



MODE OF OWNERSHIP AND HOUSING VALUE APPRECIATION OF
MANUFACTURED HOME PARKS: ROCHESTER, NEW HAMPSHIRE

A DISSERTATION SUBMITTED TO
THE SCHOOL OF COMMUNITY ECONOMIC DEVELOPMENT
OF SOUTHERN NEW HAMPSHIRE UNIVERSITY IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY IN COMMUNITY ECONOMIC DEVELOPMENT

By

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I certify that I have read this dissertation and that, in my opinion, it is fully adequate in scope and quality as a dissertation for the degree of Doctor of Philosophy.

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DEDICATION

This study is dedicated to those who work for, and with, the marginalized.

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ABSTRACT**MODE OF OWNERSHIP AND HOUSING VALUE APPRECIATION OF
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Southern New Hampshire University, 2006

Dissertation Chair: Professor Tosun Aricanli

This dissertation examines the relationship between mode of housing ownership in manufactured home parks and housing-related economic asset accumulation. It asks if households within and near member-owned manufactured home parks experience higher property value appreciation than their counterparts in investor-owned parks.

The main component (Component One) of the study focuses on differences in housing value appreciation between member-owned and investor-owned parks. The exploratory component (Component Two) looks at how abutting properties are affected by proximity to member-owned or investor-owned parks. Component One views housing value appreciation as affected by several independent and intervening variables: household rent payments, availability of financial products exclusively for member-owned parks, length of ownership, structural characteristics of units, park layout, and park location. Component

Two studies value appreciation of abutting properties as a function of the type of home park ownership.

Component One is examined using an archived proxy-pretest, multiple-treatment, quasi-experimental design, while Component Two relies on an archived proxy-pretest, two-treatment, expanded, quasi-experimental design. Analyses included secondary data, informant interviews, and direct observation. Analyses for Component One involved both descriptive and inferential statistics, while only descriptive statistics were used in Component Two.

The study found that homes in member-owned parks in New Hampshire have better housing characteristics: they are newer, larger, have more rooms, are closer to commercial amenities and roads, and have better park layout. Member-owned park residents also pay lower monthly rents and have access to non-subprime housing loans. Homes in member-owned parks have higher values compared to those in investor-owned parks with comparable housing characteristics. However, these economic advantages do not translate to a higher value appreciation in member-owned parks. Manufactured homes appreciate in value over time, regardless of the type of park ownership. This finding is conditional to inflated housing market

conditions. Whether this applies under “normal” market conditions is subject for future research.

The study also found that value appreciation of abutting homes is not associated with manufactured home parks location. Living next to manufactured parks does not decrease the value of abutting homes; indeed, the value of manufactured homes appreciated at a higher rate than comparable county and state rates.

Approved for publication by:
Professor Yoel Camayd-Freixas
For the Doctoral Program, School of Community Economic
Development

I. INTRODUCTION

This research seeks to understand the economic advantages that may derive from cooperative home ownership. Looking at residents of manufactured home parks in Rochester, New Hampshire, this study seeks to show that the difference in the mode of ownership between cooperative (member-owned) and non-cooperative (investor-owned) homes leads to differences in the accumulation of housing-related economic assets. For this study, the indicator used for asset accumulation is housing property value appreciation.

This research answers the question: Do households living in and around cooperative manufactured home parks in Rochester, New Hampshire experience higher housing property value appreciation, compared to those in and around investor-owned parks?

Property value appreciation is operationally defined as the annual percentage change in the value of a housing unit between two time periods. The percentage change is annualized by dividing it by the number of years between the two time periods. The change in value is equal to the difference between the base value (measured in the first time period) and the current value (measured in the second time

period). Specifically, four alternative measures were used to establish housing value appreciation:

- Measure 1 looks at the percentage change between the selling price for the sale that occurred closest to the time the home was originally purchased (base value) and the actual selling price (current value) of housing units that were sold between 2004 and 2005. The original plan for both Measure 1 and Measure 2 below was to compare the 2004 or 2005 selling price to the original purchase price; however, the data source does not keep records of original purchase prices.
- Measure 2 examines the percentage change between the selling price for the sale that occurred closest to the time the home was originally purchased (base value) and the estimated current selling price (current value) of all housing units, regardless of whether or not they were sold between 2004 and 2005; the estimated current selling price is based on the property's current assessed value, adjusted using an equalization procedure to be discussed in detail later.
- Measure 3 looks at the percentage change between the estimated 2000 selling price (base value) and the actual selling price (current value) of housing units that were sold between 2004 and 2005; the estimated 2000 selling price is based on the property's 2000 assessed value, adjusted using the same equalization procedure mentioned earlier.

- Measure 4 considers the percentage change between the estimated 2000 selling price (base value) and the estimated current selling price (current value) of all housing units, regardless of whether or not they were sold between 2004 and the present; the estimated 2000 and current selling prices are based on the property's 2000 and current assessed value, respectively, adjusted using the same equalization procedure mentioned earlier.

Measures 1 and 3 present a relatively more accurate measurement of selling price compared to the two other measures because they are based on actual sales. Measures 2 and 4 are less accurate because they estimate the current selling price based on current assessed value, adjusted using the year's median equalization ratio specific to manufactured homes in Rochester NH. The research is interested in Measures 2 and 4 (even if they are less accurate in measuring current selling price) because they permit the study of a larger number of housing units that is needed to establish rigor in statistical analysis.

Measures 3 and 4 differ from Measures 1 and 2 in the sense that the former pair use a specific year (2000) as basis for a property's base value, while the latter pair use the selling price for the sale that occurred closest to the time the home was originally purchased (base value). By having the same base year for all housing units, Measures 3 and 4 control for potential bias in the annualization of percentage

change in value introduced by different lengths of ownership. A detailed explanation of these measures is discussed in the Conceptual Framework Section.

The study has two general components – the first deals with the main focus of the study, while the second is exploratory. The main component of the study focuses on the difference in property value appreciation between housing units in member-owned and investor-owned parks. The exploratory component looks at how abutting properties are affected by their proximity to member-owned or investor-owned home parks. It is exploratory in the sense that the study seeks to establish patterns in value appreciation of abutting properties vis-à-vis the rest of the town or city without delving into possible reasons for differences, if any. For purposes of brevity, the main component will henceforth be referred to as *Component One: the Economic Advantage of Homeownership in Member-Owned Manufactured Home Parks*. Similarly, the exploratory component will henceforth be referred to as *Component Two: the Spillover Effect of Member-Owned Manufactured Home Parks on Abutting Homes*.

For Component One, the study conceptually views appreciation of housing property value as being affected by the following independent

variables: [1] rent payments (current amount, and rate of change over time) made by park households, and [2] availability of financial products exclusively offered to residents of member-owned parks. The effects of the study's independent variables can vary depending on the following intervening variables: [1] length of ownership, [2] structural characteristics of the housing unit, [3] park layout, and [4] location of the park. For homes located in member-owned manufactured home parks, the rent payments mentioned above refer to the amount of monthly contributions that they pay to their cooperative for mortgage and park maintenance-related expenses. On the other hand, residents of investor-owned parks pay monthly rent to the park owner for the use of land where their housing units are situated. Macro-level factors also affect the demand for and supply of housing (e.g., population movements, household income levels, availability of alternative housing arrangements) that, in turn, affect the appreciation of housing property value. This is not included in the scope of this study, and is controlled for by the nature of the study's research methodology and design. For Component Two, the study conceptually frames appreciation of property values of abutting properties as being affected by the type of manufactured home parks in their vicinity.

Component One of this study hypothesizes that appreciation of property values is greater for housing units in member-owned manufactured home parks, compared to those in investor-owned parks, holding all variables constant. Component Two hypothesizes that appreciation of property values is greater for housing units abutting member-owned manufactured home parks, compared to those abutting investor-owned parks, all other variables held constant. The full list of variables hypothesized to affect value appreciation is discussed in detail in the Conceptual Framework Section.

Component One's hypothesis is tested using an archived proxy-pretest, multiple-treatment, quasi-experimental design. The design involves two comparison groups, namely: [1] Comparison Group 1.A: housing units in member-owned manufactured home parks in Rochester NH, and [2] Comparison Group 1.B: housing units in investor-owned manufactured home parks that are located in the same city where member-owned parks are located. Component Two's exploratory hypothesis is tested using an archived proxy-pretest, two-treatment, expanded, quasi-experimental design. The design involves three comparison groups, namely: [1] Comparison Group 2.A: housing units in Rochester NH abutting member-owned parks, [2] Comparison Group 2.B: housing units abutting investor-owned parks that are

located in the same city where member-owned parks are located, and [3] Comparison Group 2.C: non-abutting housing units in Rochester NH. A detailed discussion of the research design and selection of comparison groups is presented in the Conceptual Framework and Methodology Sections.

As mentioned in the preceding discussion, the comparison groups for both Components One and Two are all from Rochester NH. The original plan was to draw comparison groups from three New Hampshire cities and towns that have comparable and significant number of housing units in manufactured home parks. However, data limitations that have implications on methodological integrity led to the decision to focus on only one study site that has multiple and comparable manufactured home parks. A detailed explanation is found in the Methodology Section.

This study utilized secondary data analysis, key informant interviews, and direct observation in collecting information on the dependent, independent and intervening variables for both Components One and Two. Secondary data were collected from public records that are available from the following sources: Rochester City Assessing Office, Real Data Corporation's database of home sales, New Hampshire

Department of Revenue Administration, management offices of home parks, and New Hampshire Community Loan Fund. Direct observation involved ocular inspection of park layout, e.g., park signage and street signs, streetlights, and yard and parking spaces. The study did not involve interviews with individual residents. All secondary data collected from the city assessor's office, Real Data Corporation and NH Department of Revenue Administration are public records. Secondary data from NHCLF and park management are not specific to individual residents. Ocular visits were conducted to gather information on the park, as a whole; during these visits, no information was gathered on individual housing units.

Data analysis for Component One involved both descriptive and inferential statistics. Descriptive analysis utilized frequency distributions and crosstabulation of data to characterize the two comparison groups in terms of the dependent, independent and intervening variables. Measures of central tendency, dispersion and association were also utilized to differentiate the two comparison groups. Inferential analysis was used to account for differences in property appreciation rates between housing units in member-owned and investor-owned manufactured home parks. Statistical measures used include analysis of variance, and chi square tests. Regression

analysis using ordinary least squares was utilized to determine which, and to what extent, independent variables significantly affect the dependent variable; it was also used to control for the intervening variables. Data analysis for Component Two only involved descriptive statistics (measures of central tendency, dispersion and association) to differentiate the three comparison groups. In order to eliminate the effect of outliers, 5 percent of scores representing extreme values were trimmed before any data analysis was conducted.

II. LITERATURE REVIEW

THEORETICAL UNDERPINNINGS: POVERTY AND ASSET ACCUMULATION

Poverty has traditionally been defined as a function of income (McCulloch & Robinson, 2001). One economic definition of poverty is to characterize it "as an inadequate command over resources relative to needs ... (where) command over resources (is defined) in terms of income; in particular, wealth and assets were ignored (Oster et al, 1978; p. 4)." Even the U.S. Census Bureau (2005; p.45) defines poverty as follows:

"Following the Office of Management and Budget's (OMB) Statistical Policy Directive 14, the Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty."

Based on this income definition, the 2004 poverty rate in the U.S. is 12.7 percent; "[f]rom the most recent low in 2000, both the number and rate have risen for four consecutive years from 31.6 million and 11.3 percent in 2000, to 37.0 million and 12.7 percent in 2004 (U.S. Census Bureau, 2005; p. 9)." An income-measured condition merited

an income-based intervention, i.e., “[p]ublic policies to assist low-income households have traditionally focused on the provision of income support, job training, or certain types of consumption (Carney & Gale, 2000; p.1).” Boshara (2002; para. 4) succinctly captures this by saying that “when the government frames the problem in terms of income, the solutions are framed in terms of income. Hence, reports of rising poverty are usually met with calls for greater income and food assistance, higher rental subsidies and increases in the Earned Income Tax Credit and minimum wage.”

Defining poverty along income lines has been challenged. First, because the effectiveness of income-based approaches to the problem of poverty is being questioned, i.e., there is a “perceived difficulty of fostering long-term self-reliance using income- or consumption-based assistance programs (Carney & Gale, 2000; p.1).” Further, framing poverty in terms of income masks the larger issue of asset poverty. According to Boshara (2002; para. 3) “[w]hen families don't have enough income, they can't buy enough food, shelter, clothing and other necessities. With 33 million Americans now classified as officially ‘poor,’ income poverty is a huge problem. But at least twice as many families don't have enough assets -- and so they lose their economic security and their ability to plan, dream and pass on opportunities to

future generations. Lack of income means you don't get by; lack of assets means you don't get ahead." McCulloch and Robinson (PolicyLink, 2001; p. 2) say that "[s]ome analysts blame decades of social policy focused on income instead of assets."

Statistics on asset ownership in the United States paints a dire picture. Quoting Oliver & Shapiro (1997), a California-based community foundation cites the following statistics:

- "Almost one-third (31%) of American households have no or negative financial assets, including over 60% of Black Americans, 54% of Hispanics, and 62% of single parent households.
- Nearly one in three American households possesses zero or negative net financial assets.
- Half of all Americans have less than \$1,000 in investable assets.
- The average American family holds only \$3,700 in net financial assets. Thus, absent any safety nets, the typical family is only about three monthly paychecks away from financial ruin.
- Just over half of all Americans (55%) have sufficient net financial assets to tide them over more than three months without a job -
- 21.1% of Black Americans, 27.5% of Hispanics, 33% of Americans under 35 years of age, and 21% of single parents households.
- Close to one-half (46.9%) of all children live in households with no net financial assets.

- Sixty-three percent of all children live in households with enough net financial assets to cushion only three months or less of interrupted income.
- Nearly three out of every four (73%) black children grow up with zero or negative net financial assets.
- The top 20% of all American households earn over 43% of all income but hold over 68% of net worth (all assets less all liabilities) and almost 87% of net financial assets.
- Ten percent of America's families control two-thirds of the wealth.
- The top 1% collected over four times their proportionate share of income, but hold over 11 times their share of net worth.
- The richest 1% possesses at least \$763,000 in net worth, an amount 22 times greater than the median of the remaining 99%."

Citing Wolff, McCulloch and Robinson (PolicyLink, 2001; p. 2)

underscores the gap "between rich and poor, in terms of income and ownership of assets" by stating that "[i]n 1998, the richest 1 percent of U.S. families (as ranked by financial wealth) owned 47 percent of total house-hold financial wealth; the richest 20 percent owned 91 percent."

Recognizing the lack of emphasis given to wealth accumulation, there has been a push among academics and policy analysts to reexamine approaches to poverty. According to Carney & Gale (2000; p.1),

“several analysts have suggested both the need for, and the potential benefits of, assisting the asset accumulation efforts of the poor. ... The potential lies in promoting such independence both directly, by providing a financial cushion or nest egg, and perhaps more importantly, indirectly, by inculcating the values needed to generate self-reliance.” Asset accumulation strategies like “matching deposits and refundable tax credits for savings [can] lead to homeownership, higher education, business development, investment and retirement (Boshara, 2002; para. 9).”

CONCEPTUAL UNDERSTANDING: CED AND ACCESS TO AFFORDABLE HOUSING

A policy paper prepared by the National Housing Conference for Annie E. Casey Foundation (2005; p. 12) avers that

“it is hard to deny the many benefits of homeownership (at least for homebuyers generally; comparatively little is known of the extent to which low-income homebuyers experience the same benefits). (See generally, Katz et al. 2003; and the collection of papers in Retsinas and Belsky 2002.) Benefits include: individual asset accumulation—primarily through home price appreciation and the forced savings of monthly payments, which leads to the pay down of the principal balance on a mortgage, which in turn leads to other opportunities for building wealth for current and

future generations (e.g., education, small businesses, etc.); enhanced satisfaction with one's housing and neighborhood; stronger neighborhood ties and civic participation; positive outcomes for children, including higher educational attainment, reduction in deviant behavior, and increase in future home-ownership rates; improvements in individual housing quality; and stronger neighborhoods."

However, the same policy paper (National Housing Conference, 2005; p. 12) provides a caveat, i.e., "[e]ven these benefits are not clear-cut, however, with a number of researchers questioning whether homeownership is really such a good financial investment (see, e.g., Goetzmann and Spiegel, 2002) and whether the assumed social benefits of homeownership are really caused by homeownership or rather are so strongly associated with the types of families who become homeowners that one cannot truly tease them apart (see, e.g., Rohe et al, 2002). And this is for all homeowners; arguably, many of the potential benefits of home-ownership ought to be lower for very low-income families than for higher-income families."

The above caveat notwithstanding, homeownership – the epitome of the American Dream - has its economic advantages. Owning a house allows households to build equity that can be used to borrow against

or convert into cash if the house is sold. Homeownership also provides tax benefits, e.g., interest paid on the mortgage of a house is tax-deductible. More importantly, homeownership in expanding markets allows households to accumulate wealth. According to HUD's Urban Policy Brief No. 2: Homeownership and Its Benefits (p. 13), "although research on some key points remains inconclusive, the preponderance of existing scholarship confirms the validity of many of the benefits popularly attributed to homeownership. These include claims that homeownership ... [i]ncreases personal wealth. Statistics show that equity in a home is the largest single source of wealth for most families and marks an increasingly important economic divide in American society. Median net wealth for homeowners exceeds \$78,400, compared to \$2,300 for renters. More than 60 percent of homeowners' wealth is in the form of home equity."

Homeownership can be extended to low-income households.

According to the National Housing Conference (2005; p. 11), "[t]here are many products and programs designed to bring homeownership within reach of [low-income] families, including (especially) low down payment mortgage products and down payment assistance programs. Many of these programs are worthy of continued and expanded support, and there is certainly always room for further strengthening

of the policies that underlie them.” Low-income households are defined by the study as “families with incomes between 60 and 80 percent of AMI (on a national basis, about \$35,000 to \$45,000 in 2004).”

The National Housing Conference (2005; pp. 5-16) identifies a number of constraints to homeownership for low-income households, namely:

- “Wealth Constraint—a family has inadequate savings to provide a down payment and cover closing costs.”
- “Income Constraint—a family’s income does not support a mortgage of adequate size to purchase a home.”
- “Information Deficit—a family lacks a clear understanding of the homebuying process and of the financial system generally that makes it difficult for the family to know what it needs to do to become a homeowner and leaves the family vulnerable to predatory lending.”
- “Credit Problems—a family lacks a credit history or has a poor credit history.”
- “Supply Constraints. Even when very low-income families can overcome the other constraints and qualify for a mortgage, there often are no houses in a price range they can afford.”
- “Housing Discrimination is another factor that tends to reduce homeownership opportunities and benefits for minorities.”

There are a variety of strategies and approaches to overcome these constraints. Ideally, the market and the state are the macro-institutions that can facilitate access and ownership of housing by low-income families.

The market claims efficiency in allocating resources and producing private goods and services that meet a variety of human needs. However, there are certain needs that could not efficiently be met by the market because of the very nature by which goods and services that satisfy these needs are produced and consumed; these are usually referred to as public goods. Weimer & Vining (1999) provide other limitations of the competitive framework that lead to market failure, i.e., the nature and presence of public goods, natural monopoly, information asymmetry, thin markets, uncertainty, intertemporal allocation, and adjustment costs. Moreover, even on grounds of efficiency alone, doubt is cast on the market's ability to meet some basic needs because of questions regarding its assumed competitive and self-regulatory framework. The market is likewise accused of being insensitive to, if not even furthering social inequities brought about by the unequal distribution of resources or endowments (Lutz, 1999; McMurtry, 1998; Polanyi, 1994).

The other macro-institution, the state, is seen as a mechanism that provides certain basic human needs that the market is incapable of allocating. Specifically, the state's intervention in providing certain goods and services is justified in situations where traditional market failures involve circumstances mentioned earlier (Weimer & Vining, 1999). However, there are assertions that the modern-day state is not effective in serving people's interests because it has become subservient to the corporate market. McMurtry (1998) claims that government resources are actually spent to promote the interests of the corporate market. People's cynicism in the ability of government to solve their problems is captured by Schorr's (1997; p. xvi) observation of the American socio-political landscape in the mid-1990s: "The collapse of confidence in our political institutions and the rampant antipathy toward government that emerged in the mid-1990s represented perhaps the greatest obstacle to the development of strategies to bring all children and families into the American dream. Citizens certain that nothing works, or that nothing done by government works, were turning into reluctant taxpayers and noisy cynics." This claim is backed by the notion that "(d)iscontent with democracy in the United States carries a curious twist in that criticism is not directed at the traditional symbols or mechanisms of democracy. ... Criticisms ... center around governance – the capacity of a

democracy to produce public policy that meets the expectations of society – along with the public officials and institutions responsible for devising these policies (Schneider & Ingram, 1997; p. 4).”

