNAIS HEIGHTS	0.29
64	BLAINE	0.26
65	EUREKA TWP.	0.21
66	ST. FANCIS	0.21
67	SPRING PARK	0.20
68	CHASKA*	0.19
69	INVER GROVE	0.19
70	COLUMBUS*	0.18
71	NEW HOPE	0.17
72	SAND CREEK TWP.	0.17
73	LONG LAKE	0.16
74	SHOREVIEW	0.16
75	LITTLE CANADA	0.15
76	ROBBINSDALE	0.13
77	OAK PARK HEIGHTS	0.12
78	GOLDEN VALLEY	0.11
79	BROOKLYN CENTER	0.08
80	CHANHASSEN	0.08
81	FOREST LAKE TWP.*	0.08
82	MAPLEWOOD	0.07
83	WAYZATA	0.07
84	GREENFIELD	0.06
85	NEW MARKET*	0.06
86	LEXINGTON	0.04
87	CRYSTAL	0.03
88	ROSEVILLE	0.02
89	HOPKINS	0.01
90	CHAMPLIN	0.00
91	LOUISVILLE	0.00
92	SHAKOPEE	(0.02)
93	EAST BETHEL	(0.04)
94	MOUND	(0.04)
95	MINNETRISTA	(0.05)
96	LAKE ELMO	(0.07)
97	LAUDERDALE	(0.07)
98	MASHAN TWP.	(0.07)
99	NORTH ST. PAUL	(0.08)
100	COLUMBIA HEIGHTS	(0.09)
101	FRIDLEY	(0.10)
102	MAPLE GROVE	(0.10)
103	STILLWATER	(0.10)
104	LAND FALL	(0.11)

105	WACONIA	(0.11)
106	WEST ST. PAUL	(0.11)
107	MOUNDS VIEW	(0.12)
108	NEW BRIGHTON	(0.15)
109	ROSEMOUNT	(0.16)
110	SCIOTA TWP.	(0.16)
111	ST. PAUL PARK	(0.16)
112	BROOKLN PARK	(0.17)
113	HAMPTON TWP.	(0.17)
114	NEWPORT	(0.17)
115	OSSEO	(0.18)
116	SPRING LAKE TWP.	(0.18)
117	RICHFIELD	(0.19)
118	ST. BONIFACIOUS	(0.20)
119	HASTINGS	(0.22)
120	EXCELSIOR	(0.23)
121	OAKDALE	(0.23)
122	MINNEAPOLIS	(0.24)
123	ST. PAUL	(0.24)
124	ANOKA	(0.25)
125	SPRING LAKE PARK	(0.26)
126	WATERFORD	(0.26)
127	SOUTH ST. PAUL	(0.26)
128	WILLERNIE	(0.26)
129	BELLE PLAINE TWP.	(0.27)
130	WATERTOWN TWP.	(0.28)
131	CORCORAN	(0.29)
132	DENMARK TWP.	(0.32)
133	COTTAGE GROVE	(0.33)
134	HAM LAKE	(0.33)
135	HELENA TWP.	(0.33)
136	MARINE ON ST. CROIX	(0.33)
137	YOUNG AMERICA*	(0.34)
138	NEW SCANDIA*	(0.35)
139	WACONIA TWP.	(0.35)
140	FOREST LAKE*	(0.37)
141	ST. ANTHONY	(0.39)
142	FALCON HEIGHTS	(0.40)
143	FARMINGTON	(0.41)
144	WEST LAKELAND TWP.	(0.44)
145	ROGERS	(0.45)
146	LAKE ST. CROIX BEACH	(0.47)
147	LAKELAND	(0.50)
148	HILLTOP	(0.53)
149	OAK GROVE*	(0.55)
150	SHOREWOOD	(0.56)
151	CASTLE ROCK TWP.	(0.57)
152	WOODLAND	(0.61)
153	BELLE PLAINE	(0.62)
154	GREENVALE TWP.	(0.64)
155	MEDICINE LAKE	(0.64)
156	NEW MARKET TWP.	(0.70)
157	LINWOOD TWP.	(0.71)
158	DAHLGREN TWP.	(0.76)

159	HAMPTON	(0.78)
160	HUGO	(0.83)
161	LORETTO	(0.84)
162	VERMILLION TWP.	(0.84)
163	ST. LAWRENCE TWP.	(0.85)
164	BIRCHWOOD VILLAGE	(0.89)
165	NORWOOD YOUNG AMERICA*	(0.89)
166	LAKETOWN	(0.91)
167	STILLWATER TWP.	(0.91)
168	BENTON TWP.	(0.93)
169	AFTON	(0.95)
170	CENTERVILLE	(0.98)
171	COLOGNE	(0.98)
172	COATES	(0.99)
173	HAMBURG	(0.99)
174	RANDOLPH	(1.06)
175	JORDAN	(1.07)
176	MAYER	(1.07)
177	BETHEL	(1.12)
178	HANCOCK	(1.12)
179	HOLLYWOOD TWP.	(1.12)
180	NEW PRAGUE	(1.12)
181	JACKSON TWP.	(1.20)
182	MIESVILLE	(1.21)
183	WATERTOWN	(1.27)
184	BAYTOWN TWP.	(1.29)
185	HASSAN TWP.	(1.35)
186	NEW GERMANY	(1.52)
187	YOUNG AMERICA TWP.	(1.54)
188	SAN FRANCISCO TWP.	(1.93)
189	CEDAR LAKE TWP.	(2.08)
190	DOUGLAS TWP.	(2.95)
191	CIRCLE PINES	(2.96)
192	DELLWOOD	(3.48)

STRONG INCREASE OF INVESTMENT >1.00	19
MODERATE INCREASE OF INVESTMENT .51 - 1.00	18
WEAK INCREASE OF INVESTMENT .01 - .50	40
MEDIAN .00	2
WEAK INCREASE OF DISINVESTMENT (.01) - (.50)	55
MODERATE INCREASE OF DISINVESTMENT (.51) - (1.00)	27
STRONG INCREASE OF DISINVESTMENT <(1.00)	19
NO DATA	12
TOTAL	192

TABLE 28: HYPOTHESIS #2- MEDIAN GROSS RENT 1990-2000 - Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	GRANT*	no data
2	LAKELAND SHORES	no data
3	NEW PRAGUE	no data
4	NORTHFIELD	no data
5	PINE SPRINGS	no data
6	RANDOLPH TWP.	no data
7	ROCKFORD	no data
8	YOUNG AMERICA TWP.	no data
9	NOWTHEN*	no data
10	SCANDIA*	no data
11	CEDAR LAKE TWP.	6.26
12	AFTON	4.79
13	MINNETRISTA	2.05
14	HANCOCK	1.84
15	BAYTOWN TWP.	1.67
16	DOUGLAS TWP.	1.67
17	CORCORAN	1.57
18	SHOREWOOD	1.57
19	SAN FRANCISCO TWP.	1.50
20	HASSAN TWP.	1.40
21	JACKSON TWP.	1.39
22	BIRCHWOOD VILLAGE	1.31
23	RAMSEY	1.26
24	NEW MARKET*	1.25
25	STILLWATER TWP.	1.25
26	LILYDALE	1.25
27	EUREKA TWP.	1.23
28	DELLWOOD	1.06
29	ST. ANTHONY	1.05
30	WOODBURY	0.99
31	ST. LAWRENCE TWP.	0.85
32	HOLLYWOOD TWP.	0.84
33	COLUMBUS*	0.82
34	FOREST LAKE TWP.*	0.80
35	LAKELAND	0.72
36	MINNETONKA	0.54
37	ORONO	0.51
38	WOODLAND	0.51
39	PLYMOUTH	0.48
40	GEM LAKE	0.43
41	VICTORIA	0.39
42	WACONIA	0.37
43	EDEN PRAIRIE	0.35
44	MENDOTA HEIGHTS	0.34
45	INVER GROVE	0.32
46	EMPIRE TWP.	0.30
47	WACONIA	0.29
48	BENTON TWP.	0.27
49	SHAKOPEE	0.27
50	WATERTOWN TWP.	0.27
51	BELLE PLAINE TWP.	0.26

