The Downward Spiral: Negative Cash Flow in Low Income Housing Tax Credit Properties

by

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A Masters Project submitted to the faculty
of the University of North Carolina at Chapel Hill
in partial fulfillment of the requirements
for the degree of Master of Regional Planning
in the Department of City and Regional Planning.

Chapel Hill

2009

Approved by:

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Abstract

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(Under the direction of Dr. Roberto Quercia)

For the past twenty-five years the Low Income Housing Tax Credit (LIHTC) has been the primary source of federally subsidized affordable rental housing production in the United States. The program is market-oriented in financing and operations. Tax incentives are used to attract private investment to projects, and competed projects are expected to be self-sufficient. Although there are rent limits and tenant income restrictions, LIHTC projects often compete against the open market for tenants. This market based structure, combined with several other financing provisions places extraordinary strain on projects to maintain sufficient cash flow levels. A 2004 report indicated an increasing number of projects were unable to do so.

This report finds that a large number of LIHTC projects do experience cash flow problems of some magnitude. A common method of addressing cash shortfalls is to draw upon funds budgeted for routine repairs and maintenance to support other operating needs. This report finds that the strategy simply leads to declining property conditions and lower occupancy and rents. The low occupancy and rent levels drag down revenue, which exacerbates cash flow problems, beginning a downward spiral of physical and financial conditions at the property.

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Tables and Figures in Text

I. Background

1) What is the Low Income Housing Tax Credit?

The Low Income Housing Tax Credit (LIHTC) is currently the only federal program subsidizing the construction and rehabilitation of affordable rental housing. Rather than provide a direct subsidy to developers the program relies on tax incentives to attract private investment in affordable housing. One of the program's original goals was to bring the efficiency and discipline of the private market to affordable housing development and operations. Projects are expected to be financially self-sufficient. They must attract tenants in a competitive marketplace and ultimately they are accountable to investors. "Investor participation is expected to add further oversight to the program, since return to the investors is dependent on the project's staying in compliance." (Cummings & DiPasquale, 1999) LIHTC has been extraordinarily successful at creating and preserving affordable housing. In 2007 it contributed to an estimated 125,000 affordable units, accounting for 90% of affordable rental housing developed. (Cummings P. , 2007)

2) Impetus for Research

LIHTC projects are relatively low-risk investments. Sites typically have high occupancy, acceptable debt coverage ratios (DCR),[1] and extremely low foreclosure rates. However, a 2004 report indicated the incidence of negative cash flow[2] was rising rapidly. (Multi-Housing News, 2004) In other words, an increasing percentage of projects had expenses that exceeded their revenue.

Negative cash flow is a serious concern for any real estate, particularly LIHTC properties. Any site with consistent cash flow problems may not be able to meet its debt obligations, may have to defer maintenance, and has no cushion if something goes wrong. LIHTC projects also run the risk of falling out of federal compliance and losing their tax benefits. Enterprise Community Investment, Inc. (Enterprise) commissioned this study to identify factors associated with negative cash flow in their tax credit portfolio. Enterprise is one of the largest and most well-

[1] Debt Coverage Ratio measures a property's ability to pay its debt. DCR=Net Operating Income / Debt Service. Net Operating Income (NOI) = Revenue – Expenses. Debt Service is payments on debt.
[2] Negative Cash Flow occurs when cash outflow from operating expenses and debt service exceeds cash inflow.

regarded real estate investment services companies for affordable housing, with a large national portfolio of LIHTC properties. (Organizational Profile in Appendix 1)

3) Hypothesis

Exploratory statistical analysis of Enterprise's portfolio indicated that a "downward spiral" of project financial and physical conditions might exist in troubled LIHTC sites. Properties already experiencing financial difficulties cut back on funding intended for repairs and maintenance, possibly reallocating it to other parts of the budget. The result is falling gross potential rent[3] and occupancy, presumably because the physical property condition has declined. Lower rents and occupancy translate into lower revenue, which exacerbates the original cash flow problem.

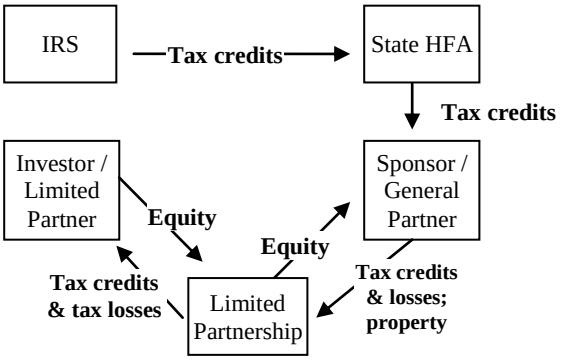
II. Literature Review and Interviews

LIHTC was created as part of the Tax Reform Act of 1986. Its basic premise is to "offer federal tax credits to private investors in return for their providing equity for the development of affordable rental housing." (Cummings & DiPasquale, 1999) The program's first few years were marked by uncertainty but Congress made it permanent in 1993. Since that time it has become the primary production vehicle for low-income rental housing in the United States (Narron, 2004) with an estimated 1.5 million units placed in service since the program's inception. (Usowski & Hollar, 2008)