The preceding discussions present the argument that the market and the state, by themselves, are not capable of fully meeting basic individual and community needs. This necessitates to the consideration of the role of community-level actors – individuals, local groups and communities – in effectively meeting their own needs. This highlights the need for a community economic development (CED) approach in meeting basic needs, general, and homeownership, in particular.

Simon’s (2001; p. 3) definition of CED “embraces [1] efforts to develop housing, jobs, or business opportunities, [2] in which a leading role is played by nonprofit, nongovernmental organizations [3] that are accountable to residentially defined communities.” Another definition is that of CED as a social intervention strategy “for dealing with the problems of poor people, powerless people, and underdeveloped communities ... that seeks to change the structure of the community and build permanent institutions in the community. As a result, the community begins to play a more active role vis-à-vis

institutions outside the community, and the residents ... become more active in the control of the community's resources (Swack & Mason, in Bennet, 1987; pp. 328-9)." A third definition considers CED's role to be the employment of "political means to achieve broadly redistributive goals through economic growth focused on particular populations and communities. The essential purpose is communitarian, but the method is to employ market mechanisms, reinforced by political efforts to generate the necessary resources for investment and establish rules that are consistent with the larger market environment, yet supportive of community goals (Wiewel, et al, 1993; p. 96)."

All three definitions consider CED as a poverty-alleviating strategy, and focus on communities as units of analysis. However, Simon's definition puts emphasis on the lead role played by formal community groups, and focuses more on economic interventions. On the other hand, Wiewel et al (1993), and Swack & Mason's (1987) definitions give more weight to the participation of community members themselves, and highlight not only economic but also political and social processes and outcomes. Differences notwithstanding, the three definitions have similar assertions on how CED can be a strategy that facilitates integration between and among institutions and micro-level

entities, and people's ownership of and control over their own resources.

Community ownership of resources could be promoted by pressuring the state to enact laws and regulations recognizing community institutions like "community land trusts (CLTs) as special legal entities and exempting them from many of the laws that restrict agreements aimed at preventing speculative sale of property, ... (as well as making CLTs) more acceptable to financial institutions chartered and regulated by government (Swack & Mason, 1987; p. 345)." Emphasis should not be limited only to ownership but also through control by providing the necessary support services that would allow community residents to maintain and sustain these resources (Simon, 2001).

Evidently, there is a need for individual citizens and groups to involve the state in meeting their needs. To paraphrase Putnam (1993; p. 182), citizens in civic communities who expect better government, get it. And as Schorr (1997; p. 362) puts it in her discussion of the value of including, among others, the state in development projects, "(s)uccessful initiatives draw extensively on outside resources, including public and private funds, professional expertise, and new partnerships that bring clout and influence." The sentiment is aptly

summed up by Sen (1999; p. 18) by stating that “the expansion of the ‘capabilities’ of persons to lead the kind of lives they value – and have reason to value ... can be enhanced by public policy, but also, on the other side, the direction of public policy can be influenced by the effective use of participatory capabilities by the public.”

The reality is that the market forces and the state’s actors (politicians, executive bureaucrats, “civil servants”) cannot always be relied on to take the initiative to partner with communities. Oftentimes, the citizens themselves have to spearhead efforts to either directly address their needs, or to compel the state and the market to do so. Therefore, communities must be capable of engaging these institutions in meaningful partnership and discourse.

First and foremost, there is a need to facilitate a process by which individuals and groups see themselves as “the” community. Quoting John Gardner, Schorr (1997; p. 305) points out that “(w)ithout a sense of community, ... people lose the conviction that they can improve the quality of their lives through their own efforts. ... (Unfortunately), the loss of community, like most contemporary ills, hits the poorest the hardest.” CED strategy can be employed in community building by facilitating organizing efforts within

communities. As Simon (2001; p. 113) points out, “[a] community has no conventional legal form or institutional structure. One of the tasks of CED is to invent forms and structures to facilitate the kinds of collective activities it promotes.” Through organizing, residents are made aware of issues and problems that affect them. More importantly, organizing provides community members with a venue to realize “strength in numbers”.

Organizing is directed towards the eventual creation of local institutions that either complement the efforts of existing external institutions, counter their negative effects (if any), or take the lead in meeting their own needs. As Swack and Mason (1987; p. 327) put it, CED “seeks to change the structure of the community and build permanent institutions within a community. As a result, the community begins to play a more active role vis-à-vis the institutions outside of the community, and the residents of the community become more active in the control of the community’s resources.”

Institutions that can be built to promote community ownership and control come in various forms. Community land trusts (CLTs) and mutual housing associations are alternative methods of ownership that give communities control over their housing stock (Swack & Mason,

1987; Simon, 2001). Another type of local institution is the community loan fund (CLF), which is a non-profit financial institution that recognizes the community's need for access to capital and technical assistance. Swack and Mason (1987; p. 335) contend that "CLTs and CLFs working together provide many successful examples of communities gaining control over their housing resources."

Another form of local institution that CED strategy can facilitate is the cooperative. Cooperatives stipulate local ownership and control, thus allowing residents of the community to benefit in the success of the enterprise and have control over business decisions. According to the International Co-operative Alliance (ICA), "a co-operative is an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise (International Cooperative Alliance, 2006; para. 1)." The ICA (2006) enumerates seven guidelines by which co-operatives put their values into practice, namely: [1] voluntary and open membership, [2] democratic member control, [3] member economic participation, [4] autonomy and independence, [5] education, training and information, [6] co-operation among co-operatives, and [7] concern for community.

Simon (2001; pp. 133-4) identifies “two principal practical disadvantages [of cooperatives, as compared with conventional business corporations]. First, they have more difficulty raising capital. ... Second, the diffused control and reward structure that cooperatives require may be inefficient in some situations.” At the same time, Simon (2001; p. 136) asserts that “[t]he cooperative form fits snugly with the CED vision. ... The idea of patron ownership, which requires that the prerogatives of residual control and financial rights be accorded to people who have an additional relationship with the enterprise, and the requirement that the relationship be a relatively personal one, as opposed to that of an absentee capital supplier, restate the CED principles of multistranded and face-to-face relations. ... When the cooperative form is applied to housing, geographical focus is almost invariably involved.”

The National Housing Conference (2005; p. 35) cites a number of reasons why “proponents of cooperatives argue that they help to promote affordable housing even if they are not limited equity cooperatives because

- “the corporation is collectively responsible for repairs, reducing the likelihood that an individual will be hit with budget-busting home repairs;

- “there are lower closing costs for the individual because the transfer of coop shares is not a real estate transaction in most states and thus there are no costs for title insurance, abstract, survey, recording, and related local taxes; and
- “cooperative boards have greater freedom to sell to borrowers that the market might consider risky as it is the corporation and not the individual that takes out the mortgage.” ...
- “Proponents of cooperatives further argue that communities are more likely to accept the construction of a cooperative development than a rental property, even if they are limited equity cooperatives with 0% appreciation (which are highly similar in other respects to rental properties), and that such cooperative developments help to create stronger communities because purchasers feel more invested in their development due to the cooperative ownership.”

OPERATIONAL DYNAMICS: COOPERATIVE OWNERSHIP OF MANUFACTURED HOME PARKS IN NEW HAMPSHIRE

A manufactured home is a housing unit “built to meet the performance standards of the Housing and Urban Development (HUD) code, [must] have chassis, [and] rarely moves once placed (Apgar et al, 2002; p. 2).” Bradley (1997) differentiates manufactured or mobile homes from modular homes (wherein chassis is optional); panelized homes (assembled on-site and supplemented with on-site construction to meet state and local standards); and trailer homes or campers (can be hitched to a vehicle and moved, and not built to a Federal code).

Apgar et al (2002; p. 2) quote "a recent [1998] HUD study showing that building a 2,000-square-foot manufactured unit costs just 61 percent as much as a comparable site-built home." It is not surprising then that "[a] sizable share of the units added to the nation's inventory of affordable housing each year is manufactured in factories, rather than built on site. Nationally, 23 percent of growth of homeownership among very-low-income families (≤ 50 percent AMI) between 1993 and 1999 was due to manufactured housing (National Housing Conference, 2005; p. 52)." In 2002, "[t]here are over eight million manufactured, HUD-code homes in the United States, representing two thirds of affordable units added to the stock in recent years and a growing portion of all new housing (Apgar, et al, 2002; p. 1)."

The National Housing Conference (2005; p. 53) contends that "[t]he primary benefit of manufactured housing is affordability. Manufactured housing is generally (though not always) less expensive than stick-built housing. In recent years, manufactured housing has become more attractive from a design standpoint. High-end manufactured housing is difficult to distinguish from stick-built housing. However, there are many concerns with manufactured housing. These include:

- While construction quality is generally good, poor installation can increase risks of weather-related damage.
- High-pressure sales strategies and unfavorable financing terms (often using personal loans, rather than mortgages) can lead to high rates of default.
- While manufactured homes on owner-owned land tend to appreciate, those on leased land tend to depreciate, reducing opportunities to build wealth.
- Manufactured housing is governed by national building codes that preempt local building codes. Recent legislation gives industry greater power to shape building codes. Consumers need informed advocates at the national level to keep an eye on manufacturers.
- Many communities have regulations that prohibit manufactured housing or make it difficult or expensive to utilize it. Such regulations are based on outdated stereotypes of manufactured housing.”

Of those living in manufactured homes, almost three million families “live in homes sited in ‘land-lease communities,’ more often called trailer parks or rental communities, where they pay a monthly rent to a landlord in addition to their loan payment for the unit (Apgar et al, 2002; p. 21).” According to the Manufactured Home Owners and Tenants Association of New Hampshire (2005), there are approximately 500 manufactured housing parks in the state.

There are two types of manufactured home parks – investor-owned and cooperative/member-owned. Residents of investor-owned parks own the physical housing unit and pay rent to the park owner. In return, the park owner (1) allows the residents to occupy space in the park, and (2) provides and maintains shared park facilities and infrastructure (e.g., roads, water and sewage/sanitation systems, power lines). The park owner determines the rental amount, enforces park rules and regulations, and decides on the housing tenure of the residents.

On the other hand, residents of a member-owned park individually own their physical housing units and communally own the land where the park is situated. The cooperative manages the provision and maintenance of shared park facilities and infrastructure through a management body and a democratically elected Board. Through the management body and the Board, cooperative members decide on the amount of monthly contributions to pay for mortgage and park maintenance-related expenses. They also have a direct in the development and implementation of park rules and regulations embodied in the cooperative by-laws.

Living in investor-owned parks presents a number of economic and social challenges (Bradley, 2000; Nijhuis & Rivera, 2005). It is a common occurrence in some parks to have frequent rent increases, and ill-maintained park facilities and structures. There are also cases where tenants' security of tenure is threatened by park closure. In cases where park residents are not organized, there is no tenant voice, and there are minimal venues for participation in community activities. Park residents are also subjected to negative perceptions (e.g., "trailer trash") by non-park town/city members. Conversion of "land-lease communities" from investor-owned to member-owned or cooperative parks is seen as a solution to these problems. Nijhuis & Rivera (2005) and Bradley (2000) contend that cooperation provides the venue for residents to directly participate in the management and operation of the park, including taking part in decision-making on rent amounts, improvement and maintenance of shared park facilities, and park rules and regulations.

Since 1984, New Hampshire has experienced a steady increase in the number of member-owned manufactured home parks mainly through the initiative of a community development organization, the New Hampshire Community Loan Fund (NHCLF). As of April 2005, 71 home

parks are cooperatively owned by its residents. This means that 3,444 families have successfully transitioned from tenants to owners.

III. CONCEPTUAL FRAMEWORK

COMPONENT ONE: THE ECONOMIC ADVANTAGE OF HOMEOWNERSHIP IN MEMBER-OWNED MANUFACTURED HOME PARKS

Homeownership – the epitome of the American Dream - has its economic advantages. Owning a house allows households to build equity that can be used to borrow against or convert into cash if the house is sold. Homeownership also provides tax benefits, e.g., interest paid on the mortgage of a house is tax-deductible. More importantly, homeownership in expanding markets allows households to accumulate wealth. According to HUD’s Urban Policy Brief No. 2: Homeownership and Its Benefits, “although research on some key points remains inconclusive, the preponderance of existing scholarship confirms the validity of many of the benefits popularly attributed to homeownership. These include claims that homeownership ... [i]ncreases personal wealth. Statistics show that equity in a home is the largest single source of wealth for most families and marks an increasingly important economic divide in American society. Median net wealth for homeowners exceeds \$78,400, compared to \$2,300 for renters. More than 60 percent of homeowners' wealth is in the form of home equity.”

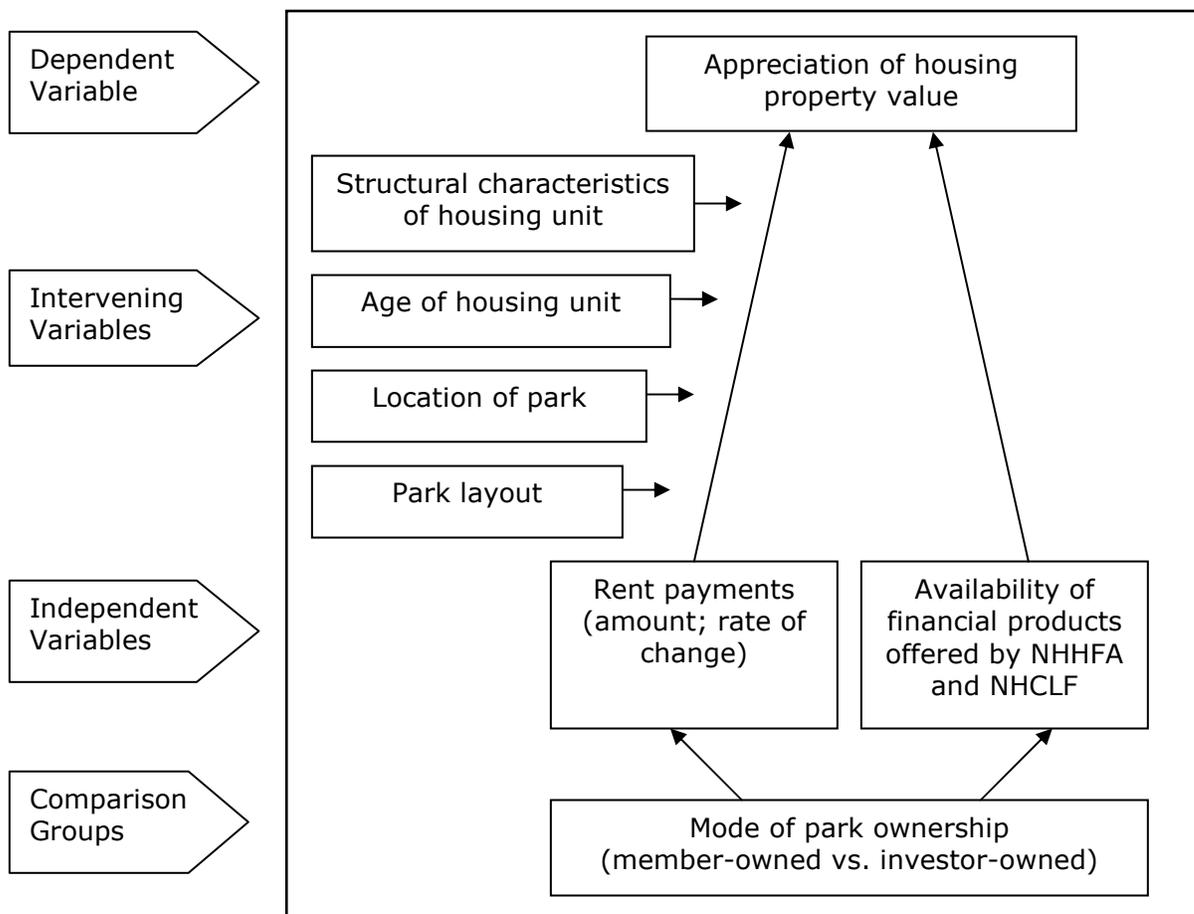
One way for wealth accumulation through homeownership to happen is if the property appreciates in value. A whole range of factors affects the appreciation of housing property. This includes macro-level factors affecting the demand for and supply of housing, e.g., population movements, household income levels, availability of alternative housing arrangements, to name a few. There are also micro-level factors affecting housing property values; these include the structural characteristics of the housing unit (i.e., number of rooms, floor area), the age of the housing unit, and park layout, and park location.

This research did not examine the effects of macro-level factors on property appreciation. The study controlled for these factors by treating them as constants. The manufactured homes that were studied were selected such that they are subject to the same housing market conditions, i.e., by choosing housing units from member-owned and investor-owned parks that are located in the same city. (A detailed explanation will be given in the Methodology Section.)

This research explores the effects of micro-level factors, albeit indirectly. Differences in the structural characteristics of the housing unit, age of the housing units, the park layout, and location of the housing units were treated as intervening variables.

The main focus of the study is to determine if and how the mode of park ownership (i.e., member-owned vs. investor-owned) affects the appreciation of housing values. This study asserts that the mode of park ownership lead to differences in [1] rent payments (amount and rate of change), and [2] availability of financial products offered by NHHFA and NHCLF. These differences, in turn, affect the appreciation of housing values. The research framework is summarized as follows:

Figure 1: Conceptual Framework for Component 1



Property value appreciation is operationally defined as the annual percentage change in the value of a housing unit between two time periods. The change in value is equal to the difference between the base value (measured in the first time period) and the current value (measured in the second time period).

$$\text{Change in value} = \text{current value} - \text{base value}$$

$$\text{Percentage change in value} = \frac{(\text{current value} - \text{base value}) \times 100}{\text{base value}}$$

The percentage change is annualized by dividing it by the number of years between the two time periods.

$$\text{Annual \% change in value} = \frac{(\text{current value} - \text{base value}) \times 100}{\text{base value} \times \text{no. of yrs. bet. current \& base periods}}$$

Four alternative measures are utilized to determine value appreciation.

- Measure 1 looks at the percentage change between the selling price for the sale that occurred closest to the time the home was originally purchased (base value) and the actual selling price (current value) of housing units that were sold between 2004 and 2005. The original plan for both Measure 1 and Measure 2 below was to compare the 2004 or 2005 selling price to the

original purchase price; however, the data source does not keep records of original purchase prices.

- Current value: actual selling price in 2004 or 2005
 - Base value: earliest selling price
 - Units of analysis: mobile homes that were sold between 2004 and 2005
-
- Measure 2 examines the percentage change between the selling price for the sale that occurred closest to the time the home was originally purchased (base value) and the estimated current selling price (current value) of all housing units, regardless of whether or not they were sold between 2004 and 2005; the estimated current selling price is based on the property's current assessed value, adjusted using an equalization procedure to be discussed in detail later.
 - Current value: estimated 2005 selling price (based on the property's 2005 assessed value, adjusted using the 2005 median equalization ratio specific to manufactured homes in Rochester NH)
 - Base value: earliest selling price
 - Units of analysis: all mobile homes (regardless of whether or not they were sold between 2004 and 2005)
-
- Measure 3 looks at the percentage change between the estimated 2000 selling price (base value) and the actual selling price (current value) of housing units that were sold between 2004 and the present; the estimated 2000 selling price is based on the property's 2000 assessed value, adjusted using the same equalization procedure mentioned earlier.

- Current value: actual selling price in 2004 or 2005
 - Base value: estimated 2000 selling price (based on the property's 2000 assessed value, adjusted using the 2000 median equalization ratio specific to manufactured homes in Rochester NH)
 - Units of analysis: mobile homes that were sold between 2004 and 2005
- Measure 4 considers the percentage change between the estimated 2000 selling price (base value) and the estimated current selling price (current value) of all housing units, regardless of whether or not they were sold between 2004 and the present; the estimated 2000 and current selling prices are based on the property's 2000 and current assessed value, respectively, adjusted using the same equalization procedure mentioned earlier.
 - Current value: estimated 2005 selling price (based on the property's 2005 assessed value, adjusted using the 2005 median equalization ratio specific to manufactured homes in Rochester NH)
 - Base value: estimated 2000 selling price (based on the property's 2000 assessed value, adjusted using the 2000 median equalization ratio specific to manufactured homes in Rochester NH)
 - Units of analysis: all mobile homes (regardless of whether or not they were sold between 2004 and 2005)

Using the four alternative measures of housing property value appreciation, comparisons were made between the percentage change

in property value of properties in member-owned parks and those in investor-owned parks. To control for length of ownership, the property appreciation rate was annualized by dividing it by the number of years between the two time periods. However, the annualized property appreciation rate of housing units that have different number of years of ownership could not be readily compared. For example, the value appreciation of a housing unit purchased in 1994 with an annualized appreciation rate of 1% may not necessarily be different from a housing unit bought in 2005 that has an annualized appreciation rate of 10% because it is possible that prices did not change between 1994 and 2003, and then suddenly surged by 10% in 2004. Measures 3 and 4 differ from Measures 1 and 2 in the sense that the former take this issue into account. Measures 3 and 4 use a specific year (2000) as basis for a property's base value, while Measures 1 and 2 use the selling price for the sale that occurred closest to the time the home was originally purchased (base value). By having the same base year for all housing units, Measures 3 and 4 control for potential bias in the annualization of percentage change in value introduced by different lengths of ownership. The reason for choosing 2000 as the base year will be discussed later in this section.