52	BLAKELEY TWP.	0.26
53	OAKDALE	0.26
54	RAVENA TWP.	0.26
55	EDINA	0.25
56	CENTERVILLE	0.24
57	CIRCLE PINES	0.22
58	WAYZATA	0.22
59	BURNSVILLE	0.20
60	RANDOLPH	0.20
61	SPRING LAKE PARK	0.20
62	EAGAN	0.19
63	COATES	0.19
64	JORDAN	0.19
65	COTTAGE GROVE	0.14
66	LOUISVILLE	0.12
67	HOPKINS	0.11
68	WEST LAKELAND TWP.	0.11
69	BROOKLN PARK	0.10
70	LAKEVILLE	0.09
71	SHOREVIEW	0.09
72	CHASKA*	0.07
73	NORWOOD YOUNG AMERICA*	0.07
74	GREENWOOD	0.06
75	MAPLE GROVE	0.05
76	RICHFIELD	0.05
77	ROSEVILLE	0.05
78	SPRING PARK	0.05
79	COON RAPIDS	0.05
80	BLOOMINGTON	0.04
81	MAPLEWOOD	0.02
82	NEW BRIGHTON	0.02
83	WHITE BEAR LAKE	0.02
84	WILLERNIE	0.01
85	ST. LOUIS PARK	(0.01)
86	VADNAIS HEIGHTS	(0.02)
87	CRYSTAL	(0.04)
88	NEW HOPE	(0.06)
89	BLAINE	(0.07)
90	ST. BONIFACIOUS	(0.07)
91	CASTLE ROCK TWP.	(0.08)
92	ANDOVER	(0.09)
93	CARVER	(0.09)
94	FARMINGTON	(0.10)
95	SAVAGE	(0.10)
96	SPRING LAKE TWP.	(0.10)
97	ROSEMOUNT	(0.11)
98	ANOKA	(0.11)
99	WATERTOWN	(0.11)
100	NORTH ST. PAUL	(0.12)
101	APPLE VALLEY	(0.13)
102	LAUDERDALE	(0.15)
103	MINNEAPOLIS	(0.15)
104	STILLWATER	(0.15)

105	CAMDEN TWP.	(0.15)
106	FRIDLEY	(0.15)
107	MIESVILLE	(0.15)
108	CHANHASSEN	(0.16)
109	HASTINGS	(0.17)
110	MAHOTMEDI	(0.17)
111	GOLDEN VALLEY	(0.17)
112	LITTLE CANADA	(0.17)
113	OSSEO	(0.18)
114	GREENVALE TWP.	(0.19)
115	DENMARK TWP.	(0.19)
116	FOREST LAKE*	(0.19)
117	NEW GERMANY	(0.19)
118	SOUTH ST. PAUL	(0.19)
119	BAYPORT	(0.21)
120	EXCELSIOR	(0.21)
121	ST. PAUL PARK	(0.21)
122	ST. PAUL	(0.21)
123	LONG LAKE	(0.22)
124	NEW SCANDIA*	(0.22)
125	PRIOR LAKE	(0.23)
126	MOUNDS VIEW	(0.23)
127	WHITE BEAR TWP.	(0.23)
128	HAM LAKE	(0.24)
129	LINO LAKES	(0.27)
130	OAK PARK HEIGHTS	(0.27)
131	ST. FANCIS	(0.27)
132	CHAMPLIN	(0.28)
133	WEST ST. PAUL	(0.28)
134	NEWPORT	(0.29)
135	BROOKLYN CENTER	(0.30)
136	MAYER	(0.30)
137	BELLE PLAINE	(0.33)
138	GREENFIELD	(0.34)
139	MARINE ON ST. CROIX	(0.35)
140	ROBBINSDALE	(0.36)
141	ARDEN HILLS	(0.37)
142	CREDIT RIVER TWP.	(0.37)
143	BETHEL	(0.41)
144	COLUMBIA HEIGHTS	(0.44)
145	FALCON HEIGHTS	(0.44)
146	HAMBURG	(0.44)
147	MAPLE PLAIN	(0.44)
148	TONKA BAY	(0.44)
149	INDEPENDENCE	(0.44)
150	COLOGNE	(0.45)
151	VERMILLION TWP.	(0.45)
152	VERMILLION	(0.46)
153	LAKE ST. CROIX BEACH	(0.47)
154	MEDICINE LAKE	(0.47)
155	NEW MARKET TWP.	(0.47)
156	GREY CLOUD ISLAND TWP.	(0.48)
157	HELENA TWP.	(0.48)
158	HAMPTON TWP.	(0.51)

159	SCIOTA TWP.	(0.57)
160	ROGERS	(0.59)
161	LEXINGTON	(0.60)
162	HILLTOP	(0.61)
163	OAK GROVE*	(0.62)
164	EAST BETHEL	(0.64)
165	DAHLGREN TWP.	(0.65)
166	HAMPTON	(0.65)
167	MOUND	(0.73)
168	SAND CREEK TWP.	(0.76)
169	HUGO	(0.78)
170	NORTH OAKS	(0.80)
171	MASHAN TWP.	(0.81)
172	BURNS TWP.*	(0.82)
173	CHASKA TWP.*	(0.82)
174	HANOVER	(0.82)
175	LAKETOWN	(0.85)
176	MINNETONKA BEACH	(0.87)
177	LORETTO	(0.90)
178	YOUNG AMERICA*	(0.91)
179	NEW TRIER	(0.98)
180	WATERFORD	(0.98)
181	LINWOOD TWP.	(1.09)
182	LAKE ELMO	(1.14)
183	MEDINA	(1.38)
184	ST. MARYS POINT	(1.39)
185	LAND FALL	(1.63)
186	NINIGER TWP.	(1.76)
187	MENDOTA	(1.92)
188	DEEPHAVEN	(1.92)
189	MAY TWP.	(2.23)
190	ELKO NEW MARKET*	(2.80)
191	DAYTON	(3.22)
192	SUNFISH LAKE	(3.80)

STRONG INCREASE OF INVESTMENT >1.00	19
MODERATE INCREASE OF INVESTMENT .51 - 1.00	9
WEAK INCREASE OF INVESTMENT .01 - .50	46
MEDIAN .00	0
WEAK INCREASE OF DISINVESTMENT (.01) - (.50)	73
MODERATE INCREASE OF DISINVESTMENT (.51) - (1.00)	23
STRONG INCREASE OF DISINVESTMENT <(1.00)	12
NO DATA	10
TOTAL	192

TABLE 29: HYPOTHESIS #2- MEDIAN GROSS RENT 2000-2010 - Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	BURNS TWP.*	no data
2	CHASKA TWP.*	no data
3	DELLWOOD	no data
4	DOUGLAS TWP.	no data
5	FOREST LAKE TWP.*	no data
6	GRANT*	no data
7	GREY CLOUD ISLAND TWP.	no data
8	HANOVER	no data
9	LAKELAND SHORES	no data
10	LAND FALL	no data
11	NEW MARKET TWP.	no data
12	NEW PRAGUE	no data
13	NEW SCANDIA*	no data
14	NORTHFIELD	no data
15	PINE SPRINGS	no data
16	ROCKFORD	no data
17	SAN FRANCISCO TWP.	no data
18	SUNFISH LAKE	no data
19	YOUNG AMERICA TWP.	no data
20	NOWTHEN*	no data
21	SCANDIA*	no data
22	ST. MARYS POINT	4.40
23	WOODLAND	4.00
24	WEST LAKELAND TWP.	3.85
25	BAYTOWN TWP.	3.68
26	ST. LAWRENCE TWP.	3.42
27	NORTH OAKS	3.37
28	DEEPHAVEN	3.01
29	BIRCHWOOD VILLAGE	2.60
30	CORCORAN	2.39
31	VICTORIA	2.37
32	HUGO	2.00
33	ELKO NEW MARKET*	1.98
34	GEM LAKE	1.94
35	EAST BETHEL	1.83
36	EUREKA TWP.	1.79
37	ARDEN HILLS	1.43
38	CAMDEN TWP.	1.23
39	OAK GROVE*	1.19
40	ROGERS	1.18
41	BENTON TWP.	1.13
42	RANDOLPH	1.12
43	BAYPORT	1.11
44	DAHLGREN TWP.	1.10
45	DAYTON	1.07
46	CASTLE ROCK TWP.	1.02
47	NEW TRIER	1.01
48	LAKE ST. CROIX BEACH	0.99
49	HAMPTON TWP.	0.99
50	SCIOTA TWP.	0.98
51	CIRCLE PINES	0.97