1) Program Mechanics

Each year Congress allocates tax credits to states and a few local jurisdictions on a per capita basis, currently $2.20. (North Carolina Housing Finance Agency, 2009) The administering state or local agency then allocates credits to developers (formally referred to as "sponsors") of

Figure 1: LIHTC Program Structure



[3]Gross Potential Rents are the total rents that would be collected by the property if all units were leased with no rent concessions (e.g. leasing specials).

projects that will create or retain affordable rental housing. (McClure, 2000) Projects must reserve at least 40% of units for households earning at or below 60% of Area Median Income (AMI)[4] or 30% to households at or below 50% of AMI and meet other federal program requirements and state priorities as articulated in the Qualified Allocation Plan (QAP).[5] Units must remain affordable for at least 15 years. Eligible projects may receive credits for up to 9% of eligible construction and / or property acquisition costs or 4% of land acquisition costs for affordable units annually for ten years.[6] (Enterprise Community Investment, Inc., 2006)

LIHTC is unique among existing federal production-side[7] support initiatives for affordable rental housing in that it does not provide a direct subsidy. Instead, it encourages private investment in affordable housing by providing credits against owners' tax liabilities for a period of ten years. (Usowski & Hollar, 2008) Sponsors with urgent capital needs effectively sell 99.9% of credits and other project tax benefits to investors for ten years in return for an immediate[8] equity infusion. The legal mechanism through which the credit transfer occurs, a Limited Partnership,[9] results in joint ownership of the project. The sponsor contributes the property and the tax credits to the partnership. They are responsible for all project management functions: retaining and overseeing the development and management teams, assembling the financing, and assuming most of the risk. In the context of the partnership the sponsor is known as the General Partner. The investors contribute equity equal to the total value of tax credits multiplied by some market-driven price. They receive the tax credits and most other project tax losses over the course of ten years. Investors are known as Limited Partners in the context of the partnership. Limited Partners are typically uninvolved in daily management, and are insulated from performance issues unless the site becomes insolvent or is out of compliance with regulatory requirements. (Paul, 2007)

[4] Area Median Income (AMI) refers to the Census-defined median income for a given area. Income as a percentage of AMI is used as a eligibility test for many federal programs.
[5] The Qualified Allocation Plan (QAP) is a state-level document detailing the selection criteria and application requirements for housing tax credits and tax-exempt bonds.
[6] Projects with only 4% credits ("bond deals") often have different financial structures than 9% deals. All projects in analyzed in this study include 9% credits.
[7] Federal rental assistance programs fall into two categories. Supply or production side programs subsidize the creation of housing, while demand side programs offer rental subsidies directly to low-income households.
[8] "Immediate" typically means over the course of development and lease-up
[9] A Limited Partnership is a business organization with general partners who manage the business and assume legal debts and obligations, and limited partners, who are liable only to the extent of their investments. Limited partners enjoy rights to the partnership's cash flow, or in the case of tax credits, its tax losses.

A project seldom realizes economic benefits exactly equal to the dollar value of the credits allocated. In early 2009 credit prices in strong markets were around $0.79 (Kimura, 2009) so a project with an allocation of $1 million in credits might receive $790,000 from Limited Partners ($1 million x $0.79). In return, the investors would receive a $100,000 dollar-for-dollar write-down on their taxes plus any other tax losses the project realized annually for ten years. (Abravanel & Johnson, 1999)

The benefits received by investors from LIHTC properties are different than those achieved in traditional real estate investments, which impacts the way projects are underwritten.[10] In traditional real estate investors receive a share of cash flows annually and at disposition.[11] Therefore, they have a vested interest in the property attracting tenants at the highest possible rents and eventually attracting a high sale price. (Geltner, Miller, Eichholtz, & Clayton, 2006) LIHTC investments, on the other hand, are tax shelters. The number of credits investors receive annually is fixed and will not change unless there are serious noncompliance issues. (Enterprise Community Investment, Inc., 2006) From this perspective, an investor's maximizing strategy would focus on simply keeping the site in compliance.