Even if length of ownership is controlled, another issue that had to be taken into consideration is the year of sales, i.e., the selling prices of comparable properties could still vary because of the housing market in a specific year, other things held constant. To control for this, the study gathered sales prices of properties between 2004 and 2005. This time period is chosen not only to control for year of sale, but also to account for the availability of financial products exclusively offered to residents of member-owned parks; this is one of the independent variables of the study. NHCLF, NHHFA and a number of banks started offering home loans to buyers of housing units in member-owned parks in 2003, and it is assumed that its effect on the sales price of member-owned housing units has taken effect in 2004.

Measures 1 and 3 present a relatively more accurate measurement of selling price compared to the two other measures because they are based on actual sales. Measures 2 and 4 are less accurate because they estimate the current selling price based on current assessed value, adjusted using the year's median equalization ratio specific to manufactured homes in Rochester NH. The research is interested in Measures 2 and 4 (even if they are less accurate in measuring current selling price) because they permit the study of a larger number of housing units that is needed to establish rigor in statistical analysis.

According to information from Real Data Corporation, there were 204 member-owned units from among the 71 member-owned parks that were sold in 2004. Sales prices of these member-owned properties could conceivably be gathered and compared to a comparable number of randomly selected investor-owned properties that were likewise sold in 2004. The first problem with this approach is to erroneously compare so called "apples and oranges". Of the 204 sales transactions in 2004 of units in member-owned parks, some are located in cities or towns where there is minimal, if not zero, comparable number of sales of units in investor-owned parks. In other cases, home sales happened in a number of cities or towns where housing units in member-owned and investor-owned home parks are not comparable to each other. This is a problem because, as mentioned earlier, the study did not focus on macro-level factors, and was controlled by selecting housing units sold between 2004 and 2005 from member-owned and investor-owned parks that are located in the same cities or towns (thereby guaranteeing that they are subjected to the same market conditions). To remedy this problem, the study originally intended to focus on only three cities or towns where there are comparable number and types of manufactured home parks. However, if the study selected only the sold housing units from member-owned and investor-owned parks that are located in the same

three cities or towns and, at the same time, are comparable to each other, the number of eligible cases would be limited. For instance, there were only 17 member-owned properties sold in 2004 in one of the cities chosen by the study. To increase the number of eligible cases, the study looked at sales between 2004 and 2005. Although this effectively delayed data gathering to a date not earlier than January 2006, this increased the number of eligible cases (i.e., homes in cooperative parks sold between 2004 and 2005) to 56 from just one of the three cities or towns originally considered as study sites. Unfortunately, the research had to drop the two other towns because it was belatedly known that both towns are not confident in the soundness of the results of their 2000 assessment. It was also found out that one of the towns will only have the results its 2005 assessment by the Fall of 2006.

The number of eligible cases (i.e., 56) from cooperative parks does not pose a problem of limited sample size (for purposes of statistical analysis) because the study is not based on analysis of samples; rather, it is based on the entire population of homes sold from 2004 to 2005. However, there could still be issues of unequal variances because the number of eligible cases from non-cooperative parks is significantly larger (i.e., 154). Although this can be corrected by

looking at statistical results that do not assume equal variances, the study also considered two other measures of value appreciation that analyze larger populations. Measures 2 and 4 based current value on the estimated current selling price of all housing units, regardless of whether or not they were sold between 2004 and 2005. Even if a majority of these properties were not actually sold between 2004 and 2005, their current sales prices were estimated using a technique called equalization. By estimating the current selling price, the appreciation rate for unsold properties can be computed, thereby allowing comparison of a large number of cases between comparable member-owned and investor-owned properties.

Equalization is a property value-adjusting measure that converts the assessed value of specific property types (e.g., manufactured homes) into an estimate of the selling price using an assessment-to-price ratio. The International Association of Assessing Officers (IAAO) defines an equalization program as "the process by which an agency with authority over two or more assessment districts makes adjustments to the total appraised value (or assessments) of the districts (interjurisdictional equalization) or of classes of property within the districts (intrajurisdictional equalization), or both, so that the total appraised (or assessed) values within the agency's

jurisdiction all bear the same relationship to total market value (in Wasserstein and Davis, 2001; pp. 9-10).”

A study conducted by Wasserstein and Davis (2001; pp. 5-6) describes, at length, the equalization procedure, to wit:

“Many states have provisions in their constitutions or statutes that require property to be appraised with fairness and equity. From an assessment performance standpoint, level and uniformity are two important measures. ‘Level’ refers to the extent to which, on average, property is assessed at a target, usually specified by statute, such as ‘full and true value.’ ‘Uniformity’ refers to the consistency by which properties are assessed. ... At the heart of the issue is the fundamental problem that one cannot know with absolute certainty what the ‘full and true value’ of a property is. The market value of property can only be observed indirectly by analyzing sales that take place in the open market between well-informed buyers and sellers engaged in arms-length transactions. Sales that are good proxies of market value are sometimes called valid sales or qualified sales. Not every property transfer can be considered a valid sale. Qualified sales should take place in an open and competitive market between a well-informed buyer and seller, and neither party can be acting under duress. The price paid should reflect the real property only. ... The relationship between that sale value and the assessed value is the basis for a ratio study. ... A

ratio is developed by taking the assessed value of a property and dividing it by its sale price.”

Wasserstein and Davis (2001; pp. 7-8) go on to discuss two types of ratios used to estimate the sales value of a property based on its assessed value.

“The most common measure of overall assessment level is the median ratio. For demonstration purposes, assume a sample of sales provides 11 ratios. Suppose that five of the sold parcels have a ratio of .50, one has a ratio of 1.00, and 5 have a ratio of 1.50. If we arrange the ratios in order of magnitude, it is easy to locate the median, which will fall in the middle of the array. The middle point is the 6th ratio. Since ratio #6 has a ratio of 1.00, it will be the median. This example can also illustrate the difference between level and uniformity. While it appears by the appraisal level (as measured by the median ratio) that the assessor has done an excellent job, it is apparent that 10 of the 11 property owners represented in the sample are either substantially overappraised or underappraised. This problem relates to the issue of uniformity. ... Uniformity is typically measured in ratio studies by a measure called the ‘coefficient of dispersion’ (COD). The COD is computed by totaling the absolute difference between each individual ratio and the median ratio, dividing by the number of ratios, then dividing the result by the median ratio (and multiplying by 100 to

express as percentage). ... Acceptable values for the COD depend on the type of property, but as a general rule a COD of 20 or less indicates a reasonable level of assessment uniformity.”

“Another specialized measure of level addressed in the IAAO Standard is the weighted mean ratio (also known as the aggregate of means). It is calculated by (1) summing the assessed values, (2) summing the sale prices, and (3) dividing the sum of the assessed values by the sum of the sale prices.”

This study utilized the median equalization ratio in estimating the current sales price of a property from its assessed value. It was also utilized to estimate the 2000 sales value incorporated in Measures 3 and 4. Table 1 shows the median equalization ratios that were used in estimating current sales prices from assessed values.

Table 1: Housing Type by Median Equalization Ratio

HOUSING TYPE	MEDIAN EQUALIZATION RATIO (In Percent)	
	2000	2005
Single-family home	90.4	96.1
Multiple-family unit	92.3	96.4
Manufactured housing with land	96.5	94.0
Manufactured housing without land	93.2	92.8

The operationalization of the independent and intervening variables is shown in Table 2.

Table 2: Research Variables for Component 1

VARIABLE TYPE	VARIABLE NAME	OPERATIONAL DEFINITION
Independent Variables	Rent payments: <ul style="list-style-type: none"> ➤ amount ➤ rate of change 	<ul style="list-style-type: none"> ➤ current monthly rent amount ➤ annual percentage rent increase between the current rent amount and the amount prior to the most recent rent increase
	Availability of financial products exclusively offered to residents of member-owned parks	Access to NHCLF's Home Loans and loans offered by NHHFA
Intervening Variables	Age of house	Number of years between 2005 and the year the house was constructed
	Structural characteristics of housing units	<ul style="list-style-type: none"> ➤ Number of rooms ➤ Finished area (in sq. ft.)
	Park layout	<ul style="list-style-type: none"> ➤ Presence of park marker and street/traffic signs ➤ Presence of street lights in front of houses ➤ Ample yard space ➤ Two-car, off-street parking space
	Park location	Driving distances to the downtown area, schools, hospital, nearest shopping center, and major roads

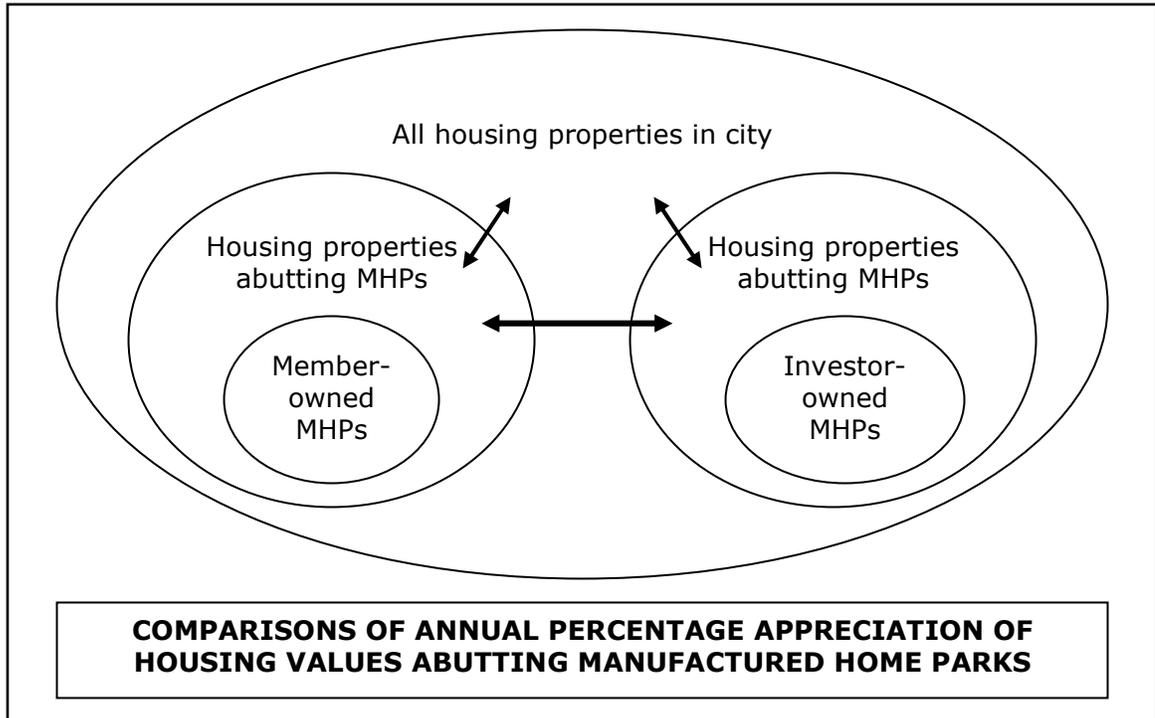
COMPONENT TWO: THE SPILLOVER EFFECT OF MEMBER-OWNED MANUFACTURED HOME PARKS ON ABUTTING HOMES

Even if housing units in manufactured home parks can be proven to appreciate in value (especially in member-owned parks), it is possible that opportunities to avail of this asset-accumulating strategy may be stifled by local zoning laws that make it difficult to establish manufactured home parks. One reason for the enactment of these restrictive laws is the belief that manufactured home parks negatively affect housing values of abutting properties. This is especially significant in New Hampshire because declines in property values would negatively affect the main source of tax revenues of cities and towns.

Given this, the research examines whether or not manufactured home parks affect the value of abutting properties by comparing the annual percentage appreciation of housing values of abutting properties to that of the entire city where these properties are located. Abutting properties are defined as housing units that directly border a manufactured home park. Other studies used a 1-mile radius surrounding the manufactured home park as a measure of abutment. However, these studies were all conducted in urban areas. Since most manufactured home parks in Rochester are not located in urban

centers, adopting a 1-mile radius definition of abutment might mix in too many unaffected homes, thus diluting the abutting effect. The study also compares the annual percentage appreciation of housing values between properties abutting member-owned and investor-owned parks. Figure 2 shows the comparisons that the study intends to undertake.

Figure 2: Conceptual Framework for Component 2



The computation of appreciation of housing values follows the same procedure for computing appreciation of manufactured housing units.

IV. RESEARCH QUESTION AND HYPOTHESES

RESEARCH QUESTION

Do households living in and around cooperative manufactured home parks in New Hampshire experience higher housing property value appreciation, compared to those in and around investor-owned parks?

HYPOTHESES

Component One: The Economic Advantage of Homeownership in Member-Owned Manufactured Home Parks

Main Hypothesis: Appreciation of property values is greater for housing units in member-owned manufactured home parks, compared to those in investor-owned parks, holding all intervening variables constant.

Sub-Hypothesis 1.A: Appreciation of property values of housing units in member-owned manufactured home parks is greater because the current rent amounts are lower, holding all other variables constant.

Sub-Hypothesis 1.B: Appreciation of property values of housing units in member-owned manufactured home parks is greater because the annual percentage rent increase is lower, holding all other variables constant.

Sub-Hypothesis 1.C: Appreciation of property values of housing units in member-owned manufactured home parks is greater because residents have access to NHHFA and NHCLF's Home Loans, holding all other variables constant.

Component Two: The Spillover Effect of Member-Owned Manufactured Home Parks on Abutting Homes

Exploratory Hypothesis: Appreciation of property values is greater for housing units abutting member-owned manufactured home parks, compared to those abutting investor-owned parks, all other variables held constant.

Sub-Hypothesis 2: There is no significant difference in the appreciation of property values in housing units abutting manufactured home parks, compared to all houses in the city or town where the abutting properties are located, all other variables held constant.

V. METHOD

DESIGN

Component One: The Economic Advantage of Homeownership in Member-Owned Manufactured Home Parks

The Main Hypothesis (i.e., appreciation of property values is greater for housing units in member-owned manufactured home parks, compared to those in investor-owned parks, holding all intervening variables constant) was tested using an archived proxy-pretest, multiple-treatment, quasi-experimental design, as shown in the following notation:

Housing units in member-owned parks: N O_{1A} $X_{1.1, 1.2, 1.3}$ O_{1B}

Housing units in investor-owned parks: N O_{1A} $X_{1.1, 1.2, 1.3}$ O_{1B}

where:

O_{1A} = base price

O_{1B} = current price

$X_{1.1}$ = current rent amount

$X_{1.2}$ = annual percentage rent increase

$X_{1.3}$ = access to NHHFA loans and NHCLF's Home Loans

N = nonrandom assignment

Component Two: The Spillover Effect of Member-Owned Manufactured Home Parks on Abutting Homes

The Exploratory Hypothesis (i.e., appreciation of property values is greater for housing units abutting member-owned manufactured home parks, compared to those abutting investor-owned parks, all other variables held constant) was tested using an archived proxy-pretest, two-treatment, expanded, quasi-experimental design, as shown in the following notation:

Housing units abutting member-owned parks:	N	O_{2A}	$X_{2.1}$	O_{2B}
Housing units abutting investor-owned parks:	N	O_{2A}	$X_{2.2}$	O_{2B}
Non-abutting housing units in Rochester NH:	N	O_{2A}		O_{2B}

where:

O_{2A} = base price

O_{2B} = current price

$X_{2.1}$ = proximity to member-owned manufactured home park

$X_{2.2}$ = proximity to investor-owned manufactured home park

N = nonrandom assignment

PARTICIPANTS

Component One: The Economic Advantage of Homeownership in Member-Owned Manufactured Home Parks

Testing the Main Hypothesis (i.e., appreciation of property values is greater for housing units in member-owned manufactured home parks, compared to those in investor-owned parks, holding all intervening variables constant) involved the following comparison groups:

- Comparison Group 1.A: All housing units in member-owned manufactured home parks in Rochester, New Hampshire.
- Comparison Group 1.B: All housing units in investor-owned manufactured home parks in Rochester, New Hampshire.

Identifying the study's comparison groups involved two phases. The first phase involved the selection of housing units representing Comparison Group 1.A, the steps for which are as follows:

- Identify New Hampshire cities or towns with member-owned manufactured home parks.
- For each city or town, add the number of housing units belonging to member-owned parks.
- List the cities or towns with member-owned parks from highest to lowest according to the total number of housing units.
- Cross out cities or towns that do not have investor-owned parks.

- Cross out cities or towns that have housing units in investor-owned parks that do not have comparable housing characteristics to housing units in member-owned parks.
- Cross out cities or towns where the number of housing units in member-owned parks is either 50 percent more or 50 percent less than the number of units in investor-owned parks.
- Select the city or town with the highest total number of housing units in member-owned parks.
- Identify the member-owned manufactured home parks located in the chosen city or town.
- The housing units in these member-owned parks constitute the study's Comparison Group 1.A.

The second phase involving the selection of Comparison Group 1.B was done as follows:

- Identify the investor-owned parks that are located in the city with the highest total number of housing units in member-owned parks.
- Cross out parks that have housing units that are not comparable to those in member-owned parks (this assessment was done by a professional assessor).
- Cross out parks that have a disproportionately large number of housing units, i.e., at least 50 percent more units than the largest member-owned park.
- Cross out parks that have housing units that are rented out by the investor/park owner.

- Identify the housing units in investor-owned parks that are located in the city with the highest total number of housing units
- in member-owned parks (i.e., Comparison Group 1.A).
- The remaining housing units constitute the study's Comparison Group 1.B.

Component Two: The Spillover Effect of Member-Owned Manufactured Home Parks on Abutting Homes

Testing the Exploratory Hypothesis (i.e., appreciation of property values is greater for housing units abutting member-owned manufactured home parks, compared to those abutting investor-owned parks, all other variables held constant) involved the following comparison groups:

- Comparison Group 2.A: Housing units abutting member-owned parks in Rochester, New Hampshire.
- Comparison Group 2.B: Housing units abutting investor-owned parks in Rochester, New Hampshire.
- Comparison Group 2.C: Non-abutting housing units in Rochester, New Hampshire.

INSTRUMENTATION

This study utilized secondary data gathering, key informant interviews, and direct observation to collect information on the dependent,

independent and intervening variables. Table 3 enumerates the specific data gathering techniques for each of the research variables.

Table 3: Data Gathering Techniques by Research Variable

VARIABLE NAME	OPERATIONAL DEFINITION	DATA GATHERING TECHNIQUE	DATA SOURCE
Appreciation of housing property value	<ul style="list-style-type: none"> ➤ Local equalization ratio ➤ Base price ➤ Current price 	<ul style="list-style-type: none"> ➤ Secondary data review ➤ Secondary data review ➤ Secondary data review 	<ul style="list-style-type: none"> ➤ City Assessing Office ➤ City Assessing Office; Real Data Corp. ➤ City Assessing Office; Real Data Corp.
Rent payments: <ul style="list-style-type: none"> ➤ amount ➤ rate of change 	<ul style="list-style-type: none"> ➤ Current monthly rent amount ➤ Annual percentage rent increase in the past 5 years 	Key informant interview; secondary data review	Home park management; NHCLF staff
Availability of financial products exclusively offered to member-owned park residents	Access to NHCLF's Home Loans, NHHFA loans	Secondary data review	Real Data Corp.
Age of housing unit	Year of construction of housing unit	Secondary data review	City Assessing Office
Structural characteristics of housing units	<ul style="list-style-type: none"> ➤ Number of rooms ➤ Finished area (in sq. ft.) 	Secondary data review	City Assessing Office
Park layout	<ul style="list-style-type: none"> ➤ Presence of park marker and street/traffic signs ➤ Presence of street lights in front of houses ➤ Ample yard space ➤ Two-car, off-street parking space 	Direct observation conducted by a professional assessor	Home parks
Park location	Driving distances to the downtown area, schools, hospital, nearest shopping center, and major roads	Direct observation conducted by a professional assessor	Home parks; major establishments

All secondary data are public records collected from the City Assessing Office, and Real Data Corporation. Secondary data from NHCLF and park management were not specific to individual residents. Ocular visits were undertaken by the researcher and a professional assessor to gather information on the park, as a whole; during these visits, no information was gathered on individual housing units. Driving distances were estimated by a professional assessor. The study did not involve interviews with individual residents.