52	BLAKELEY TWP.	0.88
53	TONKA BAY	0.87
54	ORONO	0.86
55	NEW GERMANY	0.86
56	RAMSEY	0.79
57	LINWOOD TWP.	0.69
58	WACONIA TWP.	0.64
59	LAKETOWN	0.63
60	EMPIRE TWP.	0.62
61	HELENA TWP.	0.62
62	LINO LAKES	0.61
63	COATES	0.59
64	ANDOVER	0.56
65	ST. ANTHONY	0.56
66	MINNETONKA BEACH	0.53
67	LAKELAND	0.51
68	WHITE BEAR TWP.	0.50
69	SAVAGE	0.47
70	HASSAN TWP.	0.46
71	MAHOTMEDI	0.44
72	MEDICINE LAKE	0.43
73	OAK PARK HEIGHTS	0.41
74	COLOGNE	0.37
75	APPLE VALLEY	0.36
76	ROSEMOUNT	0.35
77	CREDIT RIVER TWP.	0.32
78	SPRING PARK	0.30
79	GREENFIELD	0.28
80	COTTAGE GROVE	0.27
81	LAKEVILLE	0.26
82	HAMPTON	0.25
83	FARMINGTON	0.25
84	LONG LAKE	0.24
85	MEDINA	0.24
86	BLAINE	0.22
87	CARVER	0.22
88	JACKSON TWP.	0.21
89	RANDOLPH TWP.	0.19
90	MAPLE GROVE	0.18
91	STILLWATER	0.18
92	GREENWOOD	0.15
93	HOLLYWOOD TWP.	0.15
94	COLUMBIA HEIGHTS	0.14
95	CHANHASSEN	0.14
96	HAM LAKE	0.14
97	FALCON HEIGHTS	0.11
98	SAND CREEK TWP.	0.10
99	CENTERVILLE	0.09
100	FOREST LAKE*	0.09
101	GOLDEN VALLEY	0.08
102	NEW MARKET*	0.08
103	WATERTOWN	0.08
104	LORETTO	0.07
105	VERMILLION	0.04

106	SPRING LAKE PARK	0.03
107	CHAMPLIN	(0.00)
108	MAY TWP.	(0.01)
109	CHASKA*	(0.02)
110	MENDOTA	(0.02)
111	BROOKLYN CENTER	(0.04)
112	LEXINGTON	(0.06)
113	MASHAN TWP.	(0.06)
114	SOUTH ST. PAUL	(0.07)
115	EDINA	(0.08)
116	LAUDERDALE	(0.08)
117	MINNEAPOLIS	(0.08)
118	SHAKOPEE	(0.08)
119	VERMILLION TWP.	(0.09)
120	ST. LOUIS PARK	(0.11)
121	ST. PAUL	(0.11)
122	BELLE PLAINE	(0.12)
123	WHITE BEAR LAKE	(0.12)
124	LILYDALE	(0.12)
125	GREENVALE TWP.	(0.13)
126	SHOREVIEW	(0.13)
127	WEST ST. PAUL	(0.14)
128	ROBBINSDALE	(0.14)
129	FRIDLEY	(0.14)
130	PRIOR LAKE	(0.15)
131	BETHEL	(0.16)
132	WOODBURY	(0.16)
133	WILLERNIE	(0.16)
134	ANOKA	(0.19)
135	HASTINGS	(0.19)
136	NORWOOD YOUNG AMERICA*	(0.19)
137	PLYMOUTH	(0.19)
138	OAKDALE	(0.21)
139	LAKE ELMO	(0.21)
140	INVER GROVE	(0.22)
141	LITTLE CANADA	(0.22)
142	VADNAIS HEIGHTS	(0.22)
143	AFTON	(0.23)
144	EXCELSIOR	(0.23)
145	MOUNDS VIEW	(0.23)
146	MAPLEWOOD	(0.24)
147	MIESVILLE	(0.25)
148	COON RAPIDS	(0.26)
149	EDEN PRAIRIE	(0.27)
150	CRYSTAL	(0.28)
151	BROOKLN PARK	(0.29)
152	BLOOMINGTON	(0.29)
153	MOUND	(0.29)
154	NEW BRIGHTON	(0.29)
155	NORTH ST. PAUL	(0.30)
156	HILLTOP	(0.31)
157	MAYER	(0.32)
158	HAMBURG	(0.32)

159	MAPLE PLAIN	(0.32)
160	INDEPENDENCE	(0.33)
161	WAYZATA	(0.33)
162	EAGAN	(0.34)
163	WATERFORD	(0.34)
164	NEW HOPE	(0.35)
165	ROSEVILLE	(0.35)
166	ST. FANCIS	(0.36)
167	OSSEO	(0.36)
168	ST. PAUL PARK	(0.36)
169	HOPKINS	(0.37)
170	BURNSVILLE	(0.38)
171	NINIGER TWP.	(0.38)
172	MENDOTA HEIGHTS	(0.39)
173	RICHFIELD	(0.41)
174	MINNETONKA	(0.43)
175	NEWPORT	(0.56)
176	HANCOCK	(0.60)
177	MARINE ON ST. CROIX	(0.62)
178	JORDAN	(0.63)
179	SHOREWOOD	(0.64)
180	BELLE PLAINE TWP.	(0.67)
181	WACONIA	(0.72)
182	YOUNG AMERICA*	(0.92)
183	RAVENA TWP.	(0.95)
184	WATERTOWN TWP.	(1.00)
185	COLUMBUS*	(1.09)
186	SPRING LAKE TWP.	(1.12)
187	ST. BONIFACIOUS	(1.13)
188	LOUISVILLE	(1.17)
189	STILLWATER TWP.	(1.20)
190	DENMARK TWP.	(1.22)
191	MINNETRISTA	(1.48)
192	CEDAR LAKE TWP.	(1.50)

STRONG INCREASE OF INVESTMENT >1.00	26
MODERATE INCREASE OF INVESTMENT .51 - 1.00	21
WEAK INCREASE OF INVESTMENT .01 - .50	38
MEDIAN .00	0
WEAK INCREASE OF DISINVESTMENT (.01) - (.50)	68
MODERATE INCREASE OF DISINVESTMENT (.51) - (1.00)	9
STRONG INCREASE OF DISINVESTMENT <(1.00)	9
NO DATA	21
TOTAL	192

TABLE 30: HYPOTHESIS #2- MEDIAN GROSS RENT 1980-2010 - Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	BLAKELEY TWP.	no data
2	BURNS TWP.*	no data
3	CHASKA TWP.*	no data
4	DELLWOOD	no data
5	ELKO NEW MARKET*	no data
6	GREY CLOUD ISLAND TWP.	no data
7	HANOVER	no data
8	LAKELAND SHORES	no data
9	NEW MARKET TWP.	no data
10	NEW SCANDIA*	no data
11	NEW TRIER	no data
12	PINE SPRINGS	no data
13	RANDOLPH TWP.	no data
14	SAN FRANCISCO TWP.	no data
15	ST. MARYS POINT	no data
16	SUNFISH LAKE	no data
17	YOUNG AMERICA TWP.	no data
18	NOWTHEN*	no data
19	SCANDIA*	no data
20	DOUGLAS TWP.	no data
21	FOREST LAKE TWP.*	no data
22	LAND FALL	no data
23	NORTH OAKS	no data
24	NORTHFIELD	no data
25	BAYTOWN TWP.	3.98
26	WOODLAND	3.94
27	WEST LAKELAND TWP.	3.65
28	ST. LAWRENCE TWP.	3.46
29	CORCORAN	3.05
30	BIRCHWOOD VILLAGE	2.89
31	DEEPHAVEN	2.75
32	VICTORIA	2.68
33	GRANT*	2.52
34	EUREKA TWP.	2.48
35	GEM LAKE	2.45
36	AFTON	1.96
37	RAMSEY	1.82
38	MINNETONKA BEACH	1.80
39	ARDEN HILLS	1.77
40	CAMDEN TWP.	1.67
41	ORONO	1.46
42	EAST BETHEL	1.42
43	HUGO	1.21
44	EMPIRE TWP.	1.16
45	BAYPORT	1.11
46	CEDAR LAKE TWP.	1.07
47	LILYDALE	1.02
48	ST. ANTHONY	0.96
49	TONKA BAY	0.94
50	BENTON TWP.	0.89
51	WOODBURY	0.82