ANALYSIS

Component One: The Economic Advantage of Homeownership in Member-Owned Manufactured Home Parks

Data analysis for Component One involved both descriptive and inferential statistics. Descriptive analysis utilized frequency distributions and crosstabulation of data to characterize the two comparison groups in terms of the dependent, independent and intervening variables. Measures of central tendency, dispersion and association were also utilized to differentiate the two comparison groups. Inferential analysis was used to account for differences in property appreciation rates between housing units in member-owned and investor-owned manufactured home parks. Statistical measures

used include analysis of variance, and chi square tests. In order to eliminate the effect of outliers, 5 percent of scores representing extreme values were trimmed before any data analysis was conducted.

Regression analysis using ordinary least squares was utilized to determine which, and to what extent, independent variables significantly affect the dependent variable; it was also used to control for the intervening variables. The OLS equation is as follows:

$$V = \dot{a} + \beta_{1.1}X_{1.1} + \beta_{1.2}X_{1.2} + \beta_{1.3}X_{1.3} + \beta_2X_2 + \beta_{3.1}X_{3.1} + \beta_{3.2}X_{3.2} + \beta_4X_4 + \beta_5X_5 + \beta_6X_6$$

where

V = annual rate of housing value appreciation

\dot{a} = constant

$\beta_{1.1}$ = coefficient of current rent amount

$X_{1.1}$ = current rent amount

$\beta_{1.2}$ = coefficient of annual percentage rent increase

$X_{1.2}$ = annual percentage rent increase

$\beta_{1.3}$ = coefficient of access to NHCLF's Home Loans, NHHA loans

$X_{1.3}$ = access to NHCLF's Home Loans, NHHA loans

β_2 = coefficient of age of housing unit

X_2 = age of housing unit

$\beta_{3.1}$ = coefficient of finished area

$X_{3.1}$ = finished area

$\beta_{3.2}$ = coefficient of number of rooms

$X_{3.2}$ = number of rooms

β_4 = coefficient of park layout

X_4 = index of park layout

β_5 = coefficient of index of park location

X_5 = index of park location

β_6 = coefficient of dummy variable

X_6 = dummy variable, where 0 = investor-owned park, 1 = member-owned park

All variables were first entered in the regression equation to determine goodness of fit (i.e., value of the adjusted R^2). If the equation is shown to account for at least 10 percent of the variation in the dependent variable (i.e., adjusted R^2 is at least 0.10), then stepwise regression was undertaken to trim down the number of variables to only those that are significantly related to the dependent variable.

Component Two: The Spillover Effect of Member-Owned Manufactured Home Parks on Abutting Homes

Data analysis for Component Two only involved descriptive statistics (measures of central tendency, dispersion and association) to differentiate the three comparison groups.

RELIABILITY/VALIDITY

Validity of the study's findings and conclusions was strengthened by adopting the following research design features:

1. On conclusion validity: use of inferential statistical measures and regression analysis to ascertain presence or absence of relationships asserted in the hypotheses.
2. On internal validity: use of (proxy) pre-test, post-test quasi-experimental design that compares measures longitudinally (between two time periods) and cross-sectionally (between and among comparison groups).
3. On construct validity: use of objectively verifiable indicators in the operationalization of research variables based on extensive and intensive literature review and discussions with industry experts.
4. On external validity: use of sufficient number of comparable cases/respondents.

Reliability of the study was attained by ensuring the quality of measurement, i.e., reducing measurement errors through the following:

1. use of secondary data from official sources that gather information on a regular and consistent basis;
2. use of statistically sound data standardization procedures, e.g., process of equalization, employed by the NH Department of Revenue Administration;
3. non-use of interviewers or observers apart from the researcher and a professionally trained assessor, thereby enhancing consistency of data gathering and observation; and
4. data entry into SPSS using the copy-and-paste method, instead of manual entry.

VI. SIGNIFICANCE

Findings and conclusions of the research will contribute to the following:

1. CED theory: verification of the effectiveness of CED-type interventions (i.e., cooperation) in alleviating poverty via homeownership-based asset accumulation.
2. CED practice: confirmation of the effectiveness of cooperative park management strategies and NHCLF interventions in promoting access to affordable housing that, at the same time, provides a venue for wealth accumulation; cooperative mode of ownership and management can be a model for replication in other states.
3. CED policy: basis for advocating for less restrictive local zoning laws that are presently biased against manufactured home parks; basis for advocating for more local, state and federal funding for the development and further enhancement of cooperative manufactured home parks; basis for advocating for greater access to financial resources from market-based institutions who might still perceive manufactured home park residents as non-viable segments of the housing market.

VII. LIMITATIONS

The following are the limitations of the study:

1. Random assignment cannot be employed in the formation of comparison groups. This downgrades the research design from experimental to quasi-experimental.
2. The study partly relies on estimated, rather than actual, selling prices of housing units in the computation of the appreciation of housing property values. The estimation of selling price from assessed value involves the use of equalization procedures.
3. The study does not account (but controls) for the effects of macro-level factors on the appreciation of housing property value.
4. Findings apply only to housing property in and abutting manufactured home parks in Rochester, New Hampshire.

VIII. PRESENTATION OF RESULTS

The results of the study are presented in two sub-sections. The first sub-section presents information characterizing housing units located in manufactured home parks. These results are the bases for the analysis and ensuing discussion of findings pertinent to the Main Hypothesis of this research. The second sub-section provides information on housing units abutting manufactured home parks. These results form the bases for the analysis and discussion of findings related to the study's Exploratory Hypothesis.

SUB-SECTION 1: PRESENTATION OF RESULTS PERTINENT TO THE MAIN HYPOTHESIS

Number of Manufactured Housing Units in Parks

According to the city's Assessing Office, Rochester has 12,070 housing units in 2005. A total of 2,160 (or 17.9 percent) of these units are manufactured homes located in parks. This makes Rochester the city or town in New Hampshire with the highest number of manufactured homes located in parks, and the highest proportion of manufactured homes in relation to the city's total number of residential units.

Based on the selection criteria described earlier in the Methodology section, the study examined property value appreciation of 1,365 manufactured homes in 18 of the 24 home parks in Rochester NH. A total of 431 of these housing units are located in all of the 7 member-owned parks, while 934 of them are located in 11 of the 17 investor-owned parks. Table 4 provides a breakdown of the number of housing units according to the type of park ownership.

Table 4: Park Name and Number of Housing Units by Park Ownership Type

HOMES IN MEMBER-OWNED PARKS		HOMES IN INVESTOR-OWNED PARKS	
Park Name	Number of Housing Units	Park Name	Number of Housing Units
Village at Riverside	178	Chestnut Hill	180
Fieldstone Village	100	Paradise	139
Royal Crest	79	Westwind I	124
Four Seasons	30	Charles Prescott Estates	111
Silverbell	21	Lilac City East	101
Country Ridge	14	Rochester Terrace	91
Whispering Pines	9	Saks	76
		Pineview	37
		Ridgewood	31
		Lilac City West	28
		Westwind II	16
Total	431	Total	934
Grand Total			1,365

Age of Housing Units

The age of manufactured homes ranges from less than a year old to 47 years old. The average age of homes is just above 21 years old, with a standard deviation of about nine and ½ years. Table 5 shows the age of housing units according to type of park ownership.

Table 5: Age of Housing Units by Park Ownership Type

AGE OF HOUSING UNIT	PERCENTAGE		
	Homes in Member-owned Parks	Homes in Investor-owned Parks	Total
5 years old or less	2	8	6
Between 6 and 10 years old	8	10	9
Between 11 and 15 years old	5	8	7
Between 16 and 20 years old	50	15	26
Over 20 years old	34	59	51
Total	100	100	100

$$\chi^2 = 196.80 (p < .01)$$

There is a significant difference between homes in member-owned parks and those in investor-owned parks in terms of the age of housing units; a chi-square test validates this result. More than half of homes in investor-owned parks are more than 20 years old, while half of those in member-owned parks are between, 16 and 20 years old.

Number of Rooms

Almost all (91 percent) of the manufactured homes have either four or five rooms. The average number of rooms is between four and five rooms, with a standard deviation of a little less than one room (0.72).

Table 6 shows the number of rooms according to type of park ownership.

Table 6: Number of Rooms by Park Ownership Type

NUMBER OF ROOMS	PERCENTAGE		
	Homes in Member-owned Parks	Homes in Investor-owned Parks	Total
3 or less rooms	0	2	1
4 rooms	31	58	50
5 rooms	59	33	41
6 or more rooms	9	7	8
Total	100	100	100

$$\chi^2 = 100.80 (p < .01)$$

There is a significant difference between member-owned and investor-owned parks in terms of the number of rooms; a chi-square test validates this result. Almost 70 percent of homes in member-owned parks have five or more rooms, compared only 40 percent of those in investor-owned parks.

Finished Area

The living space inside manufactured homes is measured by the finished area in square feet. The finished area of the homes studied ranges from 420 to 2,128 square feet; the average square footage is 1,003. Table 7 compares the finished area between housing units in member- and investor-owned parks.

Table 7: Finished Area by Park Ownership Type

FINISHED AREA	SQUARE FEET		
	Homes in Member-owned Parks	Homes in Investor-owned Parks	Total
Mean	1,059	978	1,003
Minimum	480	420	420
Maximum	2,008	2,128	2,128
Range	1,528	1,708	1,708
Standard Deviation	208	265	251

$t = -6.10$ ($p < .01$)

The table above indicates that housing units in member-owned parks, on the average, have slightly larger finished area.

Park Layout

Park Layout is defined by the following characteristics: [1] presence of park marker and street signs, [2] presence of street lights in front of homes, [3] ample yard space, and [4] ample vehicle parking space.

Information on these features was collected through ocular visits to all 18 parks with the presence of a professional assessor who provided technical advice in rating the park layout features of all the parks.

Rating options for the presence of park marker and street signs are as follows:

0 = without park marker and street signs

1 = with either park marker or street signs

2 = with both park marker and street signs

Table 8 indicates that the presence of both park marker and street signs are far more prevalent in member-owned parks (6 of 7 parks).

This is true only for five of the 11 investor-owned parks.

Table 8: Presence of Park Marker and Street Signs by Park Ownership Type

PRESENCE OF PARK MARKER AND STREET SIGNS	NUMBER	
	Homes in Member-owned Parks	Homes in Investor-owned Parks
Without park marker and street signs	0 of 7	2 of 11
With either park marker or street signs	1 of 7	4 of 11
With both park marker and street signs	6 of 7	5 of 11

The presence of street lights in front of houses is rated as follows:

0 = all homes without street lights

1 = some homes with street lights

2 = all homes with street lights

Table 9 shows that the presence of street lights in front of homes is far more common in member-owned parks (6 of 7 parks), compared to investor-owned parks (4 of 11).

Table 9: Presence of Street Lights in Front of Homes by Park Ownership Type

PRESENCE OF STREET LIGHTS IN FRONT OF HOMES	NUMBER	
	Homes in Member-owned Parks	Homes in Investor-owned Parks
All homes without street lights	1 of 7	7 of 11
Some homes with street lights	0 of 7	0 of 11
All homes with street lights	6 of 7	4 of 11

The sufficiency of yard space is based on the judgment of a professional assessor with regard to lot size. Rating options for sufficiency of yard space are as follows:

0 = all homes without ample yard space

1 = some homes with ample yard space

2 = all homes with ample yard space

Table 10 shows that yard space is sufficient in all homes located in all of the seven member-owned parks. On the other hand, only four of the 11 investor-owned parks have all homes with ample yard space.

Table 10: Sufficiency of Yard Space by Park Ownership Type

SUFFICIENCY OF YARD SPACE	NUMBER	
	Homes in Member-owned Parks	Homes in Investor-owned Parks
All homes without ample yard space	0 of 7	2 of 11
Some homes with ample yard space	0 of 7	5 of 11
All homes with ample yard space	7 of 7	4 of 11

The sufficiency of vehicle parking space is also based on the judgment of a professional assessor. Rating options for sufficiency of parking space are as follows:

0 = all homes without off-street, 2-car parking space

1 = some homes with off-street, 2-car parking space

2 = all homes with off-street, 2-car parking space

Table 11 shows that parking space is sufficient in all homes located in all of the seven member-owned parks. On the other hand, five of the 11 investor-owned parks have all homes with ample parking space.

Table 11: Sufficiency of Vehicular Parking Space by Park Ownership Type

SUFFICIENCY OF VEHICULAR PARKING SPACE	NUMBER	
	Homes in Member-owned Parks	Homes in Investor-owned Parks
All homes without off-street, 2-car parking space	0 of 7	2 of 11
Some homes with off-street, 2-car parking space	0 of 7	4 of 11
All homes with off-street, 2-car parking space	7 of 7	5 of 11

To summarize these park layout characteristics, an index of park layout was developed by adding the rating of each of the four park

layout characteristics, and then dividing it by the sum of the maximum rating (maximum = 2) of each of the four characteristics.

$$\text{Park Layout Index} = \frac{\sum (x_1, \dots, x_4)}{\sum (\text{max}_1, \dots, \text{max}_4)}$$

where,

x_1 = rating for presence of park marker and street signs

x_2 = rating for presence of street lights in front of homes

x_3 = rating for sufficiency of yard space

x_4 = rating for sufficiency of parking space

max_1 = maximum rating for presence of park marker and street signs = 2

max_2 = maximum rating for presence of street lights in front of homes = 2

max_3 = maximum rating for sufficiency of yard space = 2

max_4 = maximum rating for sufficiency of parking space = 2

Values for the Park Layout Index range from 0 to 1. A Park Layout Index equal to 0 means that: [1] a home belongs to a park that does not have a marker and street signs, [2] there is no street light in front of the house, [3] it does not have ample yard space, and [4] there is no off-street parking for two vehicles. On the other hand, a Park Layout Index equal to 1 means that: [1] a home belongs to a park

that has a marker and street signs, [2] there is a street light in front of the house, [3] it has ample yard space, and [4] there is off-street parking for two vehicles. Table 12 summarizes the Park Layout Index for housing units in member- and investor-owned parks.

Table 12: Park Layout Index by Park Ownership Type

PARK LAYOUT INDEX	VALUE (Between 0 And 1)		
	Homes in Member-owned Parks	Homes in Investor-owned Parks	Total
Mean	0.93	0.64	0.73
Minimum	0.75	0.13	0.13
Maximum	1.00	1.00	1.00
Range	0.25	0.88	0.88
Standard Deviation	0.10	0.24	0.25

$t = -31.24$ ($p < .01$)

The table above shows a significant difference between member-owned and investor-owned parks in terms of the Park Layout Index, wherein the park layout is more favorable in member-owned parks compared to investor-owned ones.

Park Location

Park Location is defined in terms of estimated driving distances to the following establishments and major roads: [1] downtown area, [2]

schools (grade school and high school), [3] nearest shopping center, [4] hospital, and [5] major road leading to sources of employment outside the city (Spaulding Highway and other major roads). Driving distances were estimated by a professional assessor who visits the manufactured home parks on a regular basis. The ordinal scale used to estimate driving distances are as follows:

0 = short walking distance (i.e., no need to drive)

1 = less than 5-minute drive

2 = 5- to 10-minute drive

3 = 10- to 15-minute drive

4 = 15- to 30-minute drive

5 = more than 30-minute drive

Table 13 details the estimated driving distance between each park and the establishments and roads discussed above.

Table 13: Park Ownership Type by Estimated Driving Distance to Major Establishments/Roads

NAME OF PARK	ESTIMATED DRIVING DISTANCE FROM PARK TO MAJOR ESTABLISHMENTS/ROADS						
	Down-town	Spaulding Highway	Other Major Road	Grade School	High School	Shopping Center	Hospital
Member-owned Park							
Country Ridge	3	4	0	3	4	4	2
Fieldstone Village	1	2	0	3	2	2	2
Four Seasons	2	1	0	3	1	1	4
Royal Crest	1	2	1	2	3	2	2
Silverbell	2	0	0	4	2	0	4
Village at Riverside	3	1	0	4	3	1	4
Whispering Pines	3	3	2	4	4	4	3
Investor-owned Park							
Chestnut Hill	2	0	0	3	1	1	3
Charles Prescott	2	3	2	3	3	4	1
Lilac City	2	3	0	4	4	4	3
Lilac East	2	3	0	4	4	4	3
Lilac West	2	3	0	4	4	4	3
Pineview	1	2	0	2	2	2	2
Paradise	3	3	1	3	3	4	4
Ridgewood	3	1	0	3	3	1	3
Rochester Terrace	4	2	1	4	3	1	4
Saks	3	1	0	3	3	1	3
Westwind I	2	1	0	4	2	1	4
Westwind II	2	1	0	4	2	1	4

Table 14 shows the difference between member-owned and investor-owned parks in terms of average estimated driving distance between the park and major establishments and roads.

Table 14: Estimated Average Driving Distance by Park Ownership Type

ESTABLISHMENTS AND MAJOR ROADS	AVERAGE ESTIMATED DRIVING DISTANCE 0 = short walking distance (i.e., no need to drive) 1 = less than 5-minute drive 2 = 5- to 10-minute drive 3 = 10- to 15-minute drive 4 = 15- to 30-minute drive 5 = more than 30-minute drive			
	Homes in Member- owned Parks	Homes in Investor- owned Parks	Total	t-test
Downtown	2.05	2.42	2.30	7.21 (p < .01)
Major Highway (average of Spaulding Highway and Other Highway)	0.87	1.12	1.04	6.77 (p < .01)
Schools (average of grade and high school)	2.97	2.95	2.96	-0.35 (p = .72)
Shopping Center	1.53	2.26	2.03	11.82 (p < .01)
Hospital	3.08	3.12	3.11	0.62 (p = .53)

The table above shows that there are a number of significant differences between member-owned and investor-owned parks when it comes to average estimated driving distance between the park and the

following: downtown, major highway, and shopping center. On the average housing units in member-owned parks have shorter driving distances to these locations.

An index of location (as measured by driving distances) was developed by adding the ordinally-scaled distances between the park and each of the five establishments/roads, and then dividing this by the sum of the maximum rating (maximum = 5) of each of the five locations.

$$\text{Location Index} = \frac{\sum (x_1, \dots, x_5)}{\sum (\text{max}_1, \dots, \text{max}_5)}$$

where,

x_1 = ordinally scaled distance between park and downtown area

x_2 = ordinally scaled distance between park and major roads

x_3 = ordinally scaled distance between park and schools

x_4 = ordinally scaled distance between park and shopping center

x_5 = ordinally scaled distance between park and hospital

max_1 = maximum ordinally scaled distance between park and downtown area = 5

max_2 = maximum ordinally scaled distance between park and major roads = 5

max_3 = maximum ordinally scaled distance between park and schools = 5

max_4 = maximum ordinally scaled distance between park and shopping center = 5

max_5 = maximum ordinally scaled distance between park and hospital = 5

Values for the Location Index range from 0 to 1. A Location Index equal to 0 means that a home is a short walking distance to the downtown area, major roads, schools, shopping center and hospital. On the other hand, a Location Index equal to 1 means that a home is more than a 30-minute drive away from all the establishments and roads listed above. Table 15 summarizes the Location Index for housing units in member- and investor-owned parks.

Table 15: Location Index by Park Ownership Type

LOCATION INDEX	VALUE (Between 0 And 1)		
	Homes in Member-owned Parks	Homes in Investor-owned Parks	Total
Mean	0.42	0.47	0.46
Minimum	0.34	0.32	0.32
Maximum	0.66	0.64	0.66
Range	0.32	0.32	0.34
Standard Deviation	0.08	0.11	0.11

$t = 10.50$ ($p < .01$)

The table above shows a significant difference between member-owned and investor-owned parks in terms of the Location Index.

Rent Amount

Monthly rent amounts differ between member-owned and investor-owned parks. Table 16 shows that rent amounts, on the average, are higher in investor-owned parks. However, the range of rent amounts is wider in member-owned parks.

Table 16: Monthly Rent (1) by Park Ownership Type

MONTHLY RENT (1)	AMOUNT (In \$)		
	Homes in Member-owned Parks	Homes in Investor- owned Parks	Total
Mean	278.42	303.57	295.63
Minimum	200.00	260.00	200.00
Maximum	315.00	330.00	330.00
Range	115.00	70.00	130.00
Standard Deviation	33.63	16.83	26.21

$t = 14.70$ ($p < .01$)

The observation that monthly rent is relatively lower in member-owned parks is confirmed by Table 17. It shows that more member-owned parks charge monthly rents lower than \$300, in both relative and absolute terms. It must be noted that rent information was not

available for housing units in two investor-owned parks. In lieu of actual data, the average monthly rent amount for housing units in investor-owned parks with available rent-related information was used.

Table 17: Monthly Rent (2) by Park Ownership Type

MONTHLY RENT (2)	NUMBER		
	Homes in Member-owned Parks	Homes in Investor- owned Parks	Total
Below \$250	3 of 7 parks	0 of 11 parks	3 of 18 parks
\$250 – below \$300	3 of 7 parks	4 of 11 parks	7 of 18 parks
\$300 and above	1 of 7 parks	7 of 11 parks	8 of 18 parks

Annual Rate of Rent Increase

At the outset, it must be noted that information on rent history is incomplete. Information was available only for housing units located in nine of the 18 parks. Information was available for four of the seven member-owned parks, and five of the 11 investor-owned parks. In lieu of actual data, the average annual rent increases for housing units with available rent-related information was used. Based on these approximations, the annual rate of rent increase differs between member-owned and investor-owned parks. Table 18 shows that the annual rate is higher in investor-owned parks.

Table 18: Annual Rate of Rent Increase by Park Ownership Type

ANNUAL RATE OF RENT INCREASE	PERCENTAGE		
	Homes in Member-owned Parks	Homes in Investor-owned Parks	Total
Mean	3.9	4.5	4.3
Minimum	1.3	3.0	1.3
Maximum	5.9	8.2	8.2
Range	4.3	5.6	6.9
Standard Deviation	1.6	1.4	1.5

t = 6.83 (p < .01)

Assessed Value of Manufactured Homes

Rochester's Assessing Office estimates the value of properties every two to three years. These estimates can be adjusted so that they are more reflective of the fair market values of properties; this is done by applying the equalization procedure discussed earlier. Table 19 shows the 2005 assessed values of housing units located in parks; these values are adjusted using the median equalization ratio for manufactured homes without land equal to 92.8 percent.

Table 19: Adjusted 2005 Value by Park Ownership Type

ADJUSTED 2005 ASSESSED VALUE	AMOUNT (In \$) (adjusted using median equalization ratio = 92.8 percent)		
	Homes in Member-owned Parks	Homes in Investor- owned Parks	Total
Median	52,748.41	36,575.05	44,080.34
Mean	56,533.31	46,683.43	49,793.54
Minimum	19,767.00	10,888.00	10,888.00
Maximum	148,203.00	187,104.00	187,104.00
Range	128,436.00	176,216.00	176,216.00
Standard Deviation	16,292.71	30,822.39	27,467.81

t = -7.71 (p < .01)

The table indicates a significant difference in adjusted 2005 assessed values between homes in member-owned and investor-owned parks. This is better gleaned from the difference in median values (rather than mean values) because of the presence of outliers at the higher end of the value range. The table also shows that there is more dispersion in the assessed values of homes in investor-owned parks.

Table 20 shows the adjusted 2000 assessed values of manufactured homes in parks; the median equalization ratio used is 93.2 percent.

Table 20: Adjusted 2000 Assessed Value by Park Ownership Type

ADJUSTED 2000 ASSESSED VALUE	AMOUNT (In \$) (adjusted using median equalization ratio = 93.2 percent)		
	Homes in Member-owned Parks	Homes in Investor- owned Parks	Total
Median	27,897.00	19,420.60	24,678.11
Mean	30,343.10	26,472.16	27764.50
Minimum	6,223.00	5,365.00	5,365.00
Maximum	75,751.00	103,541.00	103,541.00
Range	69,528.00	98,178.00	98,176.00
Standard Deviation	9,724.12	19,268.04	16,794.87

t = -4.76 (p < .01)

Once again, there is a significant difference in the adjusted 2000 assessed values between homes in member-owned and investor-owned parks. This is reflected in the large difference in median assessed values. The table also shows that there is significantly more dispersion in the assessed values of homes in investor-owned parks.

2004-2005 Manufactured Home Sales

Of the 1,365 manufactured homes studied, 215 (or 15.8 percent) were sold in 2004 and 2005. Table 21 shows the number and percentage of housing units sold in 2004-2005 according to park ownership type.

Table 21: 2004-2005 Manufactured Home Sales by Park Ownership Type

2004-2005 MANUFACTURED HOME SALES	Homes in Member- owned Parks		Homes in Investor- owned Parks		Total	
	#	%	#	%	#	%
Not sold in 2004-2005	370	86%	780	84%	1,150	84%
Sold in 2004-2005	61	14%	154	16%	215	16%

$$\chi^2 = 1.21 (p = .27); \phi = -0.03 (p = .27)$$

There is no significant difference in the percentage of housing units sold in 2004-2005 between homes in member-owned and investor-owned parks.

2004-2005 Selling Prices of Manufactured Homes

There is a significant difference between homes in member-owned and investor-owned parks in terms of the selling price of homes sold in 2004-2005. Table 22 shows that, on average, homes in member-owned parks sold for a higher price.

Table 22: 2004-2005 Selling Price by Park Ownership Type

2004-2005 SELLING PRICE	AMOUNT (In \$)		
	Homes in Member-owned Parks	Homes in Investor- owned Parks	Total
Median	48,533.00	37,000.00	40,000.00
Mean	51,942.51	44,656.62	46,723.78
Minimum	11,333.00	4,800.00	4,800.00
Maximum	90,000.00	162,533.00	162,533.00
Range	78,667.00	157,733.00	157,733.00
Standard Deviation	17,637.61	28,507.94	26,059.61

$t = -2.26$ ($p < .03$)

Mortgage Use

Of the 215 homes sold in 2004-2005, 106 (or 49 percent) of the buyers used a mortgage in purchasing a home. Table 23 shows the use of mortgage in purchasing homes in member-owned and investor-owned parks.

Table 23: Mortgage Use by Park Ownership Type

MORTGAGE USE	Homes in Member- owned Parks		Homes in Investor- owned Parks		Total	
	#	%	#	%	#	%
Did not use mortgage	7	12%	102	66%	109	51%
Used mortgage	54	88%	52	34%	106	49%

$\chi^2 = 52.41$ ($p < .01$); $\phi = 0.49$ ($p < .01$)

The table above shows that there is a strong association between type of park ownership and mortgage use. An overwhelming 88 percent of buyers of homes in member-owned parks used a mortgage, compared to only 34 percent of buyers of homes in investor-owned parks.

Of the 106 sales that involved the use of a mortgage, 54 (or 51 percent) availed of loans from the New Hampshire Housing Finance Authority (NHHFA) or New Hampshire Community Loan Fund (NHCLF). All of the 54 NHHFA/NHCLF loans were accessed by purchasers of homes located in member-owned parks. None of purchasers of the homes located in investor-owned parks availed of mortgages from NHHFA or NHCLF because these agencies' manufactured home loans are exclusive to housing units located in member-owned parks.

SUB-SECTION 2: PRESENTATION OF RESULTS PERTINENT TO THE EXPLORATORY HYPOTHESIS

Number of Housing Units Abutting Manufactured Home Parks

Based on the selection criteria described earlier in the Methodology section, the study looked at 199 residential homes abutting the manufactured home parks. Some 83 of these homes are situated

around member-owned parks; the remaining 116 homes abut investor-owned parks. Table 24 shows the distribution of homes in terms of the parks they abut.

Table 24: Park Name and Number of Abutting Units by Ownership Type of Abutting Park

HOMES ABUTTING MEMBER-OWNED PARKS		HOMES ABUTTING INVESTOR-OWNED PARKS	
Park Name	Number of Abutting Housing Units	Park Name	Number of Abutting Housing Units
Village at Riverside	24	Chestnut Hill	11
Fieldstone Village	6	Paradise	25
Royal Crest	11	Westwind I	4
Four Seasons	10	Charles Prescott Estates	6
Silverbell	9	Lilac City East	5
Country Ridge	9	Rochester Terrace	17
Whispering Pines	14	Saks	12
		Pineview	8
		Ridgewood	3
		Lilac City West	20
		Westwind II	5
Total	83	Total	116
Grand Total			199

Assessed Value of Housing Units Abutting Manufactured Home Parks

Table 25 shows the 2005 assessed values of housing units abutting parks; these values are adjusted using the median equalization ratio specific to the type of home abutting a park.

Table 25: Park Name and Number of Abutting Units by Ownership Type of Abutting Park

ADJUSTED 2005 ASSESSED VALUE OF ABUTTING HOMES	AMOUNT (in \$) (adjusted using median equalization ratio)		
	Homes Abutting Member-owned Park	Homes Abutting Investor- owned Park	Total
Median	185,535.90	189,854.32	187,929.24
Mean	193,599.45	195,449.21	194,677.70
Minimum	32,346.72	27,484.14	27,484.14
Maximum	509,261.19	402,081.17	509,261.19
Range	476,914.46	374,597.02	481,777.04
Standard Deviation	70,616.77	51,060.46	59,835.71

$t = -0.20$ ($p = .84$)

The table indicates that there is no significant difference in adjusted 2005 assessed values between homes abutting member-owned and investor-owned parks. This can be seen in the almost equal median and mean assessed values of homes abutting member-owned and investor-owned parks.

Table 26 shows the adjusted 2000 assessed values of housing units abutting manufactured home parks.

Table 26: Adjusted 2000 Assessed Value of Abutting Homes by Ownership Type of Abutting Park

ADJUSTED 2000 ASSESSED VALUE OF ABUTTING HOMES	AMOUNT (in \$) (adjusted using median equalization ratio)		
	Homes Abutting Member-owned Park	Homes Abutting Investor- owned Park	Total
Median	94,407.11	101,416.40	99,479.92
Mean	100,229.90	103,167.99	101,942.56
Minimum	16,738.20	18,133.05	16,738.20
Maximum	385,968.80	220,869.76	385,968.80
Range	369,230.60	202,736.71	369,230.60
Standard Deviation	57,408.84	33,160.79	44,785.10

$t = -0.42$ ($p = .68$)

Similar to the 2005 case, there is no significant difference in the adjusted 2000 assessed values between homes abutting member-owned and investor-owned parks. The table also shows that there is significantly more dispersion in the assessed values of homes in investor-owned parks.

2004-2005 Sales of Homes Abutting Manufactured Home Parks

Of the 199 abutting homes studied, only 12 (or 6 percent) were sold in 2004 and 2005. Table 27 shows the number and percentage of abutting housing units sold in 2004-2005 according to the type of park abutted.

Table 27: 2004-2005 Abutting Home Sales by Ownership Type of Abutting Park

2004-2005 ABUTTING HOME SALES	Homes Abutting Member-owned Park		Homes Abutting Investor-owned Park		Total	
	#	%	#	%	#	%
Not sold in 2004-2005	78	94%	109	94%	187	94%
Sold in 2004-2005	5	6%	7	6%	12	6%

$$\chi^2 = 0.00 (p = 1.0); \phi = 0.00 (p = 1.0)$$

There is no difference in the percentage of housing units sold in 2004-2005 between abutting homes in member-owned and investor-owned parks.

It is important to note the limited number of abutting housing units (12) that were sold in 2004-2005. This limited the ability of the study to statistically compare housing value appreciation between manufactured homes and abutting houses that were sold in 2004-

2005. This only means that the study relied a lot on the adjusted 2005 assessed values when comparing housing value appreciation between manufactured homes and abutting houses.

2004-2005 Selling Prices of Homes Abutting Manufactured Home Parks

Even if, on the average, homes abutting member-owned parks have a higher selling price, it is difficult to say whether or not there is a significant difference in selling prices between homes in member-owned and investor-owned parks. Table 28 shows the 2004-2005 selling prices of housing units abutting manufactured home parks.

Table 28: 2004-2005 Selling Price by Ownership Type of Abutting Park

2004-2005 SELLING PRICE	AMOUNT (in \$)		
	Homes Abutting Member-owned Parks	Homes Abutting Investor- owned Parks	Total
Median	170,000.00	165,533.00	167,766.50
Mean	195,079.80	143,790.43	165,161.00
Minimum	126,533.00	20,000.00	20,000.00
Maximum	274,933.00	235,000.00	274,933.00
Range	148,400.00	215,000.00	254,933.00
Standard Deviation	66,377.36	70,772.36	70,934.51

t = 1.27 (p = .23)

While the mean sales values show a big difference, the median sales values show a very small difference in selling prices. This is mainly due to the wide ranges of selling prices, and the limited number of abutting homes sold in 2004-2005.

SECTION SUMMARY

In sum, there is no difference in housing values between homes abutting member-owned and investor-owned parks. Table 29 summarizes these home values according to type of abutted home parks.

Table 29: Housing Values of Abutting Homes by Ownership Type of Abutting Park

HOUSING VALUES OF ABUTTING HOMES	Homes Abutting Member-owned Parks	Homes Abutting Investor-owned Parks	Statistics
Median (<i>and Mean</i>) 2005 adjusted assessed value of housing unit	\$185,535.90 (\$193,599.45)	\$189,854.32 (\$195,449.21)	t = -0.20 (p = .84)
Median (<i>and Mean</i>) 2000 adjusted assessed value of housing unit	\$94,407.11 (\$100,229.90)	\$101,416.40 (\$103,167.99)	t = -0.42 (p = .68)
Median (<i>and Mean</i>) 2004-2005 selling price	\$170,000.00 (\$195,079.80)	\$165,533.00 (\$143,790.43)	t = 1.27 (p = .23)

On the other hand, housing values of manufactured homes in member-owned parks significantly differ from those in investor-owned parks, as show in Table 30.

Table 30: Housing Values of Homes in Parks by Park Ownership Type

HOUSING VALUES OF HOMES IN PARKS	Homes in Member-owned Parks	Homes in Investor-owned Parks	Statistics
Median (<i>and Mean</i>) 2005 adjusted assessed value of housing unit	\$52,748.41 (\$56,533.31)	\$36,575.05 (\$46,683.43)	t = -7.71 (p < .01)
Median (<i>and Mean</i>) 2000 adjusted assessed value of housing unit	\$27,897.00 (\$30,343.10)	\$19,420.60 (\$26,472.16)	t = -4.76 (p < .01)
Median (<i>and Mean</i>) 2004-2005 selling price	\$48,533.00 (\$51,942.51)	\$37,000.00 (\$44,656.62)	t = -2.26 (p < .03)
Percentage of housing units bought with mortgage	88%	34%	$\chi^2 = 52.41$ (p < .01); $\phi = 0.49$ (p < .01)

It is important to note that the correspondence between actual 2004-2005 selling prices and the 2005 adjusted assessed values goes beyond measures of central tendency (i.e., median and mean). In terms of measures of association, there is a very strong correlation between the selling prices of manufactured homes in parks that were sold in 2004-2005 and their corresponding adjusted 2005 assessed

values, as shown by a Pearson's r value of 0.916 ($p < .001$). In other words, adjusted assessed values are very good estimators of actual selling prices. This is important because, as discussed earlier in the Methodology section, adjusted assessed values were used to estimate the selling prices of homes that were not sold in 2004-2005.

Homes in member-owned parks also differ from those in investor-owned parks in terms of a number of housing and rent-related characteristics; Table 31 provides a summary of these differences.

Table 31: Housing Characteristics of Homes in Parks by Park Ownership Type

HOUSING CHARACTERISTICS OF HOMES IN PARKS	Homes in Member-owned Parks	Homes in Investor-owned Parks	Statistics
Percentage of housing units below 20 years old	65%	42%	$\chi^2 = 196.80$ ($p < .01$)
Percentage of housing units with 5 or more rooms	68%	40%	$\chi^2 = 100.80$ ($p < .01$)
Finished area (in sq.ft.)	1,059	978	$t = -6.10$ ($p < .01$)
Index of park layout (range: 0 to 1; 0 = worst, 1 = best)	0.93	0.64	$t = -31.24$ ($p < .01$)
Index of park location (range: 0 to 1; 0 = best, 1 = worst)	0.42	0.47	$t = 10.50$ ($p < .01$)
Average monthly rent amount	\$278.42	\$303.00	$t = 14.70$ ($p < .01$)
Annual rate of rent increase	3.9%	4.5%	$t = 6.83$ ($p < .01$)

Compared to those in investor-owned parks, manufactured homes in member-owned parks are, on the average, build more recently, have more rooms, have larger living spaces, have better park layout, are closer to major establishments and roads, and have more favorable rent situation.

These housing and rent-related characteristics of member-owned parks could explain the difference in housing values. To ascertain this, a regression is ran, first to determine goodness of fit (i.e., value of the adjusted R^2). If the equation is shown to account for at least 10 percent of the variation in the dependent variable (i.e., value of adjusted R^2 is at least 0.10), then stepwise regression is undertaken to trim down the number of variables to only those that are significantly related to the dependent variable.

The regression's independent and intervening variables that are entered in the righthand side of the equation are the following:

- Park ownership type (dummy variable)
- Current monthly rent amount
- Annual percentage rent increase
- Age of housing unit
- Number of rooms
- Finished area
- Park location index
- Park layout index

Access to NHHFA and NHCLF loans is not included because it just replicates the dummy variable, park ownership type, i.e., housing units in member-owned parks access NHHFA and NHCLF loans, while housing units in investor-owned parks do not have access. The study's dependent variable is housing value as measured by the adjusted 2005 assessed value of all manufactured homes. Table 32 presents the result of the regression.

Table 32: Model Fit of Regression of Housing Value

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.875	.765	.763	13373.027

An adjusted R^2 value of .763 indicates that 76.3 percent of variations in housing value is accounted for by the independent and intervening variables. Table 33 shows that six of the eight independent and intervening variables are significantly related to the dependent variable, when controlled against each other (refer to the last column of the table).

Table 33: Coefficients of Regression of Housing Values

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-5104.953	7061.216		-.723	.470
	Types of MHP (Coop vs Non-Coop)	4612.425	1405.789	.063	3.281	.001
	Current Rent	-12.041	23.898	-.011	-.504	.614
	Average Annual Rent Increase	1210.373	355.569	.064	3.404	.001
	Age of Housing Unit	-960.627	46.920	-.331	-20.474	.000
	Finished Area (sq.ft.)	64.437	2.170	.588	29.694	.000
	Number of Rooms	214.827	656.512	.006	.327	.744
	Location Index (Index of Driving Distances)	-9455.936	5281.244	-.036	-1.790	.074
	Park Features Index	16011.952	2005.952	.144	7.982	.000

The following are descriptions of the effect of each of the significant variables on housing value:

- Controlling for other variables, the value of a home in a member-owned park is \$4,612.43 more than a home in an investor owned park.
- Controlling for other variables, a one percentage point increase in annual rent rate will increase home value by \$1,210.37. This seems contrary to conventional wisdom, i.e., a person is expected to pay less for a home that has a higher annual rent

rate increase. However, it is possible that buyers do not have information on rent history when purchasing a home.

- Controlling for other variables, an increase in the age of a housing unit by one year decreases home value by \$960.63.
- Controlling for other variables, a one square foot increase in finished area increases home value by \$64.44.
- Controlling for other variables, if the location index decreases by 0.1 in a range of 0 to 1, home value increases by \$945.59. In other words, if a park is 0.1 index point closer to important establishments and/or major roads, home value increases by \$945.59.
- Controlling for other variables, if the park layout index increases by 0.1 in a range of 0 to 1, home value increases by \$1,601.20. In other words, if a park layout is improved by 0.1 index points, home value increases by \$1,601.20.

IX. DATA ANALYSIS

Do differences in housing characteristics and housing values between member-owned and investor-owned parks translate to differences in housing value appreciation? Do homes abutting parks appreciate in value? Is there a difference in value appreciation depending on the type of park they abut? The Data Analysis section addresses these questions in three sub-sections.

The first sub-section utilizes the data on housing values in the preceding section to compute for value appreciation of housing units in manufactured home parks. The second sub-section accounts for the differences, if any, in value appreciation of housing units in manufactured home parks. The third sub-section utilizes the data on housing values in the preceding section to compute for value appreciation of housing units abutting manufactured home parks. It also examines if there are differences in value appreciation between housing units abutting member-owned and investor-owned manufactured home parks.