52	RANDOLPH	0.79
53	NEW MARKET*	0.77
54	CASTLE ROCK TWP.	0.73
55	WHITE BEAR TWP.	0.71
56	ANDOVER	0.70
57	SAVAGE	0.69
58	LAKELAND	0.69
59	HASSAN TWP.	0.67
60	ROGERS	0.67
61	WACONIA	0.65
62	MAY TWP.	0.64
63	HAMPTON TWP.	0.63
64	OAK GROVE*	0.62
65	LINO LAKES	0.60
66	SCIOTA TWP.	0.59
67	GREENWOOD	0.55
68	LAKEVILLE	0.54
69	LAKE ST. CROIX BEACH	0.54
70	JACKSON TWP.	0.49
71	MAHOTMEDI	0.48
72	APPLE VALLEY	0.46
73	DAYTON	0.43
74	DAHLGREN TWP.	0.43
75	CARVER	0.40
76	SPRING PARK	0.40
77	CREDIT RIVER TWP.	0.35
78	OAK PARK HEIGHTS	0.30
79	PLYMOUTH	0.30
80	COATES	0.29
81	BLAINE	0.29
82	INDEPENDENCE	0.23
83	ROSEMOUNT	0.22
84	HELENA TWP.	0.22
85	EDEN PRAIRIE	0.21
86	COTTAGE GROVE	0.21
87	MINNETONKA	0.19
88	LONG LAKE	0.18
89	EDINA	0.18
90	MAPLE GROVE	0.17
91	HOLLYWOOD TWP.	0.16
92	NEW GERMANY	0.14
93	GREENFIELD	0.11
94	WHITE BEAR LAKE	0.10
95	CHASKA*	0.09
96	CHANHASSEN	0.08
97	STILLWATER	0.06
98	SHAKOPEE	0.05
99	SPRING LAKE PARK	0.04
100	INVER GROVE	0.04
101	FARMINGTON	0.03
102	GOLDEN VALLEY	0.03
103	EAGAN	0.02
104	ST. LOUIS PARK	0.01

105	SHOREWOOD	(0.01)
106	COON RAPIDS	(0.02)
107	SHOREVIEW	(0.02)
108	HANCOCK	(0.04)
109	VERMILLION	(0.06)
110	MEDINA	(0.07)
111	CIRCLE PINES	(0.08)
112	MEDICINE LAKE	(0.08)
113	MENDOTA HEIGHTS	(0.08)
114	MENDOTA	(0.11)
115	VADNAIS HEIGHTS	(0.11)
116	HAM LAKE	(0.12)
117	PRIOR LAKE	(0.12)
118	COLUMBIA HEIGHTS	(0.13)
119	BURNSVILLE	(0.13)
120	BLOOMINGTON	(0.15)
121	CHAMPLIN	(0.15)
122	OAKDALE	(0.15)
123	FOREST LAKE*	(0.16)
124	CENTERVILLE	(0.16)
125	BROOKLYN CENTER	(0.17)
126	WAYZATA	(0.17)
127	LINWOOD TWP.	(0.18)
128	LAUDERDALE	(0.18)
129	LAKETOWN	(0.20)
130	MAPLEWOOD	(0.20)
131	SAND CREEK TWP.	(0.24)
132	LITTLE CANADA	(0.25)
133	MINNEAPOLIS	(0.25)
134	COLOGNE	(0.25)
135	WILLERNIE	(0.25)
136	FRIDLEY	(0.26)
137	SOUTH ST. PAUL	(0.27)
138	FALCON HEIGHTS	(0.28)
139	ROBBINSDALE	(0.28)
140	CRYSTAL	(0.29)
141	BROOKLN PARK	(0.29)
142	HOPKINS	(0.30)
143	NEW HOPE	(0.30)
144	ROSEVILLE	(0.31)
145	ST. PAUL	(0.31)
146	WEST ST. PAUL	(0.33)
147	NEW BRIGHTON	(0.33)
148	ANOKA	(0.34)
149	HASTINGS	(0.36)
150	LEXINGTON	(0.36)
151	MINNETRISTA	(0.36)
152	MAPLE PLAIN	(0.37)
153	RAVENA TWP.	(0.38)
154	NORTH ST. PAUL	(0.39)
155	MOUNDS VIEW	(0.40)
156	HAMPTON	(0.40)
157	ST. FANCIS	(0.41)
158	EXCELSIOR	(0.42)

159	ROCKFORD	(0.43)
160	RICHFIELD	(0.45)
161	WATERTOWN	(0.47)
162	GREENVALE TWP.	(0.48)
163	NORWOOD YOUNG AMERICA*	(0.49)
164	OSSEO	(0.52)
165	MASHAN TWP.	(0.52)
166	ST. PAUL PARK	(0.53)
167	BELLE PLAINE	(0.53)
168	WACONIA	(0.55)
169	COLUMBUS*	(0.56)
170	BELLE PLAINE TWP.	(0.62)
171	NEW PRAGUE	(0.63)
172	VERMILLION TWP.	(0.65)
173	MOUND	(0.69)
174	LORETTO	(0.74)
175	NEWPORT	(0.77)
176	MIESVILLE	(0.79)
177	BETHEL	(0.81)
178	HILLTOP	(0.83)
179	LAKE ELMO	(0.84)
180	STILLWATER TWP.	(0.86)
181	MAYER	(0.88)
182	NINIGER TWP.	(0.91)
183	MARINE ON ST. CROIX	(0.92)
184	HAMBURG	(0.93)
185	JORDAN	(0.93)
186	WATERTOWN TWP.	(0.95)
187	WATERFORD	(0.95)
188	LOUISVILLE	(1.07)
189	SPRING LAKE TWP.	(1.22)
190	ST. BONIFACIOUS	(1.22)
191	DENMARK TWP.	(1.42)
192	YOUNG AMERICA*	(1.51)

STRONG INCREASE OF INVESTMENT >1.00	23
MODERATE INCREASE OF INVESTMENT .51 - 1.00	22
WEAK INCREASE OF INVESTMENT .01 - .50	35
MEDIAN .00	0
WEAK INCREASE OF DISINVESTMENT (.01) - (.50)	59
MODERATE INCREASE OF DISINVESTMENT (.51) - (1.00)	24
STRONG INCREASE OF DISINVESTMENT <(1.00)	5
NO DATA	24
TOTAL	192

TABLE 31: HYPOTHESIS #3 MEDIAN HOME VALUE (1980-1990)(1990-2000)-Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	LAND FALL	no data
2	NEW PRAGUE	no data
3	NORTHFIELD	no data
4	YOUNG AMERICA TWP.	no data
5	NOWTHEN*	no data
6	SCANDIA*	no data
7	HILLTOP	no data
8	GREENWOOD	4.24
9	MINNETONKA BEACH	3.91
10	WAYZATA	3.23
11	DEEPHAVEN	3.12
12	ORONO	2.16
13	TONKA BAY	2.03
14	GREENFIELD	2.02
15	BAYTOWN TWP.	1.99
16	PINE SPRINGS	1.90
17	WEST LAKELAND TWP.	1.82
18	MINNETRISTA	1.74
19	NORTH OAKS	1.67
20	SPRING PARK	1.59
21	ELKO NEW MARKET*	1.49
22	DELLWOOD	1.44
23	WOODLAND	1.43
24	ROGERS	1.43
25	YOUNG AMERICA*	1.42
26	SHOREWOOD	1.29
27	INDEPENDENCE	1.26
28	EXCELSIOR	1.26
29	PRIOR LAKE	1.03
30	NEW MARKET TWP.	0.98
31	MARINE ON ST. CROIX	0.96
32	BELLE PLAINE TWP.	0.93
33	SCIOTA TWP.	0.91
34	CHANHASSEN	0.91
35	GEM LAKE	0.75
36	SAVAGE	0.70
37	VICTORIA	0.69
38	DOUGLAS TWP.	0.67
39	RAVENA TWP.	0.66
40	SPRING LAKE TWP.	0.64
41	NINIGER TWP.	0.64
42	HAMPTON TWP.	0.63
43	JACKSON TWP.	0.60
44	RANDOLPH TWP.	0.57
45	MAY TWP.	0.56
46	HAMBURG	0.55
47	STILLWATER TWP.	0.54
48	EUREKA TWP.	0.53
49	MASHAN TWP.	0.53
50	COLOGNE	0.50