SUB-SECTION 1: VALUE APPRECIATION OF HOUSING UNITS IN MANUFACTURED HOME PARKS

This sub-section utilizes the data on housing values in the preceding section to compute for value appreciation of housing units in manufactured home parks. The Conceptual Framework section discussed four measures of value appreciation. In the course of analyzing the data, the study came up with two additional measures. Measure 5 compares the 2004-2005 selling price to that of the most recent selling price prior to 2004-2005. Similarly, Measure 6 compares the estimated current selling price (based on adjusted 2005 assessed value) to that of the most recent selling price prior to 2005. Data analysis is presented for each of these measures.

Measure 1

Measure 1 looks at the percentage change between the selling price for the sale that occurred closest to the time the home was originally purchased (base value) and the actual selling price (current value) of housing units that were sold between 2004 and 2005. The original plan for Measure 1 was to compare the 2004 or 2005 selling price to the original purchase price; however, the data source does not keep

records of original purchase prices. Table 34 shows that manufactured homes appreciate in value.

Table 34: Value Appreciation (2004-2005 Selling Price vs. Earliest Selling Price) by Park Ownership Type

VALUE APPRECIATION: 2004-2005 SELLING PRICE VS. EARLIEST SELLING PRICE	ANNUALIZED RATE OF CHANGE (in percent)		
	Homes in Member-owned Parks	Homes in Investor-owned Parks	Total
Mean	8.9	7.6	8.0
Median	7.5	6.2	6.6
Range	31.7	35.7	35.7
Standard Deviation	7.8	7.8	7.8
Number of Cases	54	109	163

F = 1.10 (p = .30)

Using Measure 1, the prices of homes sold in 2004-2005 increased by an annualized average of 8 percent; the median rate of increase is 6.6 percent. The rate is slightly higher in homes located in member-owned parks, compared to those in investor-owned parks. However, the difference is not statistically significant, as shown by an Anova F ratio of 1.10 (p = .30). This is due to the fact that there is only a slight difference in value appreciation between homes in member-owned and investor-owned parks, in relation to the difference in value appreciation within each type of park ownership.

Measure 2

Measure 2 examines the percentage change between the selling price for the sale that occurred closest to the time the home was originally purchased (base value) and the estimated current selling price (current value) of all housing units, regardless of whether or not they were sold between 2004 and 2005; the estimated current selling price is based on the property's current assessed value, adjusted using the 2005 median equalization ratio for manufactured homes in parks. The original plan for Measure 2 was to compare the 2004 or 2005 selling price to the original purchase price; however, the data source does not keep records of original purchase prices. Consistent with Measure 1, Table 35 shows that manufactured homes increase in value when comparing estimated 2005 prices to their earliest known price.

Table 35: Value Appreciation (Adjusted 2005 Assessed Value vs. Earliest Selling Price) by Park Ownership Type

VALUE APPRECIATION: ADJUSTED 2005 ASSESSED VALUE VS. EARLIEST SELLING PRICE	ANNUALIZED RATE OF CHANGE (in percent)		
	Homes in Member-owned Parks	Homes in Investor-owned Parks	Total
Mean	10.2	9.2	9.5
Median	9.3	7.7	8.2
Range	52.8	58.4	65.7
Standard Deviation	8.8	9.2	9.1
Number of Cases	359	736	1,095

F = 2.62 (p = .11)

The average annual price increase is 9.5 percent; the median rate is 8.2 percent. The table also shows that homes located in member-owned parks have a slightly higher value appreciation rate, compared to those in investor-owned parks. However, the difference is not statistically significant, as shown by an Anova F ratio of 2.62 (p = .11). Again, this is because there is only a slight difference in value appreciation between homes in member-owned and investor-owned parks, relative to the difference in value appreciation within each type of park ownership.

Measure 3

Measure 3 looks at the percentage change between the estimated 2000 selling price (base value) and the actual selling price (current value) of housing units that were sold between 2004 and 2005; the estimated 2000 selling price is based on the property's 2000 assessed value, adjusted using the 2005 median equalization ratio for manufactured homes in parks. Table 36 further confirms the findings of Measures 1 and 2. The annual average appreciation rate is 13.8 percent (median equals 12.8 percent) when comparing the prices of homes sold in 2004-2005 to their adjusted assessed values in 2000. The rate of appreciation of homes in member-owned parks is higher than those in investor-owned parks. An Anova F ratio equal to 3.73 ($p = .05$) indicates a significant difference in value appreciation rate between the two park ownership types.

Table 36: Value Appreciation (2004-2005 Selling Price vs. Adjusted 2000 Assessed Value) by Park Ownership Type

VALUE APPRECIATION: 2004-2005 SELLING PRICE VS. ADJUSTED 2000 ASSESSED VALUE	ANNUALIZED RATE OF CHANGE (in percent)		
	Homes in Member-owned Parks	Homes in Investor- owned Parks	Total
Mean	16.1	12.8	13.8
Median	17.0	11.4	12.8
Range	52.6	65.0	65.0
Standard Deviation	10.1	11.5	11.2
Number of Cases	59	128	187

F = 3.73 (p = .05)

Measure 4

Measure 4 considers the percentage change between the estimated 2000 selling price (base value) and the estimated current selling price (current value) of all housing units, regardless of whether or not they were sold between 2004 and the present; the estimated 2000 and current selling prices are based on the property's 2000 and current assessed values, respectively, adjusted using the 2000 and 2005 median equalization ratios for manufactured homes in parks. Table 37 again confirms value appreciation of manufactured homes. There is a slight difference in the value appreciation rate between homes in member-owned and investor-owned parks. In fact, an Anova F ratio

of 37.10 ($p < .01$) indicates a significant difference in value appreciation rates. This is due to the amount of dispersion within each park ownership type such that it does not offset the slight difference in value appreciation rate between the two park ownership types.

Table 37: Value Appreciation (Adjusted 2005 Assessed Value vs. Adjusted 2000 Assessed Value) by Park Ownership Type

VALUE APPRECIATION: ADJUSTED 2005 ASSESSED VALUE VS. ADJUSTED 2000 ASSESSED VALUE	ANNUALIZED RATE OF CHANGE (in percent)		
	Homes in Member-owned Parks	Homes in Investor-owned Parks	Total
Mean	16.5	14.4	15.1
Median	16.5	13.4	14.5
Range	42.0	36.1	46.5
Standard Deviation	5.1	6.1	5.9
Number of Cases	398	825	1,223

$F = 37.10$ ($p < .01$)

Measure 5

Measure 5 looks at the percentage change between the most recent selling price prior to 2004-2005 (base value) and the actual selling price (current value) of housing units that were sold between 2004 and 2005. Table 38 once again supports the notion that manufactured homes appreciate in value. The annual average appreciation rate is

10.6 percent when comparing the prices of homes sold in 2004-2005 to their most recent previous selling prices; the median appreciation rate is 10.1 percent. The appreciation rate of homes in member-owned parks is slightly higher than those in investor-owned parks. The difference is not significant as shown by an Anova F ratio of 2.03 ($p = .16$) because the dispersion within each park ownership type is large enough to offset the difference between them.

Table 38: Value Appreciation (2004-2005 Selling Price vs. Most Recent Selling Price) by Park Ownership Type

VALUE APPRECIATION: 2004-2005 SELLING PRICE VS. MOST RECENT SELLING PRICE	ANNUALIZED RATE OF CHANGE (in percent)		
	Homes in Member-owned Parks	Homes in Investor-owned Parks	Total
Mean	12.1	9.9	10.6
Median	11.2	9.8	10.1
Range	45.7	35.2	49.0
Standard Deviation	10.1	7.8	8.6
Number of Cases	48	100	148

F = 2.03 ($p = .16$)

Measure 6

Measure 6 looks at the percentage change between the most recent selling price prior to 2004-2005 (base value) and the estimated

current selling price (current value) of all housing units, regardless of whether or not they were sold between 2004 and the present; the estimated current selling prices are based on the property's current assessed value, adjusted using the same equalization procedure mentioned earlier. Table 39 confirms the fact that manufactured homes appreciate in value. Using Measure 6, the annual average appreciation rate is 11.5 percent; the median rate is 0.4 percent. As should already be expected, homes in member-owned parks appreciate slightly higher than those in investor-owned parks, although the difference is not statistically significant; the Anova F ratio is 3.15 ($p = .08$). Even if there seems to be a significant difference in the value appreciation rate between homes in member-owned and investor-owned parks, this is offset by a significant difference in the value appreciation rate within each type of park ownership.

Table 39: Value Appreciation (Adjusted 2005 Assessed Value vs. Most Recent Selling Price) by Park Ownership Type

VALUE APPRECIATION: ADJUSTED 2005 ASSESSED VALUE VS. MOST RECENT SELLING PRICE	ANNUALIZED RATE OF CHANGE (in percent)		
	Homes in Member-owned Parks	Homes in Investor-owned Parks	Total
Mean	12.4	11.0	11.5
Median	11.8	10.1	10.4
Range	37.1	49.5	49.5
Standard Deviation	8.4	9.3	9.0
Number of Cases	195	345	540

F = 3.15 (p = .08)

SUB-SECTION SUMMARY

Table 40 summarizes the value appreciation rates for homes in member-owned and investor-owned parks according to the type of measure used.

Table 40: Value Appreciation, Annualized Median Rate of Change and Statistics by Park Ownership Type

VALUE APPRECIATION MEASURE	ANNUALIZED MEDIAN RATE OF CHANGE (in percent)		STATISTICS
	Homes in Member-owned Parks	Homes in Investor-owned Parks	
Measure 1: 2004-2005 Selling Price vs. Earliest Selling Price	7.5	6.2	F = 1.10 (p = .30)
Measure 2: Adjusted 2005 Assessed Value vs. Earliest Selling Price	9.3	7.7	F = 2.62 (p = .11)
Measure 3: 2004-2005 Selling Price vs. Adjusted 2000 Assessed Value	17.0	11.4	F = 3.73 (p < .05)
Measure 4: Adjusted 2005 Assessed Value vs. Adjusted 2000 Assessed Value	16.5	13.4	F = 37.10 (p < .01)
Measure 5: 2004-2005 Sales vs. Most Recent Selling Price	11.2	9.8	F = 2.03 (p = .16)
Measure 6: Adjusted 2005 Assessed Value vs. Most Recent Selling Price	11.8	10.1	F = 3.15 (p = .08)

The table above shows that, regardless of the measure used, manufactured home parks appreciate in value. Furthermore, the appreciation rate for homes in member-owned parks is slightly higher

than those in investor-owned parks, regardless of the measure used. However, the difference in appreciation rates is statistically significant only when Measures 3 and 4 are used to value appreciation. It is important to note that Measures 3 and 4 compare current (actual and estimated) and base selling prices over the last four to five years. On the other hand, Measures 1, 2, 5 and 6 compare current (actual and estimated) and base selling prices over different and longer time periods. Table 41 shows the differences in time periods covered by the six measures of value appreciation.

Table 41: Measure of Value Appreciation by Difference Between Current and Base Periods

MEASURE OF VALUE APPRECIATION	DIFFERENCE BETWEEN CURRENT AND BASE PERIODS				
	Mean	Median	Standard Deviation	Range	Number of Cases
Measure 1: 2004-2005 Selling Price vs. Earliest Selling Price	8.1	9	5.7	19	218
Measure 2: Adjusted 2005 Assessed Value vs. Earliest Selling Price	10.8	11	5.3	24	1,296
Measure 3: 2004-2005 Selling Price vs. Adjusted 2000 Assessed Value	4.4	4	0.5	1	218
Measure 4: Adjusted 2005 Assessed Value vs. Adjusted 2000 Assessed Value	5.0	5	0.0	0	1,365
Measure 5: 2004-2005 Sales vs. Most Recent Selling Price	6.0	5	4.6	19	172
Measure 6: Adjusted 2005 Assessed Value vs. Most Recent Selling Price	8.9	8	4.7	22	582

Measures 3 and 4 are based on the difference between current and base prices over almost the same (if not the same) 4- to 5-year time

period, as shown by standard deviations that are very near or equal to zero years. On the other hand, Measures 1 and 2 compute value appreciation over longer time periods (i.e., average of 8.1 years and 10.8 years, respectively). Moreover, Measures 1 and 2 are based on different current and base periods, as shown by a standard deviation of 5.7 and 5.3 years, respectively. Measures 5 and 6 present a similar situation to that of Measures 1 and 2, wherein the computation of value appreciation is over longer and different time periods. Since Measures 1, 2, 5 and 6 refer to longer and different time periods, the selling prices they use in computing for value appreciation are subject to varying market conditions. This produces a lot of variation in value appreciation, regardless of whether or not a home is in a member-owned or investor-owned park. Because of this, even if Measures 1, 2, 5 and 6 show differences in the value appreciation rate between homes in member-owned and investor-owned parks, this is offset by a significant difference in the value appreciation rate within each type of park ownership.

SUB-SECTION 2: FACTORS AFFECTING VALUE APPRECIATION OF HOUSING UNITS IN MANUFACTURED HOME PARKS

The previous sub-section shows that, if home prices are examined over the same period of time (i.e., 2004-2005 and 2000), there is a

significant difference in housing value appreciation rates between homes in member-owned and investor-owned parks. However, it must be noted that this difference is observed without controlling for the other variables under consideration in the study. It is possible that other variables account for the difference in value appreciation rate, and that these variables just happen to be associated with type of park ownership (i.e., member-owned vs. investor-owned); this is referred to in regression analysis as collinearity.

The second sub-section of the Data Analysis section checks for possible collinearity and, in the process, identifies variables that account for real differences, if any, in value appreciation of housing units in manufactured home parks. This is done through regression by first entering all independent and intervening variables in the righthand side of the regression equation; the dependent variable is entered in the lefthand side of the equation. The regression is ran to determine goodness of fit (i.e., value of the adjusted R^2). If the equation is shown to account for at least 10 percent of the variation in the dependent variable (i.e., value of adjusted R^2 is at least 0.10), then stepwise regression is undertaken to trim down the number of variables to only those that are significantly related to the dependent variable.

The study's independent and intervening variables that are entered in the righthand side of the regression equation are the following:

- Park ownership type (dummy variable)
- Current monthly rent amount
- Annual percentage rent increase
- Age of housing unit
- Number of rooms
- Finished area
- Park location index
- Park layout index

Access to NHHFA and NHCLF loans is not included because it just replicates the dummy variable, park ownership type, i.e., housing units in member-owned parks access NHHFA and NHCLF loans, while housing units in investor-owned parks do not have access.

The study's dependent variable is value appreciation as measured by the annualized percentage change in the value of a housing unit over two time periods. Since the study has six different measures of value appreciation, then there has to be six regression equations. The six equations have the same righthand side, but with different operationally defined lefthand side.

Regression 1 (Based on Measure 1)

Regression 1 shows the relationship, if any, between value appreciation and the independent and intervening variables. Value appreciation is operationally defined here by Measure 1, i.e., the annualized percentage difference between the selling price of homes sold in 2004-2005 and their earliest recorded selling price. Table 42 presents the result of the regression.

Table 42: Model Fit of Regression 1

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.227	.051	.002	7.76381

An adjusted R^2 value of .002 indicates that only 0.2 percent of variations in value appreciation can be accounted for by the independent and intervening variables. In other words, some other set of variables (other than the study's variables) accounts for differences in the value appreciation of homes sold in 2004-2005 using Measure 1. This is confirmed by Table 43. Based on the significance level of each of the independent and intervening variables when controlled against each other (refer to the last column of the table),

none of the variables are significantly related to the dependent variable.

Table 43: Coefficients of Regression 1

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.789	10.328		1.141	.255
	Types of MHP (Coop vs Non-Coop)	-1.953	2.042	-.119	-.957	.340
	Current Rent	-.033	.038	-.107	-.876	.382
	Average Annual Rent Increase	1.049	.741	.182	1.414	.159
	Age of Housing Unit	-.114	.087	-.126	-1.309	.192
	Finished Area (sq.ft.)	-.002	.004	-.080	-.660	.510
	Number of Rooms	1.540	1.145	.148	1.345	.181
	Location Index (Index of Driving Distances)	-12.484	9.616	-.170	-1.298	.196
	Park Features Index	7.844	4.705	.250	1.667	.098

Regression 2 (Based on Measure 2)

Regression 2 shows the relationship, if any, between value appreciation and the independent and intervening variables. Value appreciation is operationally defined here by Measure 2, i.e., the annualized percentage difference between the estimated current

selling price of homes (using adjusted 2005 assessed values) and their earliest recorded selling price. Table 44 presents the result of the regression.

Table 44: Model Fit of Regression 2

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.169	.029	.021	8.95286

An adjusted R^2 value of .021 indicates that only 2.1 percent of variations in value appreciation can be accounted for by the independent and intervening variables. Table 45 shows that only the currently monthly rent amount and the age of the housing unit, when each controlled against the other variables, are significantly related to value appreciation. It does not make sense to isolate the effects of each of these two variables on the dependent variable because the adjusted R^2 value is too small, to begin with.

Table 45: Coefficients of Regression 2

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	27.170	4.419		6.149	.000
	Types of MHP (Coop vs Non-Coop)	-.730	.894	-.038	-.816	.415
	Current Rent	-.050	.016	-.143	-3.193	.001
	Average Annual Rent Increase	.599	.286	.095	2.091	.037
	Age of Housing Unit	-.105	.036	-.107	-2.949	.003
	Finished Area (sq.ft.)	-.001	.002	-.019	-.422	.673
	Number of Rooms	-.462	.501	-.037	-.922	.357
	Location Index (Index of Driving Distances)	-4.129	3.923	-.048	-1.052	.293
	Park Features Index	2.151	1.952	.058	1.102	.271

Regression 3 (Based on Measure 3)

Regression 3 shows the relationship, if any, between the independent and intervening variables and value appreciation as operationally defined by Measure 3, i.e., the annualized percentage difference between the selling price of homes sold in 2004-2005 and their estimated selling price in 2000 (using adjusted 2000 assessed values). Table 46 presents the result of the regression.

Table 46: Model Fit of Regression 3

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.412	.170	.133	10.39283

An adjusted R^2 value of .133 indicates that 13.3 percent of variations in value appreciation can be accounted for by the independent and intervening variables. For a multifaceted and complex phenomenon such as value appreciation, this study deems an adjusted R^2 value of .133 as strong enough to merit further analysis. This is especially true, given that macro-level factors are excluded from the study.

Table 47 shows that the age of the housing unit, location index, and park layout index are significantly related to value appreciation as defined by Measure 3. Whether or not a home is located in a member-owned park does not significantly affect its annual appreciation rate.

Table 47: Coefficients of Regression 3

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.244	13.479		-.166	.868
	Types of MHP (Coop vs Non-Coop)	-.948	2.567	-.040	-.369	.712
	Current Rent	-.020	.049	-.043	-.397	.692
	Average Annual Rent Increase	1.452	.902	.170	1.610	.109
	Age of Housing Unit	.358	.115	.270	3.119	.002
	Finished Area (sq.ft.)	.001	.005	.032	.311	.756
	Number of Rooms	1.684	1.453	.108	1.159	.248
	Location Index (Index of Driving Distances)	-28.596	11.829	-.276	-2.417	.017
	Park Features Index	16.100	5.683	.347	2.833	.005

In order to isolate the effect of each of these three variables on the dependent variable, stepwise regression is undertaken. The results of the stepwise regression are shown in Table 48.

Table 48: Coefficients of Regression 3 (Stepwise)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
3	(Constant)	7.644	5.377		1.422	.157
	Location Index (Index of Driving Distances)	-21.329	7.357	-.206	-2.899	.004
	Park Features Index	11.996	3.298	.259	3.637	.000
	Age of Housing Unit	.314	.098	.236	3.203	.002

The following are descriptions of the effect of each of the significant variables on value appreciation:

- Controlling for other variables, if the location index decreases by 0.1 in a range of 0 to 1, there will be a 2.1-percentage point increase in value appreciation. In other words, if a park is 0.1 index point closer to important establishments and/or major roads, the annual appreciation rate increases by 2.1 percentage points.
- Controlling for other variables, if the park layout index increases by 0.1 in a range of 0 to 1, there will be a 1.2-percentage point increase in value appreciation. In other words, if a park layout is improved by 0.1 index points, the annual appreciation rate increases by 1.2 percentage points.
- Controlling for other variables, a one-year difference in the age of the housing unit increases the annual appreciation rate by 0.3 percentage points.

Regression 4 (Based on Measure 4)

Regression 4 shows the relationship, if any, between the independent and intervening variables and value appreciation as operationally defined by Measure 4, i.e., the annualized percentage difference between the estimated selling price of homes in 2005 (using adjusted 2005 assessed values) and their estimated selling price in 2000 (using adjusted 2000 assessed values). Table 49 presents the result of the regression.