51	ST. BONIFACIOUS	0.49
52	MAHOTMEDI	0.48
53	FARMINGTON	0.44
54	EDEN PRAIRIE	0.43
55	LAKELAND	0.37
56	LAKELAND SHORES	0.36
57	WACONIA	0.36
58	STILLWATER	0.35
59	LOUISVILLE	0.35
60	LORETTO	0.33
61	EMPIRE TWP.	0.32
62	GREY CLOUD ISLAND TWP.	0.31
63	LAKETOWN	0.31
64	GRANT*	0.30
65	MENDOTA	0.28
66	MOUND	0.26
67	BELLE PLAINE	0.22
68	MINNETONKA	0.21
69	LAKEVILLE	0.20
70	LINO LAKES	0.20
71	MAPLE GROVE	0.18
72	CREDIT RIVER TWP.	0.17
73	CARVER	0.16
74	FOREST LAKE TWP.*	0.16
75	NEW GERMANY	0.14
76	OAK GROVE*	0.14
77	RAMSEY	0.13
78	WHITE BEAR TWP.	0.12
79	GREENVALE TWP.	0.10
80	LAKE ST. CROIX BEACH	0.09
81	CASTLE ROCK TWP.	0.08
82	EDINA	0.08
83	HAMPTON	0.07
84	HASSAN TWP.	0.07
85	ROSEMOUNT	0.05
86	ANDOVER	0.04
87	MIESVILLE	0.03
88	OAK PARK HEIGHTS	0.02
89	ST. FANCIS	0.02
90	PLYMOUTH	(0.01)
91	FALCON HEIGHTS	(0.01)
92	SHAKOPEE	(0.03)
93	BAYPORT	(0.04)
94	EAGAN	(0.05)
95	CHASKA*	(0.05)
96	HELENA TWP.	(0.05)
97	HAM LAKE	(0.06)
98	AFTON	(0.06)
99	CORCORAN	(0.07)
100	MEDINA	(0.10)
101	COTTAGE GROVE	(0.10)
102	WATERTOWN TWP.	(0.10)
103	WOODBURY	(0.11)

104	CIRCLE PINES	(0.13)
105	NEW SCANDIA*	(0.14)
106	LAKE ELMO	(0.15)
107	ST. LOUIS PARK	(0.16)
108	JORDAN	(0.16)
109	APPLE VALLEY	(0.19)
110	VERMILLION TWP.	(0.19)
111	BLOOMINGTON	(0.20)
112	CENTERVILLE	(0.22)
113	CHAMPLIN	(0.22)
114	GOLDEN VALLEY	(0.22)
115	MAYER	(0.23)
116	MAPLE PLAIN	(0.24)
117	NEW TRIER	(0.24)
118	EAST BETHEL	(0.25)
119	ST. MARYS POINT	(0.25)
120	SAN FRANCISCO TWP.	(0.27)
121	LONG LAKE	(0.27)
122	CEDAR LAKE TWP.	(0.28)
123	HOPKINS	(0.28)
124	COLUMBUS*	(0.28)
125	MINNEAPOLIS	(0.30)
126	NEW MARKET*	(0.30)
127	BURNS TWP.*	(0.31)
128	NORWOOD YOUNG AMERICA*	(0.34)
129	NEW HOPE	(0.35)
130	RICHFIELD	(0.37)
131	NEWPORT	(0.37)
132	ROSEVILLE	(0.38)
133	BROOKLN PARK	(0.38)
134	HASTINGS	(0.38)
135	WILLERNIE	(0.39)
136	CHASKA TWP.*	(0.40)
137	DAHLGREN TWP.	(0.40)
138	SOUTH ST. PAUL	(0.40)
139	WHITE BEAR LAKE	(0.42)
140	ANOKA	(0.42)
141	VERMILLION	(0.43)
142	WATERFORD	(0.43)
143	HANOVER	(0.43)
144	COON RAPIDS	(0.44)
145	ST. ANTHONY	(0.45)
146	LINWOOD TWP.	(0.46)
147	OAKDALE	(0.48)
148	DAYTON	(0.52)
149	CRYSTAL	(0.52)
150	MEDICINE LAKE	(0.52)
151	MAPLEWOOD	(0.53)
152	ROBBINSDALE	(0.54)
153	WEST ST. PAUL	(0.55)
154	ST. PAUL	(0.57)
155	OSSEO	(0.57)
156	WATERTOWN	(0.57)
157	LAUDERDALE	(0.58)

158	BIRCHWOOD VILLAGE	(0.58)
159	NORTH ST. PAUL	(0.60)
160	HANCOCK	(0.63)
161	BETHEL	(0.64)
162	BLAINE	(0.64)
163	FOREST LAKE*	(0.68)
164	FRIDLEY	(0.69)
165	BLAKELEY TWP.	(0.69)
166	SPRING LAKE PARK	(0.70)
167	SAND CREEK TWP.	(0.72)
168	WACONIA	(0.73)
169	NEW BRIGHTON	(0.75)
170	INVER GROVE	(0.75)
171	COATES	(0.76)
172	ST. PAUL PARK	(0.80)
173	COLUMBIA HEIGHTS	(0.80)
174	BURNSVILLE	(0.81)
175	SHOREVIEW	(0.84)
176	RANDOLPH	(0.87)
177	BROOKLYN CENTER	(0.91)
178	HOLLYWOOD TWP.	(0.92)
179	MOUNDS VIEW	(0.95)
180	VADNAIS HEIGHTS	(1.00)
181	DENMARK TWP.	(1.07)
182	BENTON TWP.	(1.09)
183	CAMDEN TWP.	(1.12)
184	HUGO	(1.13)
185	ROCKFORD	(1.20)
186	MENDOTA HEIGHTS	(1.24)
187	LEXINGTON	(1.25)
188	LITTLE CANADA	(1.32)
189	ARDEN HILLS	(1.33)
190	ST. LAWRENCE TWP.	(1.33)
191	SUNFISH LAKE	(1.37)
192	LILYDALE	(5.65)

STRONG ACCELERATION OF INVESTMENT >1.00	22
MODERATE ACCELERATION OF INVESTMENT .51 - 1.00	20
WEAK ACCELERATION OF INVESTMENT .01 - .50	40
MEDIAN .00	0
WEAK ACCELERATION OF DISINVESTMENT (.01) - (.50)	58
MODERATE ACCELERATION OF DISINVESTMENT (.51) - (1.00)	32
STRONG ACCELERATION OF DISINVESTMENT <(1.00)	13
NO DATA	7
TOTAL	192