Table 49: Model Fit of Regression 4

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.446	.199	.194	5.25803

An adjusted R^2 value of .194 indicates that 19.4 percent of variations in value appreciation can be accounted for by the independent and intervening variables. Table 50 shows that the average annual rent increase, the age of the housing unit, location index, and park layout index are significantly related to value appreciation as defined by Measure 4. Again, the type of park ownership does not significantly affect its annual appreciation rate.

Table 50: Coefficients of Regression 4

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.449	2.543		3.322	.001
	Types of MHP (Coop vs Non-Coop)	.432	.500	.035	.864	.388
	Current Rent	.013	.008	.059	1.522	.128
	Average Annual Rent Increase	1.331	.157	.336	8.462	.000
	Age of Housing Unit	.127	.023	.182	5.460	.000
	Finished Area (sq.ft.)	-.002	.001	-.067	-1.694	.090
	Number of Rooms	-.495	.280	-.060	-1.765	.078
	Location Index (Index of Driving Distances)	-20.454	2.233	-.372	-9.158	.000
	Park Features Index	9.828	1.057	.425	9.294	.000

In order to isolate the effect of each of these three variables on the dependent variable, stepwise regression is undertaken. Table 51 shows the results of the stepwise regression.

Table 51: Coefficients of Regression 4 (Stepwise)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
5	(Constant)	9.888	1.487		6.648	.000
	Location Index (Index of Driving Distances)	-18.940	1.735	-.345	-10.914	.000
	Age of Housing Unit	.126	.023	.181	5.563	.000
	Park Features Index	10.392	.824	.449	12.613	.000
	Average Annual Rent Increase	1.358	.146	.342	9.272	.000
	Finished Area (sq.ft.)	-.003	.001	-.106	-3.204	.001

The following are descriptions of the effect of each of the significant variables on value appreciation:

- Controlling for other variables, if the location index decreases by 0.1 in a range of 0 to 1, there will be a 1.9-percentage point increase in value appreciation. In other words, if a park is 0.1 index point closer to important establishments and/or major roads, the annual appreciation rate increases by 1.9 percentage points.
- Controlling for other variables, a one-year increase in the age of the housing unit increases the annual appreciation rate by 0.1 percentage points. This should not be taken to mean that older homes are more expensive. A lot of the homes were purchased a long time ago at prices much lower than more recently bought ones.

- Controlling for other variables, if the park layout index increases by 0.1 in a range of 0 to 1, there will be a 1.0-percentage point increase in value appreciation. In other words, if a park layout is improved by 0.1 index points, the annual appreciation rate increases by 1.0 percentage point.
- Controlling for other variables, a one percentage point increase in the annual rent rate increases the annual appreciation rate by 1.4 percentage points.

Regression 5 (Based on Measure 5)

Regression 5 shows the relationship, if any, between value appreciation and the independent and intervening variables. Value appreciation is operationally defined here by Measure 5, i.e., the annualized percentage difference between the selling price of homes sold in 2004-2005 and their most recent selling price prior to the 2004-2005 sale. Table 52 presents the result of the regression.

Table 52: Model Fit of Regression 5

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.207	.043	-.012	8.68244

An adjusted R^2 value of $-.012$ indicates that none of variations in value appreciation can be accounted for by the independent and intervening

variables. In other words, some other set of variables (other than the study's variables) accounts for differences in the value appreciation of homes sold in 2004-2005 using Measure 5. This is confirmed by Table 53. Based on the significance level of each of the independent and intervening variables when controlled against each other (refer to the last column of the table), none of the variables are significantly related to the dependent variable.

Table 53: Coefficients of Regression 5

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.326	12.127		.522	.603
	Types of MHP (Coop vs Non-Coop)	.296	2.384	.016	.124	.901
	Current Rent	-.011	.044	-.032	-.251	.802
	Average Annual Rent Increase	.389	.873	.059	.445	.657
	Age of Housing Unit	.012	.101	.012	.122	.903
	Finished Area (sq.ft.)	.005	.004	.129	1.074	.285
	Number of Rooms	.419	1.364	.033	.307	.759
	Location Index (Index of Driving Distances)	-8.609	11.037	-.106	-.780	.437
	Park Features Index	4.075	5.518	.113	.738	.461

Regression 6 (Based on Measure 6)

Regression 6 shows the relationship, if any, between value appreciation and the independent and intervening variables. Value appreciation is operationally defined here by Measure 2, i.e., the annualized percentage difference between the estimated current selling price of homes (using adjusted 2005 assessed values) and their most recent selling price. Table 54 presents the result of the regression.

Table 54: Model Fit of Regression 6

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.168	.028	.014	8.92815

An adjusted R^2 value of .014 indicates that only 1.4 percent of variations in value appreciation can be accounted for by the independent and intervening variables. Table 55 shows that only the age of the housing unit, when each controlled against the other variables, is significantly related to value appreciation. It does not make sense to isolate the effects of each of this variable on the dependent variable because the adjusted R^2 value is too small, to begin with.

Table 55 : Coefficients of Regression 6

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	26.581	6.514		4.081	.000
	Types of MHP (Coop vs Non-Coop)	-.485	1.265	-.026	-.383	.702
	Current Rent	-.034	.024	-.097	-1.427	.154
	Average Annual Rent Increase	.612	.402	.100	1.524	.128
	Age of Housing Unit	-.115	.057	-.105	-2.011	.045
	Finished Area (sq.ft.)	-.002	.002	-.056	-.927	.354
	Number of Rooms	-.803	.750	-.060	-1.070	.285
	Location Index (Index of Driving Distances)	-6.255	5.661	-.075	-1.105	.270
	Park Features Index	4.932	2.860	.131	1.724	.085

SUB-SECTION SUMMARY

In sum, none of the six regression equations show any significant relationship between the type of park ownership and value appreciation. Only two of the six regression equations (Regressions 3 and 4) generated adjusted R^2 values that are strong enough to merit further statistical analysis. These two regressions reveal that the “usual” housing market variables have a significant effect on value appreciation. These are the location of the park, the park’s layout, the

age of the housing unit, and, for one of the regressions, the annual rent increase rate and the finished area.

SUB-SECTION 3: VALUE APPRECIATION OF HOUSING UNITS ABUTTING MANUFACTURED HOME PARKS

The third sub-section utilizes the data on housing values in the Data Analysis section to compute for value appreciation of housing units abutting manufactured home parks. Similar to Sub-Section 1, data analysis was planned to be presented for each of six measures of value appreciation. However it does not make sense to compute some of the measures because of limited cases; this will be explained in the ensuing discussion.

Measure 1

Measure 1 compares the prices of abutting homes sold in 2004-2005 to their earliest recorded selling prices. It does not make sense to analyze the statistical computations of the difference between the two prices because, of the 15 abutting housing units that were sold in 2004-2005, nine never were sold. Nonetheless, the computations are presented in Table 56, just to show that, on average, the six valid cases experienced price appreciation.

Table 56: Value Appreciation (2004-2005 Selling Price vs. Earliest Selling Price) by Ownership Type of Abutting Park

VALUE APPRECIATION: 2004-2005 SELLING PRICE VS. EARLIEST SELLING PRICE	ANNUALIZED RATE OF CHANGE (in percent)		
	Homes Abutting Member-owned Parks	Homes Abutting Investor- owned Parks	Total
Mean	36.7	-6.8	15.0
Median	14.1	4.1	6.6
Range	78.2	32.8	115.8
Standard Deviation	43.8	18.9	38.4
Number of Cases	3	3	6

Measure 2

Measure 2 examines the percentage change between the selling price for the sale that occurred closest to the time the home was originally purchased (base value) and the estimated current selling price (current value) of all housing units, regardless of whether or not they were sold between 2004 and 2005. Table 57 shows that homes abutting manufactured home parks increase in value when comparing estimated 2005 prices to their earliest known price. The mean (and median) annual price increase is 14.1 percent. The table also shows that homes abutting member-owned parks have a slightly higher value appreciation rate, compared to those in investor-owned parks.

However, the difference is not statistically significant, as shown by an Anova F ratio of 0.08 ($p = .78$).

Table 57: Value Appreciation (Adjusted 2005 Assessed Value vs. Earliest Selling Price) by Ownership Type of Abutting Park

VALUE APPRECIATION: ADJUSTED 2005 ASSESSED VALUE VS. EARLIEST SELLING PRICE	ANNUALIZED RATE OF CHANGE (in percent)		
	Homes Abutting Member-owned Parks	Homes Abutting Investor-owned Parks	Total
Mean	14.4	13.9	14.1
Median	15.0	13.9	14.1
Range	48.2	21.8	48.2
Standard Deviation	9.7	5.4	7.4
Number of Cases	30	47	77

$F = 0.08$ ($p = .78$)

Measure 3

Measure 3 looks at the percentage change between the estimated 2000 selling price (base value) and the actual selling price (current value) of abutting housing units that were sold between 2004 and 2005. Table 58 confirms the findings of Measure 2. The annual average appreciation rate is 16.0 percent (median equals 14.6 percent) when comparing the prices of homes sold in 2004-2005 to their adjusted assessed values in 2000. The rate of appreciation of

homes abutting member-owned parks is higher than those in investor-owned parks. However, the difference is not statistically significant, as shown by an Anova F ratio of 1.19 ($p = .31$). This is because there is only a slight difference in value appreciation between homes abutting member-owned and investor-owned parks, relative to the difference in value appreciation within each type of home abutting member-owned or investor-owned parks.

Table 58: Value Appreciation (2004-2005 Selling Price vs. Adjusted 2000 Assessed Value) by Ownership Type of Abutting Park

VALUE APPRECIATION: 2004-2005 SELLING PRICE VS. ADJUSTED 2000 ASSESSED VALUE	ANNUALIZED RATE OF CHANGE (in percent)		
	Homes Abutting Member-owned Parks	Homes Abutting Investor- owned Parks	Total
Mean	18.2	13.8	16.0
Median	17.6	14.2	14.6
Range	20.6	4.0	20.6
Standard Deviation	8.9	1.7	6.5
Number of Cases	5	5	10

F = 1.19 ($p = .31$)

Measure 4

Measure 4 considers the percentage change between the estimated 2000 selling price (base value) and the estimated current selling price

(current value) of all abutting housing units, regardless of whether or not they were sold between 2004 and the present. Table 59 again confirms value appreciation of homes abutting parks. The average annual appreciation rate 18.6 percent, and the median rate is 17.9 percent. There is almost no difference in the value appreciation rate between homes abutting member-owned and investor-owned parks; this is confirmed by an Anova F ratio of 0.28 ($p = .60$) indicates a significant difference in value appreciation rates.

Table 59: Value Appreciation (Adjusted 2005 Assessed Value vs. Adjusted 2000 Assessed Value) by Ownership Type of Abutting Park

VALUE APPRECIATION: ADJUSTED 2005 ASSESSED VALUE VS. ADJUSTED 2000 ASSESSED VALUE	ANNUALIZED RATE OF CHANGE (in percent)		
	Homes Abutting Member-owned Parks	Homes Abutting Investor- owned Parks	Total
Mean	18.8	18.4	18.6
Median	18.5	17.3	17.9
Range	29.1	24.8	29.1
Standard Deviation	5.9	5.1	5.4
Number of Cases	76	115	191

F = 0.28 ($p = .60$)

Measure 5

Measure 5 looks at the percentage change between the most recent selling price prior to 2004-2005 (base value) and the actual selling price (current value) of abutting housing units that were sold between 2004 and 2005. Similar to Measure 1, it does not make sense to analyze the statistical computations of the difference between the two prices because, of the 15 abutting housing units that were sold in 2004-2005, nine were never sold. The computations are still presented in Table 60, just to show that, on average, the six valid cases experienced price appreciation.

Table 60: Value Appreciation (2004-2005 Selling Price vs. Most Recent Selling Price) by Ownership Type of Abutting Park

VALUE APPRECIATION: 2004-2005 SELLING PRICE VS. MOST RECENT SELLING PRICE	ANNUALIZED RATE OF CHANGE (in percent)		
	Homes Abutting Member-owned Parks	Homes Abutting Investor- owned Parks	Total
Mean	35.0	-6.0	14.5
Median	9.0	4.1	7.7
Range	78.3	35.1	115.8
Standard Deviation	45.2	19.6	38.4
Number of Cases	3	3	6

Measure 6

Measure 6 looks at the percentage change between the most recent selling price prior to 2004-2005 (base value) and the estimated current selling price (current value) of all abutting housing units, regardless of whether or not they were sold between 2004 and 2005.

Table 61 again confirms the fact that homes abutting parks appreciate in value. The annual average appreciation rate is 14.4 percent; the median rate is 11.9 percent. What is not expected is the finding that, using Measure 6, homes abutting investor-owned parks appreciate higher than those in member-owned parks, although the difference is not statistically significant; the Anova F ratio is 1.62 ($p = .21$).

Table 61: Value Appreciation (Adjusted 2005 Assessed Value vs. Most Recent Selling Price) by Ownership Type of Abutting Park

VALUE APPRECIATION: ADJUSTED 2005 ASSESSED VALUE VS. MOST RECENT SELLING PRICE	ANNUALIZED RATE OF CHANGE (in percent)		
	Homes Abutting Member-owned Parks	Homes Abutting Investor-owned Parks	Total
Mean	11.9	16.1	14.4
Median	10.5	12.3	11.9
Range	15.4	39.1	41.2
Standard Deviation	4.4	11.2	9.2
Number of Cases	13	19	32

F = 1.62 ($p = .21$)

SUB-SECTION SUMMARY

Regardless of the measure used, homes abutting manufactured home parks appreciate in value. For the most part, the appreciation rate for homes abutting member-owned parks is slightly higher than those in investor-owned parks. However, the difference in appreciation rates is statistically insignificant.

X. DISCUSSION OF FINDINGS

This section discusses the findings of the study in relation to the Research Question: Do households living in and around cooperative manufactured home parks in New Hampshire experience higher housing property value appreciation, compared to those in and around investor-owned parks?

The response to the Research Question is discussed in two sub-sections. The first sub-section addresses the Main Hypothesis, while the second sub-section responds to the study's Exploratory Hypothesis.

SUB-SECTION 1: FINDINGS RELATED TO THE MAIN HYPOTHESIS

The study's Main Hypothesis asserts that appreciation of property values is greater for housing units in member-owned manufactured home parks, compared to those in investor-owned parks, holding all intervening variables constant. The results of the study were not able to prove the Main Hypothesis. Controlling for all other variables, the type of park a home is located in (i.e., member-owned vs. investor-owned) does not have a significant effect on the price appreciation of manufactured homes. This is true for manufactured homes that were

sold in 2004-2005. This is also true for all manufactured homes whose current prices were estimated from their 2005 adjusted assessed value.

The above notwithstanding, it is important to note that manufactured homes located in parks, in general, do appreciate in value when comparing their actual 2004-2005 or estimated 2005 selling prices to actual or estimated previous selling prices.

Variables that significantly account for value appreciation of manufactured homes are those that are typically associated with the real estate market. These include the following:

- the location of the park (operationally defined as driving distances to major establishments and highways),
- the layout of the park (operationally defined as the availability of yard and parking space, and the presence of street signs and streetlights in front of homes),
- the age of the housing unit, and
- to some extent (i.e., depending on the value appreciation measure used), the rate of annual rent increase and the finished area.

Sub-Hypothesis 1.A contends that appreciation of property values of housing units in member-owned manufactured home parks is greater

because the current rent amounts are lower, holding all other variables constant. The study shows that, on average, homes in member-owned parks have lower monthly rent amounts compared to those in investor-owned parks. However, the variable does not have any significant effect on value appreciation.

Sub-Hypothesis 2.B states that appreciation of property values of housing units in member-owned manufactured home parks is greater because the annual percentage rent increase is lower, holding all other variables constant. The study finds the annual percentage rent increase in member-owned parks to, indeed, be lower than in investor-owned parks. As discussed earlier, the study also finds out that the variable has a significant effect on value appreciation, holding all other variables constant. However, this is true regardless of the type of manufactured home park.

Sub-Hypothesis 1.C contends that appreciation of property values of housing units in member-owned manufactured home parks is greater because residents have access to NHHFA's and/or NHCLF's Home Loans, holding all other variables constant. The study does not show a significant relationship between access to these loans and value appreciation. The study belatedly realized that access to

NHHFA/NHCLF mortgage is a redundant variable because access to these loans is limited to residents of member-owned parks. In fact, all of the 54 NHHFA/NHCLF loans in the study were accessed by residents of member-owned parks. Since the type of park ownership does not have a significant effect on value appreciation, then it goes without saying that access to NHHFA/NHCLF loans also has the same (non)effect on value appreciation.

It is important to reiterate, at this point, that the above findings are true for manufactured homes in Rochester NH that were sold in 2004-2005. Similarly, it is true for all manufactured homes in the same city, based on current prices that were estimated from their 2005 adjusted assessed values. Is it possible that the absence of a significant relationship between the type of park ownership and value appreciation has something to do with the period under consideration? The housing market in 2004-2005 has been characterized as inflated. According to the Chief Economist of the Office of Federal Housing Enterprise Oversight (OFHEO, 2006; para. 2), “[d]espite recent indications that a slowdown may be forthcoming, house price appreciation during 2005 continued to hover at near-record levels”. Under conditions when the demand for housing is very high, are homebuyers willing to pay a higher price for a manufactured home,

regardless of the type of park ownership, so long as it is in a park that has a good location and park layout? In other words, do homebuyers overlook the potential benefits of cooperative park ownership when the housing market is very competitive? Conversely, under “normal” conditions when the demand for housing is not high enough, is a homebuyer willing to pay a higher price for a home in a member-owned park compared to one in an investor-owned park, other things equal?

This could be examined by looking at price appreciation in at least two time periods, i.e., one time period when the housing market is deemed to be “red-hot”, and another time period when it is not. Table 62 shows the annualized housing price appreciation rates in the past eight years.

Table 62: Eight-Year Comparative Annualized Price Appreciation

YEAR (period ending 31 Dec.)	COMPARATIVE ANNUALIZED PRICE APPRECIATION (in percent)		
	Rockingham-Rochester County MSA (for 2004- 2005) Portsmouth-Rochester MSA (for 1998-2003)	New Hampshire	U.S.
2005	8.97 (137 th out of 275 MSAs)	9.77 (26 th among 50 states)	12.95
2004	10.06 (97 th out of 265 MSAs)	10.60 (21 st among 50 states)	11.17
2003	10.37 (59 th out of 220 MSAs)	10.21 (13 th out of 50 states)	7.97
2002	10.28 (38 th out of 185 MSAs)	11.02 (5 th among 50 states)	6.89
2001	8.93 (49 th out of 185 MSAs)	10.24 (5 th among 50 states)	6.92
2000	13.5 (28 th out of 180 MSAs)	15.1 (1 st among 50 states)	8.1
1999	Not available	10.4 (4 th among 50 states)	6.4
1998	Not available	6.2 (4 th among 50 states)	4/7

The table above shows that the housing market at the state level has been “red-hot” since 1999, as reflected by annual price appreciation rates in the double digits. In fact, it peaked in 2000 when New Hampshire had the highest price appreciation rate in the entire country (at 15.1 percent). It is also in 2000 that the annualized price

appreciation rate of homes in the Portsmouth-Rochester Metropolitan Statistical Area (MSA) was at its highest (at 13.5 percent). Although the state's ranking has gone down since, the annual price appreciation rates during the period 2001-2005 have essentially stayed the same. The last time that the state's annualized price appreciation rate was in the single digits was in 1998 (at 6.2 percent); data is not available for the Portsmouth-Rochester MSA.

Does the study's finding hold true (i.e., that housing value appreciation is independent of park ownership type) when it examines time periods that have different housing price appreciation rates? To answer the question, the study compared value appreciation between homes in member-owned and investor-owned parks in two time periods – 1998 and 2000. The year 2000 was selected because it is when the annual price appreciation rate was at its highest; 1998 was chosen because it is the most recent year when the annual price appreciation rate was not in double digits. Years prior to 1998 were not chosen because three of the seven member-owned parks were not yet cooperatively owned prior to 1998. This drastically reduces the number of cases in the comparison group composed of homes located in member-owned parks. It must be noted, though, that even if the

price appreciation rate for New Hampshire in 1998 was not in the double digits, it still ranked fourth among the 50 U.S. states that year.