TABLE 32: HYPOTHESIS #3 MEDIAN HOME VALUE
(1990-2000)(2000-2010)-Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	BURNS TWP.*	no data
2	CHASKA TWP.*	no data
3	FOREST LAKE TWP.*	no data
4	HILLTOP	no data
5	LAND FALL	no data
6	NEW MARKET TWP.	no data
7	NEW PRAGUE	no data
8	NEW SCANDIA*	no data
9	YOUNG AMERICA TWP.	no data
10	NOWTHEN*	no data
11	SCANDIA*	no data
12	MEDICINE LAKE	4.95
13	NEW MARKET*	4.59
14	GREENWOOD	3.55
15	DENMARK TWP.	2.81
16	ST. LAWRENCE TWP.	2.69
17	CEDAR LAKE TWP.	2.51
18	ORONO	2.38
19	CREDIT RIVER TWP.	2.35
20	MEDINA	2.35
21	TONKA BAY	2.26
22	DEEPHAVEN	2.04
23	BLAKELEY TWP.	1.61
24	SAND CREEK TWP.	1.60
25	SUNFISH LAKE	1.48
26	LOUISVILLE	1.48
27	MINNETONKA BEACH	1.47
28	HASSAN TWP.	1.44
29	WOODLAND	1.34
30	HELENA TWP.	1.29
31	GREENFIELD	1.26
32	DAHLGREN TWP.	1.21
33	AFTON	1.19
34	HOLLYWOOD TWP.	1.16
35	HANOVER	1.15
36	INDEPENDENCE	1.11
37	LAKETOWN	1.03
38	BENTON TWP.	0.92
39	WACONIA TWP.	0.91
40	NINIGER TWP.	0.85
41	ST. MARYS POINT	0.79
42	MENDOTA HEIGHTS	0.78
43	CAMDEN TWP.	0.71
44	SPRING LAKE TWP.	0.70
45	BIRCHWOOD VILLAGE	0.69
46	MINNETRISTA	0.68
47	WATERFORD	0.65
48	FOREST LAKE*	0.64
49	SAN FRANCISCO TWP.	0.60
50	DELLWOOD	0.55

51	HAM LAKE	0.55
52	GREY CLOUD ISLAND TWP.	0.53
53	HANCOCK	0.51
54	WATERTOWN TWP.	0.49
55	MAY TWP.	0.49
56	BELLE PLAINE TWP.	0.48
57	GRANT*	0.47
58	MAHOTMEDI	0.45
59	VERMILLION TWP.	0.42
60	YOUNG AMERICA*	0.41
61	PINE SPRINGS	0.36
62	EXCELSIOR	0.35
63	SHOREWOOD	0.32
64	VICTORIA	0.31
65	LONG LAKE	0.31
66	MINNEAPOLIS	0.28
67	FALCON HEIGHTS	0.27
68	LAKE ELMO	0.27
69	RANDOLPH	0.22
70	NORTH OAKS	0.21
71	DOUGLAS TWP.	0.21
72	EDINA	0.18
73	GOLDEN VALLEY	0.17
74	MENDOTA	0.14
75	RANDOLPH TWP.	0.13
76	ST. PAUL	0.12
77	COLUMBUS*	0.11
78	EUREKA TWP.	0.10
79	MINNETONKA	0.10
80	CHANHASSEN	0.08
81	MARINE ON ST. CROIX	0.07
82	LAKELAND SHORES	0.06
83	OSSEO	0.06
84	MASHAN TWP.	0.06
85	ARDEN HILLS	0.05
86	EDEN PRAIRIE	0.03
87	OAK GROVE*	0.03
88	HUGO	0.02
89	CIRCLE PINES	(0.00)
90	NEWPORT	(0.02)
91	SHOREVIEW	(0.02)
92	GEM LAKE	(0.03)
93	BETHEL	(0.03)
94	ST. LOUIS PARK	(0.04)
95	COATES	(0.05)
96	MAYER	(0.06)
97	BAYTOWN TWP.	(0.06)
98	ST. ANTHONY	(0.06)
99	WHITE BEAR TWP.	(0.07)
100	CARVER	(0.09)
101	ROBBINSDALE	(0.09)
102	PLYMOUTH	(0.10)
103	NORTH ST. PAUL	(0.10)

104	COLUMBIA HEIGHTS	(0.10)
105	WEST ST. PAUL	(0.11)
106	WOODBURY	(0.12)
107	BROOKLN PARK	(0.12)
108	WHITE BEAR LAKE	(0.12)
109	LINO LAKES	(0.13)
110	LAKE ST. CROIX BEACH	(0.14)
111	CASTLE ROCK TWP.	(0.14)
112	RAVENA TWP.	(0.14)
113	FRIDLEY	(0.14)
114	LEXINGTON	(0.15)
115	MAPLE GROVE	(0.15)
116	SOUTH ST. PAUL	(0.15)
117	DAYTON	(0.16)
118	CORCORAN	(0.16)
119	NEW BRIGHTON	(0.16)
120	PRIOR LAKE	(0.16)
121	HOPKINS	(0.18)
122	SPRING PARK	(0.18)
123	MOUND	(0.19)
124	RICHFIELD	(0.19)
125	ROSEVILLE	(0.19)
126	HAMPTON TWP.	(0.20)
127	ST. PAUL PARK	(0.20)
128	MAPLEWOOD	(0.20)
129	LINWOOD TWP.	(0.21)
130	CHAMPLIN	(0.22)
131	BLAINE	(0.23)
132	BROOKLYN CENTER	(0.24)
133	VADNAIS HEIGHTS	(0.25)
134	BAYPORT	(0.25)
135	EMPIRE TWP.	(0.26)
136	MAPLE PLAIN	(0.27)
137	ANOKA	(0.27)
138	ANDOVER	(0.28)
139	BLOOMINGTON	(0.28)
140	CENTERVILLE	(0.28)
141	CRYSTAL	(0.28)
142	COTTAGE GROVE	(0.29)
143	SHAKOPEE	(0.30)
144	MOUNDS VIEW	(0.30)
145	NEW GERMANY	(0.31)
146	WILLERNIE	(0.31)
147	NEW HOPE	(0.31)
148	LAUDERDALE	(0.32)
149	STILLWATER	(0.32)
150	SAVAGE	(0.36)
151	SPRING LAKE PARK	(0.36)
152	ELKO NEW MARKET*	(0.37)
153	INVER GROVE	(0.38)
154	NEW TRIER	(0.38)
155	EAST BETHEL	(0.39)
156	ROSEMOUNT	(0.40)
157	COON RAPIDS	(0.41)

158	HAMPTON	(0.41)
159	EAGAN	(0.42)
160	BURNSVILLE	(0.44)
161	WACONIA	(0.45)
162	RAMSEY	(0.46)
163	GREENVALE TWP.	(0.46)
164	VERMILLION	(0.46)
165	WATERTOWN	(0.47)
166	LAKELAND	(0.48)
167	STILLWATER TWP.	(0.49)
168	APPLE VALLEY	(0.50)
169	OAKDALE	(0.50)
170	LAKEVILLE	(0.51)
171	HASTINGS	(0.52)
172	ST. BONIFACIOUS	(0.65)
173	LILYDALE	(0.66)
174	COLOGNE	(0.66)
175	JORDAN	(0.68)
176	LITTLE CANADA	(0.76)
177	FARMINGTON	(0.76)
178	CHASKA*	(0.77)
179	WEST LAKELAND TWP.	(0.77)
180	NORWOOD YOUNG AMERICA*	(0.78)
181	OAK PARK HEIGHTS	(0.80)
182	HAMBURG	(0.81)
183	SCIOTA TWP.	(0.88)
184	LORETTO	(0.88)
185	WAYZATA	(0.91)
186	ROGERS	(0.94)
187	ST. FANCIS	(0.96)
188	BELLE PLAINE	(0.99)
189	MIESVILLE	(1.24)
190	NORTHFIELD	(1.73)
191	JACKSON TWP.	(2.48)
192	ROCKFORD	(3.65)

STRONG ACCELERATION OF INVESTMENT >1.00	26
MODERATE ACCELERATION OF INVESTMENT .51 - 1.00	16
WEAK ACCELERATION OF INVESTMENT .01 - .50	35
MEDIAN .00	0
WEAK ACCELERATION OF DISINVESTMENT (.01) - (.50)	80
MODERATE ACCELERATION OF DISINVESTMENT (.51) - (1.00)	20
STRONG ACCELERATION OF DISINVESTMENT <(1.00)	4
NO DATA	11
TOTAL	192

TABLE 33: HYPOTHESIS #3 MEDIAN GROSS RENT (1980-1990)(1990-2000)-Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	BLAKELEY TWP.	no data
2	ELKO NEW MARKET*	no data
3	GRANT*	no data
4	HANOVER	no data
5	LAKELAND SHORES	no data
6	NEW PRAGUE	no data
7	NEW TRIER	no data
8	NORTHFIELD	no data
9	PINE SPRINGS	no data
10	RANDOLPH TWP.	no data
11	ROCKFORD	no data
12	ST. MARYS POINT	no data
13	YOUNG AMERICA TWP.	no data
14	NOWTHEN*	no data
15	SCANDIA*	no data
16	NORTH OAKS	no data
17	CEDAR LAKE TWP.	5.36
18	AFTON	3.78
19	DOUGLAS TWP.	2.63
20	DELLWOOD	2.47
21	SAN FRANCISCO TWP.	2.00
22	HANCOCK	1.83
23	BAYTOWN TWP.	1.80
24	HASSAN TWP.	1.65
25	CIRCLE PINES	1.63
26	JACKSON TWP.	1.56
27	MINNETRISTA	1.44
28	SHOREWOOD	1.36
29	BIRCHWOOD VILLAGE	1.34
30	STILLWATER TWP.	1.32
31	CORCORAN	1.23
32	HOLLYWOOD TWP.	1.14
33	ST. LAWRENCE TWP.	1.02
34	ST. ANTHONY	0.92
35	NEW MARKET*	0.83
36	LAKELAND	0.75
37	EUREKA TWP.	0.74
38	RANDOLPH	0.67
39	JORDAN	0.66
40	WOODLAND	0.66
41	BENTON TWP.	0.65
42	CENTERVILLE	0.65
43	NEW GERMANY	0.63
44	COATES	0.62
45	WATERTOWN	0.56
46	FOREST LAKE TWP.*	0.51
47	MIESVILLE	0.50
48	NORWOOD YOUNG AMERICA*	0.49
49	COLUMBUS*	0.47

50	RAMSEY	0.38
51	WACONIA TWP.	0.38
52	WATERTOWN TWP.	0.32
53	MAYER	0.32
54	BELLE PLAINE TWP.	0.32
55	WACONIA	0.31
56	WEST LAKELAND TWP.	0.30
57	OAKDALE	0.29
58	BETHEL	0.28
59	SPRING LAKE PARK	0.27
60	COTTAGE GROVE	0.26
61	LILYDALE	0.24
62	CASTLE ROCK TWP.	0.23
63	HAMBURG	0.20
64	GREENVALE TWP.	0.19
65	SHAKOPEE	0.19
66	COLOGNE	0.18
67	BROOKLN PARK	0.16
68	WILLERNIE	0.14
69	FARMINGTON	0.14
70	RICHFIELD	0.13
71	INVER GROVE	0.13
72	WAYZATA	0.11
73	VERMILLION TWP.	0.11
74	WOODBURY	0.11
75	MENDOTA HEIGHTS	0.09
76	MAPLE GROVE	0.09
77	NEW BRIGHTON	0.09
78	BELLE PLAINE	0.08
79	LOUISVILLE	0.08
80	HOPKINS	0.07
81	FOREST LAKE*	0.05
82	VICTORIA	0.05
83	ST. BONIFACIOUS	0.05
84	ANOKA	0.05
85	PLYMOUTH	0.04
86	ROSEVILLE	0.03
87	DENMARK TWP.	0.03
88	NEW MARKET TWP.	0.03
89	NEW SCANDIA*	0.02
90	SPRING LAKE TWP.	0.02
91	MINNEAPOLIS	0.02
92	EDINA	0.00
93	ROSEMOUNT	0.00
94	SOUTH ST. PAUL	0.00
95	HAM LAKE	0.00
96	HASTINGS	(0.00)
97	MEDICINE LAKE	(0.00)
98	SHOREVIEW	(0.02)
99	MAPLEWOOD	(0.02)
100	ST. PAUL	(0.03)
101	EXCELSIOR	(0.03)
102	OSSEO	(0.03)

103	BURNSVILLE	(0.04)
104	MINNETONKA	(0.04)
105	NORTH ST. PAUL	(0.04)
106	CRYSTAL	(0.04)
107	CHASKA*	(0.05)
108	STILLWATER	(0.05)
109	FRIDLEY	(0.05)
110	HAMPTON	(0.05)
111	ST. PAUL PARK	(0.06)
112	SPRING PARK	(0.06)
113	LAUDERDALE	(0.06)
114	DAHLGREN TWP.	(0.07)
115	MARINE ON ST. CROIX	(0.08)
116	LAKE ST. CROIX BEACH	(0.09)
117	ORONO	(0.10)
118	FALCON HEIGHTS	(0.10)
119	MOUNDS VIEW	(0.10)
120	NEWPORT	(0.11)
121	BLOOMINGTON	(0.12)
122	GEM LAKE	(0.12)
123	HUGO	(0.12)
124	EDEN PRAIRIE	(0.13)
125	NEW HOPE	(0.13)
126	LAKETOWN	(0.13)
127	WEST ST. PAUL	(0.14)
128	CHANHASSEN	(0.15)
129	OAK GROVE*	(0.15)
130	HILLTOP	(0.16)
131	ST. LOUIS PARK	(0.16)
132	VADNAIS HEIGHTS	(0.16)
133	HELENA TWP.	(0.17)
134	GOLDEN VALLEY	(0.17)
135	BLAINE	(0.18)
136	ROGERS	(0.18)
137	LITTLE CANADA	(0.19)
138	CHAMPLIN	(0.19)
139	EAGAN	(0.20)
140	LORETTO	(0.20)
141	COON RAPIDS	(0.23)
142	LONG LAKE	(0.23)
143	OAK PARK HEIGHTS	(0.25)
144	BROOKLYN CENTER	(0.25)
145	LAKEVILLE	(0.25)
146	WHITE BEAR LAKE	(0.25)
147	COLUMBIA HEIGHTS	(0.26)
148	HAMPTON TWP.	(0.27)
149	GREENFIELD	(0.27)
150	ST. FANCIS	(0.29)
151	MAHOTMEDI	(0.30)
152	ROBBINSDALE	(0.31)
153	EMPIRE TWP.	(0.31)
154	SCIOTA TWP.	(0.31)
155	APPLE VALLEY	(0.32)
156	ANDOVER	(0.32)

157	BAYPORT	(0.32)
158	PRIOR LAKE	(0.34)
159	RAVENA TWP.	(0.35)
160	CARVER	(0.36)
161	LINO LAKES	(0.38)
162	LINWOOD TWP.	(0.39)
163	EAST BETHEL	(0.43)
164	LEXINGTON	(0.43)
165	SAVAGE	(0.43)
166	GREENWOOD	(0.44)
167	YOUNG AMERICA*	(0.46)
168	MOUND	(0.48)
169	VERMILLION	(0.50)
170	MASHAN TWP.	(0.52)
171	MAPLE PLAIN	(0.53)
172	WATERFORD	(0.55)
173	CREDIT RIVER TWP.	(0.57)
174	WHITE BEAR TWP.	(0.60)
175	SAND CREEK TWP.	(0.61)
176	TONKA BAY	(0.73)
177	LAKE ELMO	(0.75)
178	CAMDEN TWP.	(0.81)
179	GREY CLOUD ISLAND TWP.	(0.95)
180	ARDEN HILLS	(1.00)
181	LAND FALL	(1.07)
182	CHASKA TWP.*	(1.08)
183	BURNS TWP.*	(1.28)
184	INDEPENDENCE	(1.32)
185	MEDINA	(1.50)
186	NINIGER TWP.	(1.72)
187	DEEPHAVEN	(2.41)
188	MENDOTA	(2.53)
189	MINNETONKA BEACH	(2.88)
190	SUNFISH LAKE	(3.32)
191	DAYTON	(3.66)
192	MAY TWP.	(3.92)

STRONG ACCELERATION OF INVESTMENT >1.00	17
MODERATE ACCELERATION OF INVESTMENT .51 - 1.00	14
WEAK ACCELERATION OF INVESTMENT .01 - .50	47
MEDIAN .00	1
WEAK ACCELERATION OF DISINVESTMENT (.01) - (.50)	73
MODERATE ACCELERATION OF DISINVESTMENT (.51) - (1.00)	11
STRONG ACCELERATION OF DISINVESTMENT <(1.00)	13
NO DATA	16
TOTAL	192