For both years, the study compared the price of homes sold during that year to the price of the most recent previous sale. Specifically, annualized value appreciation was computed using the following formulas:

$$1998 \text{ appreciation rate} = \frac{(1998 \text{ selling price} - \text{most recent pre1998 selling price})}{\text{most recent pre1998 selling price}} \times 100$$

no. of yrs. bet. 1998 & most recent pre1998 yr. of sale

$$2000 \text{ appreciation rate} = \frac{(2000 \text{ selling price} - \text{most recent pre2000 selling price})}{\text{most recent pre2000 selling price}} \times 100$$

no. of yrs. bet. 2000 & most recent pre2000 yr. of sale

Table 63 shows the appreciation rate of manufactured homes sold in 1998. The annual average appreciation rate is 4.2 percent when comparing the prices of homes sold in 1998 to their most recent previous selling prices; the median appreciation rate is 0.7 percent. The appreciation rate of homes in member-owned parks is higher than those in investor-owned parks. However, the difference is not significant as shown by an Anova F ratio of 1.94 ($p = .17$) because the

dispersion within each park ownership type is large enough to offset the difference between them.

Table 63: Value Appreciation (1998 Selling Price vs. Most Recent Selling Price) by Park Ownership Type

VALUE APPRECIATION: 1998 SELLING PRICE VS. MOST RECENT SELLING PRICE	ANNUALIZED RATE OF CHANGE (in percent)		
	Homes in Member-owned Parks	Homes in Investor-owned Parks	Total
Mean	7.9	3.4	4.2
Median	5.6	0.0	0.7
Range	46.1	46.6	49.3
Standard Deviation	14.5	10.0	11.0
Number of Cases	14	61	75

F = 1.94 (p = .17)

Similarly, Table 64 shows the appreciation rate of manufactured homes sold in 2000. The annual average appreciation rate of homes sold in 2000 is 5.1 percent when compared to their most recent previous selling prices; the median appreciation rate is 0.4 percent. Unlike in 1998, the appreciation rate of homes in investor-owned parks is higher than those in member-owned parks. However, the difference is not significant as shown by an Anova F ratio of 0.91 (p = .34) because, again, the dispersion within each park ownership type is large enough to offset the difference between them.

Table 64: Value Appreciation (2000 Selling Price vs. Most Recent Selling Price) by Park Ownership Type

VALUE APPRECIATION: 2000 SALES VS. MOST RECENT SELLING PRICE	ANNUALIZED RATE OF CHANGE (in percent)		
	Homes in Member-owned Parks	Homes in Investor-owned Parks	Total
Mean	1.4	5.6	5.1
Median	-3.2	0.7	0.4
Range	15.2	54.6	54.6
Standard Deviation	5.9	12.8	12.2
Number of Cases	9	64	73

F = 0.91 (p = .34)

The study ran a regression analysis for both 1998 and 2000 in order to determine what factors affect value appreciation. The regression equation's dependent variable is value appreciation as measured by the annualized percentage change in the value of a housing unit over two time periods (i.e., 1998 or 2000 vs. most recent previous sale). The study's independent and intervening variables that are entered in the righthand side of the regression equation are the following:

- Park ownership type (dummy variable)
- Age of housing unit
- Number of rooms
- Finished area
- Park location index
- Park layout index

Current monthly rent amount and annual percentage rent increase were not included because rent-related data as far back as 1998 and 2000 is not available.

Table 65 presents the result of the regression analysis of 1998 manufactured home sales.

Table 65: Model Fit of Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.277	.077	-.004	11.01721

An adjusted R^2 value of $-.004$ indicates that practically none of variations in value appreciation can be accounted for by the independent and intervening variables. In other words, some other set of variables (other than the study's variables) accounts for differences in the value appreciation of homes sold in 1998. This is confirmed by Table 66. Based on the significance level of each of the independent and intervening variables when controlled against each other (refer to the last column of the table), none of the variables are significantly related to the dependent variable.

Table 66: Coefficients of Regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-18.151	13.036		-1.392	.168
	Types of MHP (Coop vs Non-Coop)	4.282	3.595	.153	1.191	.238
	Age of Housing Unit	.213	.195	.142	1.091	.279
	Finished Area (sq.ft.)	-.003	.007	-.077	-.511	.611
	Number of Rooms	3.804	2.416	.215	1.575	.120
	Location Index (Index of Driving Distances)	1.752	13.423	.017	.130	.897
	Park Features Index	2.772	6.103	.063	.454	.651

Table 67 presents the result of the regression analysis of manufactured homes sold in 2000.

Table 67: Model Fit of Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.379	.144	.066	11.77558

An adjusted R^2 value of .066 indicates that only 6.6 percent of variations in value appreciation can be accounted for by the independent and intervening variables. In other words, some other set of variables (other than the study's variables) accounts for

differences in the value appreciation of homes sold in 2000. This is confirmed by Table 68. Based on the significance level of each of the independent and intervening variables when controlled against each other (refer to the last column of the table), only the park layout index is significantly related to the dependent variable.

Table 68: Coefficients of Regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	22.977	17.052		1.347	.182
	Types of MHP (Coop vs Non-Coop)	-7.850	4.544	-.213	-1.728	.089
	Age of Housing Unit	-.018	.224	-.012	-.079	.938
	Finished Area (sq.ft.)	-.018	.009	-.307	-1.866	.066
	Number of Rooms	-.984	2.840	-.056	-.347	.730
	Location Index (Index of Driving Distances)	-18.102	14.694	-.156	-1.232	.222
	Park Features Index	18.436	7.252	.380	2.542	.013

As expected, stepwise regressions for both 1998 and 2000 cases did not yield significant enough adjusted R^2 values.

In sum, the study finds value appreciation during the periods, 1998, 2000 and 2004-2005 to be independent of the mode of park ownership for manufactured homes in Rochester NH.

SUB-SECTION 2: FINDINGS RELATED TO THE EXPLORATORY HYPOTHESIS

The study's Exploratory Hypothesis states that that appreciation of property values is greater for housing units abutting member-owned manufactured home parks, compared to those abutting investor-owned parks, all other variables held constant. The study was not able to prove the Exploratory Hypothesis. The results of the study show that value appreciation of abutting homes is not related to the type of manufactured home park they abut. This is true for abutting homes that were sold in 2004-2005. This is also true for all abutting homes whose current prices were estimated from their 2005 adjusted assessed value. Table 69 summarizes this finding.

Table 69: Value Appreciation by Ownership Type of Abutting Park

VALUE APPRECIATION	ANNUALIZED MEDIAN RATE OF CHANGE (in percent)		STATISTICS
	Homes Abutting Member-owned Parks	Homes Abutting Investor-owned Parks	
Measure 1: 2004-2005 Selling Price vs. Earliest Selling Price	Not enough cases	Not enough cases	--
Measure 2: Adjusted 2005 Assessed Value vs. Earliest Selling Price	15.0	13.9	F = 0.08 (p = .78)
Measure 3: 2004-2005 Selling Price vs. Adjusted 2000 Assessed Value	17.6	14.2	F = 1.19 (p = .31)
Measure 4: Adjusted 2005 Assessed Value vs. Adjusted 2000 Assessed Value	18.5	17.3	F = 0.28 (p = .60)
Measure 5: 2004-2005 Sales vs. Most Recent Selling Price	Not enough cases	Not enough cases	--
Measure 6: Adjusted 2005 Assessed Value vs. Most Recent Selling Price	10.5	12.3	F = 1.62 (p = .21)

Even though the study failed to prove the exploratory hypothesis, it is important to note that abutting homes do appreciate in value.

However, do they have a lower appreciation rate compared to non-abutting housing units? This is addressed by the ensuing discussion on the exploratory sub-hypothesis.

The Exploratory Sub-Hypothesis contends that there is no significant difference in the appreciation of property values in housing units abutting manufactured home parks, compared to all housing units in Rochester NH. While the study was able to gather data to compute the value appreciation of abutting homes, data was not available to generate value appreciation for all homes in Rochester NH. Instead, the study compares the value appreciation rates of abutting homes to appreciation rates at the MSA, state and national level. Table 70 provides this comparison.

Table 70: Location of Housing Units by Annual Price Appreciation

LOCATION OF HOUSING UNITS	ANNUAL PRICE APPRECIATION (in percent)	
	2004	2005
Abutting Member- and Investor-owned Parks *	14.1	
Abutting Member- and Investor-owned Parks **	16.0	
Abutting Member- and Investor-owned Parks ***	18.6	
Abutting Member- and Investor-owned Parks ****	14.1	
Rockingham-Rochester County MSA	10.06	8.97
New Hampshire	10.60	9.77
United States	11.17	12.95

* Adjusted 2005 Assessed Value vs. Earliest Selling Price

** 2004-2005 Selling Price vs. Adjusted 2000 Assessed Value

*** Adjusted 2005 Assessed Value vs. Adjusted 2000 Assessed Value

**** Adjusted 2005 Assessed Value vs. Most Recent Selling Price

Regardless of how value appreciation is computed, the table above indicates that housing units abutting manufactured home parks have higher appreciate rates compared to housing units at the MSA, state and national levels.

XI. CONCLUSION AND RECOMMENDATIONS

The study concludes that a cooperative mode of ownership does not provide an economic advantage to households residing in manufactured home parks when it comes to value appreciation. Manufactured homes located in Rochester NH appreciate in value over time, regardless of the type of park ownership. This is true both in periods when the county- and state-level annual appreciation rates were in double digits (2000 and 2004-2005), and in a period when the rates were in single digits (1998). As was noted earlier, though, even if the price appreciation rate for New Hampshire in 1998 was not in the double digits, it still represents an inflated housing market because it ranked fourth among the 50 U.S. states that year. Therefore, the study is forwarding a conditional and temporal qualification to its conclusion, i.e., a cooperative mode of park ownership does not bring about higher home price appreciation compared to investor-owned parks during periods when the housing market is inflated. Under conditions when the demand for housing is very high, homebuyers are willing to pay a higher price for a manufactured home, regardless of the type of park ownership, so long as it is in a park that has a good location and park layout. Homebuyers overlook the potential benefits of cooperative park ownership when the housing market is very competitive. Whether or not the converse is true -- under "normal"

conditions, a homebuyer is willing to pay a higher price for a home in a member-owned park compared to one in an investor-owned park, other things equal – should be the subject of future research. It is recommended that this hypothesis be tested both cross-sectionally and longitudinally, to wit:

1. A cross-sectional study would involve a comparison of value appreciation between member- and investor-owned parks in two research sites that have distinct housing market conditions, i.e., one site experiencing an inflated market, and another site operating under “normal” market conditions.
2. A longitudinal study would compare value appreciation between member- and investor-owned parks in one research site over two periods of time, i.e., one time period when the housing market is inflated, and another time period when the market is operating under “normal” conditions.

It is important to note that the study is not claiming that a cooperative mode of manufactured home ownership does not provide any economic advantage at all. As the study shows, residents of member-owned manufactured home parks pay lower rents and experience lower rates of rent increase. They also have access to non-subprime

loans from the New Hampshire Housing Finance Authority (NHHFA) and New Hampshire Community Loan Fund (NHCLF). However, these economic advantages do not translate to value appreciation that is exclusive to residents of member-owned parks. It must be noted, though, that NHHFA began extending loans to cooperative members only in 2003. It is possible that it takes more time for information to circulate regarding this economic advantage. The same can be said regarding the lower rent amounts and rent rate increases experienced by residents of member-owned parks. Although it was not covered by this study, it is possible that potential buyers are not aware of this rent-related economic advantage. The observed inability to translate economic advantages (i.e., lower rent and rent increases and access to non-subprime loans) into economic gains (i.e., value appreciation) could be accounted for by the economic theory of information asymmetries that is largely attributed to Nobel Prize economists, Joseph Stiglitz, Michael Spence and George Akerlof. The theory contends that "economic transactions are powerfully affected by the fact that buyers and sellers ... don't all have the same information (Wilson Quarterly, 2002; p. 94)." Because of this, differing assessments of the product or service by each side of the transaction lead to incongruent valuation of the price of the product or service. In a similar vein, the lack of knowledge of a product or service

predisposes a potential user to err on the conservative side in valuing the product or service. This is illustrated by the behavior over time of investors in relation to the U.S. federal government's Low Income Housing Tax Credit (LIHTC) program. During the program's inception, investors demanded a higher rate of return on their investment, mainly because they were not fully aware of the performance of the program (Swack, 2006). Through time (1986 to 2000), as investors learned more about the effectiveness of the program, "[i]nvestor demand for the credit drove up equity prices (the the amount an investor is willing to pay up front for \$1 of tax credit, spread over 15 years) from 42 cents to 80 cents per dollar (Swack, 2006; p. 268)".

In the case of housing units in manufactured home parks, it is possible that homebuyers are not fully aware of the economic advantages present in member-owned parks, thereby making them incapable of differentiating between the value of homes in member-owned parks and that of homes in investor-owned parks. As potential buyers learn more about these economic advantages, it is possible that these will lead to a relatively higher valuation of homes in member-owned parks.

In line with this, this study recommends that future research consider the following questions:

1. Does the management of member-owned parks disseminate information on the economic (and social) advantages of cooperative park ownership to people other than its members? If so, what information do they share, and in what ways do they disseminate them? If not, why?
2. Were manufactured home buyers aware of the economic (and social) advantages of cooperative park ownership when they were deciding to purchase a home? If so, to what extent has this knowledge affected their decision? If not, to what extent could this knowledge have affected their decision?
3. What perceptions do manufactured home residents have of member-owned parks?

Even if value appreciation is independent of the type of park ownership, a home in a member-owned park has a higher value compared to a home in an investor-owned park that has comparable housing characteristics. Furthermore, homes in member-owned parks, on the average, have better housing characteristics, i.e., they are newer, have more rooms, have larger living space, are in locations

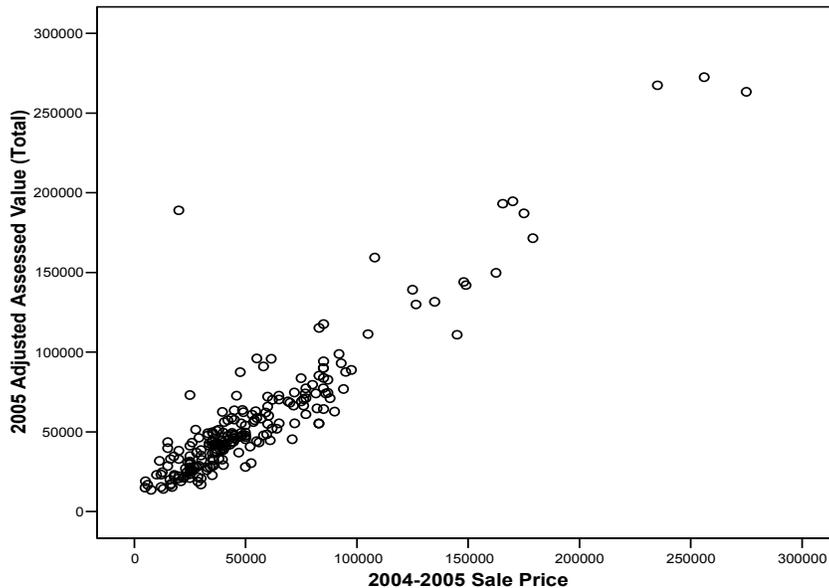
that are closer to major establishments and roads, and have better park layout. Given that these features contribute to higher home values, the study recommends that financial institutions should continue extending homeownership loans to residents of member-owned manufactured home parks. Besides, studies show that cooperative ownership of home parks produces social advantages that translate to social gains (Bradley, 2000; Nijhuis and Rivera, 2005). Financial institutions should also consider expanding their products and services to include home repair loans because these help preserve, if not increase, the value of homes.

Whether or not the economic advantages of lower rent and rent increases and access to non-subprime loans translate to economic gains other than value appreciation was not covered by the study, and is recommended for future research.

On grounds of methodology, the study underscores the usefulness of assessed values in estimating the selling prices of manufactured homes in parks. As discussed earlier in the Methodology section, the study utilized the assessed value of a home (adjusted using the median equalization ratio) in estimating its selling price in order to increase the number of housing units covered by the study. The

effectiveness of using assessed values as proxy measures of selling prices is demonstrated by very high correlations between the two figures. For instance a correlation between the selling prices of manufactured homes in parks that were sold in 2004-2005 and their corresponding adjusted 2005 assessed values generated a Pearson's r value of 0.916 ($p < .001$). Figure 3 provides a visual representation of the very strong positive one-to-one correspondence between actual sales and assessed values of homes.

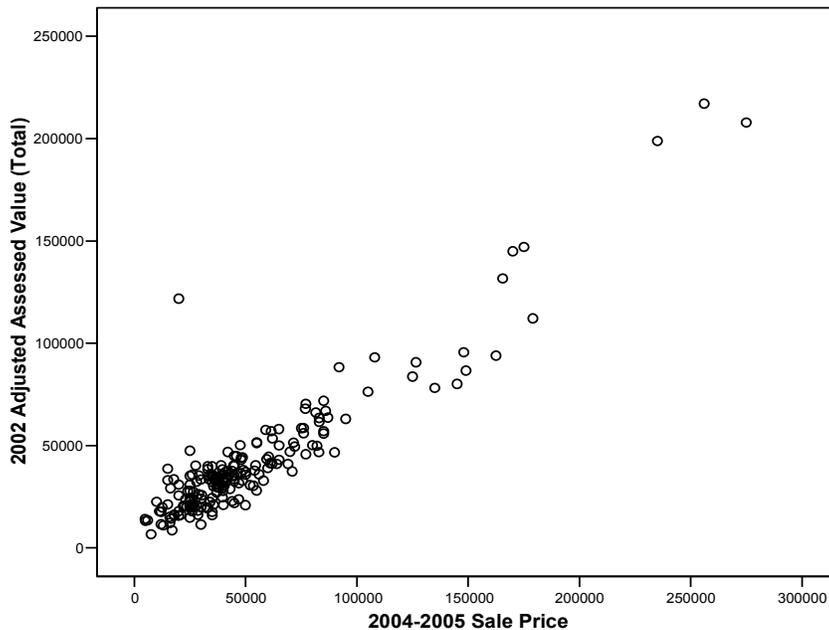
Figure 3: Scatterplot of 2005 Adjusted Assessed Values by 2004-2005 Selling Prices



It could be argued that the preciseness in assessing the value of a home could be due to the possibility that an assessor had knowledge of the actual selling price prior to his/her assessment, thus allowing her/him to assess the value of a home as close as possible to its actual

selling price. This argument is belied by the fact that an equally very strong correlation exists between the assessment of the value of homes done two to three years prior to their sale date and their corresponding actual selling price. This is shown by a Pearson's r value of 0.924 ($p < .001$) when the selling prices of manufactured homes in parks that were sold in 2004-2005 were cross-tabulated with their corresponding adjusted 2002 assessed values. The year 2002 was chosen because this is when the most recent full assessment was conducted prior to the 2005 assessment. Figure 4 provides a visual representation of this correlation.

Figure 4: Scatterplot of 2002 Adjusted Assessed Values by 2004-2005 Selling Prices



Finally, the study concludes that value appreciation of abutting homes is not associated with their being located next to manufactured home parks. This and the previous conclusions should restrain local and state policymakers and executives from enacting laws and executive orders that are biased against manufactured home parks. Living next to home parks does not decrease the value of abutting homes; thus, they cannot be accused of diminishing the city's revenues emanating from property taxes. Moreover, the value of manufactured homes is appreciating at a rate that is higher than the county and state appreciation rates; this only means that the city generates more property tax revenues from them. This is especially true for homes in member-owned parks.

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Jolan C. Rivera was born and raised in the Philippines. He received his Bachelor of Arts in the Social Sciences (double-major in Economics and Psychology) from the University of the Philippines – Baguio in 1987. He received his Master of Science (specialization in International CED) and Master of Arts in Community Economic Development in 2000 and 2005, respectively, both from the School of CED at Southern New Hampshire University.

He is currently a visiting Assistant Professor at the School of CED. His previous work experience includes teaching college-level Economics courses at the University of the Philippines - Baguio. He also worked with a number of national and international NGOs in the Philippines, undertaking tasks that include program/project design, grants writing and management, strategic planning, and program/project implementation, monitoring and evaluation, staff and community training, and consultancy. Some of the organizations he worked with include Philippine Business for Social Progress, Plan International, Pearl S. Buck Foundation, and a couple of agricultural and reproductive health programs jointly sponsored by the Philippine Departments of Agriculture and Health and the European Union.

In the United States, he was an adjunct instructor/teaching assistant at the School of CED from 2002 to 2005, teaching graduate-level courses in Project Design and Management, Principles and Practices of CED, Economics and CED, Development Economics, Information Management and Presentation, Non-Profit Management, and Research and Statistics. He recently conducted collaborative academic and action research on topics that include cooperative housing, asset accumulation for people with disabilities, immigrant language use, youth development, training assessment, participatory planning, and organizational analysis. He was the Manager of the School of CED's Applied Research Center for six months before taking on his current teaching position in 2006.