TABLE 34: HYPOTHESIS #3 MEDIAN GROSS RENT (1990-2000)(2000-2010)-Z-SCORES RANKED

#	ALL SUBURBS	Z-SCORE
1	BURNS TWP.*	no data
2	CHASKA TWP.*	no data
3	DELLWOOD	no data
4	DOUGLAS TWP.	no data
5	FOREST LAKE TWP.*	no data
6	GRANT*	no data
7	GREY CLOUD ISLAND TWP.	no data
8	HANOVER	no data
9	LAKELAND SHORES	no data
10	LAND FALL	no data
11	NEW MARKET TWP.	no data
12	NEW PRAGUE	no data
13	NEW SCANDIA*	no data
14	NORTHFIELD	no data
15	ROCKFORD	no data
16	SUNFISH LAKE	no data
17	YOUNG AMERICA TWP.	no data
18	NOWTHEN*	no data
19	SCANDIA*	no data
20	PINE SPRINGS	no data
21	RANDOLPH TWP.	no data
22	SAN FRANCISCO TWP.	no data
23	ST. MARYS POINT	4.31
24	DEEPHAVEN	3.40
25	NORTH OAKS	3.18
26	WEST LAKELAND TWP.	3.17
27	WOODLAND	3.11
28	ELKO NEW MARKET*	2.94
29	ST. LAWRENCE TWP.	2.47
30	DAYTON	2.36
31	BAYTOWN TWP.	2.31
32	HUGO	2.03
33	EAST BETHEL	1.82
34	VICTORIA	1.80
35	BIRCHWOOD VILLAGE	1.58
36	GEM LAKE	1.43
37	ARDEN HILLS	1.36
38	NEW TRIER	1.29
39	OAK GROVE*	1.28
40	CORCORAN	1.28
41	ROGERS	1.26
42	DAHLGREN TWP.	1.21
43	CAMDEN TWP.	1.10
44	SCIOTA TWP.	1.08
45	LINWOOD TWP.	1.07
46	HAMPTON TWP.	1.06
47	LAKE ST. CROIX BEACH	1.04
48	BAYPORT	1.02
49	MAY TWP.	1.01
50	EUREKA TWP.	0.93

51	TONKA BAY	0.92
52	LAKETOWN	0.91
53	CASTLE ROCK TWP.	0.89
54	MENDOTA	0.86
55	RANDOLPH	0.85
56	MINNETONKA BEACH	0.84
57	MEDINA	0.83
58	BENTON TWP.	0.82
59	NEW GERMANY	0.80
60	HELENA TWP.	0.74
61	CIRCLE PINES	0.71
62	LINO LAKES	0.63
63	BLAKELEY TWP.	0.61
64	MEDICINE LAKE	0.57
65	WHITE BEAR TWP.	0.53
66	COLOGNE	0.52
67	ANDOVER	0.51
68	HAMPTON	0.51
69	ORONO	0.49
70	NINIGER TWP.	0.48
71	LORETTO	0.47
72	OAK PARK HEIGHTS	0.47
73	MAHOTMEDI	0.44
74	SAVAGE	0.44
75	CREDIT RIVER TWP.	0.43
76	SAND CREEK TWP.	0.43
77	WACONIA TWP.	0.41
78	COATES	0.41
79	GREENFIELD	0.38
80	EMPIRE TWP.	0.38
81	APPLE VALLEY	0.36
82	LAKE ELMO	0.35
83	ROSEMOUNT	0.34
84	COLUMBIA HEIGHTS	0.32
85	MASHAN TWP.	0.32
86	LONG LAKE	0.30
87	FALCON HEIGHTS	0.29
88	FARMINGTON	0.25
89	VERMILLION	0.24
90	CARVER	0.23
91	HAM LAKE	0.23
92	SPRING PARK	0.22
93	LEXINGTON	0.22
94	STILLWATER	0.22
95	BLAINE	0.22
96	CHANHASSEN	0.19
97	LAKEVILLE	0.17
98	FOREST LAKE*	0.17
99	WATERFORD	0.16
100	COTTAGE GROVE	0.16
101	GOLDEN VALLEY	0.15
102	MAPLE GROVE	0.13
103	VERMILLION TWP.	0.13
104	CHAMPLIN	0.12

105	WATERTOWN	0.12
106	BROOKLYN CENTER	0.10
107	GREENWOOD	0.10
108	LAKELAND	0.10
109	MOUND	0.09
110	RAMSEY	0.08
111	BETHEL	0.05
112	BELLE PLAINE	0.05
113	ROBBINSDALE	0.05
114	SOUTH ST. PAUL	0.03
115	HILLTOP	0.02
116	WEST ST. PAUL	0.02
117	ST. PAUL	0.00
118	LAUDERDALE	0.00
119	MINNEAPOLIS	(0.00)
120	ST. ANTHONY	(0.01)
121	PRIOR LAKE	(0.02)
122	GREENVALE TWP.	(0.03)
123	CENTERVILLE	(0.03)
124	CHASKA*	(0.05)
125	FRIDLEY	(0.05)
126	SPRING LAKE PARK	(0.06)
127	HAMBURG	(0.07)
128	MAPLE PLAIN	(0.07)
129	INDEPENDENCE	(0.07)
130	HASTINGS	(0.08)
131	MOUNDS VIEW	(0.09)
132	ST. LOUIS PARK	(0.09)
133	EXCELSIOR	(0.10)
134	LITTLE CANADA	(0.11)
135	ANOKA	(0.11)
136	WHITE BEAR LAKE	(0.11)
137	MAYER	(0.12)
138	MIESVILLE	(0.14)
139	WILLERNIE	(0.14)
140	SHOREVIEW	(0.15)
141	ST. FANCIS	(0.17)
142	VADNAIS HEIGHTS	(0.18)
143	EDINA	(0.18)
144	NORWOOD YOUNG AMERICA*	(0.19)
145	SHAKOPEE	(0.19)
146	NORTH ST. PAUL	(0.19)
147	ST. PAUL PARK	(0.21)
148	MAPLEWOOD	(0.21)
149	CRYSTAL	(0.22)
150	OSSEO	(0.22)
151	COON RAPIDS	(0.24)
152	NEW BRIGHTON	(0.25)
153	HASSAN TWP.	(0.26)
154	HOLLYWOOD TWP.	(0.26)
155	BLOOMINGTON	(0.26)
156	NEW HOPE	(0.26)
157	BROOKLN PARK	(0.28)

158	OAKDALE	(0.29)
159	ROSEVILLE	(0.32)
160	INVER GROVE	(0.33)
161	NEWPORT	(0.33)
162	YOUNG AMERICA*	(0.35)
163	HOPKINS	(0.36)
164	MARINE ON ST. CROIX	(0.36)
165	RICHFIELD	(0.37)
166	EAGAN	(0.37)
167	WAYZATA	(0.37)
168	PLYMOUTH	(0.38)
169	EDEN PRAIRIE	(0.38)
170	BURNSVILLE	(0.41)
171	JACKSON TWP.	(0.46)
172	MENDOTA HEIGHTS	(0.48)
173	NEW MARKET*	(0.51)
174	WOODBURY	(0.59)
175	MINNETONKA	(0.61)
176	JORDAN	(0.61)
177	LILYDALE	(0.67)
178	BELLE PLAINE TWP.	(0.68)
179	WACONIA	(0.78)
180	SPRING LAKE TWP.	(0.89)
181	RAVENA TWP.	(0.91)
182	ST. BONIFACIOUS	(0.91)
183	DENMARK TWP.	(0.93)
184	WATERTOWN TWP.	(0.96)
185	LOUISVILLE	(1.03)
186	SHOREWOOD	(1.26)
187	COLUMBUS*	(1.29)
188	HANCOCK	(1.34)
189	STILLWATER TWP.	(1.58)
190	MINNETRISTA	(2.17)
191	AFTON	(2.38)
192	CEDAR LAKE TWP.	(4.11)

STRONG ACCELERATION OF INVESTMENT >1.00	27
MODERATE ACCELERATION OF INVESTMENT .51 - 1.00	19
WEAK ACCELERATION OF INVESTMENT .01 - .50	50
MEDIAN .00	0
WEAK ACCELERATION OF DISINVESTMENT (.01) - (.50)	54
MODERATE ACCELERATION OF DISINVESTMENT (.51) - (1.00)	12
STRONG ACCELERATION OF DISINVESTMENT <(1.00)	8
NO DATA	22
TOTAL	192