Figure 2: Calculating Tax Losses

Cash Flow Calculations			Tax Assessment	
Revenue	$100,000		Before Tax Cash Flow	$10,000
Less Expenses	($985,000)		Less deductions	($60,000)
= NOI	*$15,000*		= Taxable Income	($50,000)
Less Debt Service	($5,000)		x Tax Rate	-
= Before Tax Cash Flow	*$10,000*		*= Tax Burden / Loss*	*($50,000)*

Investors "may also claim the projects' depreciation [and other] deductions[12] against other income. While this tends to increase the amount paid for LIHTC investments, it also reinforces the need to operate LIHTC projects as close to zero net cash flow as possible." (Usowski & Hollar, 2008) This further distinguishes them from traditional investors who strive

[10] Underwriting refers to the process by which investors determine if they will assume the financial risk of investing in a project. In the context of LIHTC, a development, income and expense budget is created and projected out for the life of the partnership.
[11] Disposition refers to sale of the property.
[12] Projects are permitted to take tax deductions for certain line items. The most noteworthy are interest payments on debt and depreciation. Depreciation refers to the concept that the physical components of the property (its "depreciable basis") will not last infinitely. For tax purposes the useful life of components in a LIHTC building is 27.5 years. A property may take a deduction equal to the depreciable basis divided by 27.5 each year.

for high cash flows. Tax losses typically flow from depreciation and interest deductions. (See Figure 2 for a calculation of tax losses.)

2) LIHTC as a Market-Based Program

It cannot be emphasized enough that LIHTC is a market-driven program. Affordable housing had come to be characterized in popular mentality as slum housing, inhabited by the poorest of the poor. The constant demand for operating subsidies was perceived as a drain on tax dollars to support housing that was blight on cities. LIHTC was a reaction against that. (Daye, et al., 1999) LIHTC was not only intended to seek financing in a more market-based model, it was supposed to operate in a market context. Unlike Section 8 and other programs that receive subsidies on an ongoing basis, LIHTC only receives a construction subsidy. In other words, the rents the site may charge are limited, but they are often fairly close to market rents, and the band of income-eligible tenants is often very narrow. (Usowski & Hollar, 2008) LIHTC properties must often compete in the open market against traditional properties charging similar rents to attract tenants from a much smaller pool.

3) Program Strengths

The most often-cited benefits of the LIHTC program relate to its extraordinary success as a vehicle for affordable housing creation. "LIHTC projects account for nearly 90% of all affordable rental housing developed today." (Cummings P. , 2007) Many LIHTC developers claim their projects would not have been feasible without credits, which "can typically raise somewhere between 50 to 60 percent of the total project costs through equity." (Duell & Myers, 2004)

Proponents also suggest that the program allows the government to fund more affordable housing than it could with a direct subsidy because the government experiences the financial impact over ten years while the development realizes the benefit immediately. (Anthony, 2009) Detractors respond the program is inefficient because projects do not realize the full benefit of the government's outlay. (Case, 1991)

Program supporters also argue that LIHTC is a low risk, effective investment vehicle for companies seeking tax losses (Rhine, 2008) and units are very high quality initially. (McAdie, 2009) LIHTC's application of market efficiencies to affordable housing is another both as a program strength and weakness.

4) Challenges

Management, market, physical plant, and underwriting are four commonly-cited concerns in real estate development and operations. LIHTC's major challenges are rooted in these issues as well.

A) Management

The LIHTC program is complex and requires a great deal of administrative time and expertise to manage. A study of property owners who only used tax credits once found their major reasons for not participating in the program on an ongoing basis were "perceptions of excessive rules or regulations, too much paperwork, or general difficulties in using the credit... Some believed the tax-credit program was simply 'too tough.'" (Abravanel & Johnson, 1999)

LIHTC property management entails all the work of traditional property management such as leasing, rent collections and maintenance. The failure to do this part of the job well can result in long vacancies, poor physical property condition, and nonpayment of rent to name a few challenges. (Bratt, Schwartz, Keyes, Stockard, & Vidal, 1998) However, managing a LIHTC property also encompasses time consuming work such as certifying tenants' income, submitting to regular property reviews, and meeting other compliance regulations. A successful property manager will also file applications for rent increases and tax relief to assist the property. For many property managers the demand major challenge is managing the property at zero net-revenue. (Tatum, 2009) Research suggests that even with these difficulties property management is not the greatest systemic problem for LIHTC properties. (Multi-Housing News, 2004) A study by Bratt et al concluded that "day-to-day property management in the sampled developments is generally sound." (Bratt, Schwartz, Keyes, Stockard, & Vidal, 1998)

B) Market

The market-based LIHTC program requires properties to compete for tenants on the open market. Sponsors undertake feasibility studies measuring likely demand among the eligible market share and the project's ability to operate on the resulting income. (North Carolina Housing Finance Agency, 2009) However, many projects are still sited in less-than-ideal locations for reasons such as state allocation priorities or market changes. (Cummings & DiPasquale, 1998) One common market challenge results when the rent level necessary to make a project feasible is so close to market rate the site is no longer desirable from the perspective of affordability. (Martin M. , 2009)

Even in strong markets, marketing is essential. In particular, the curb appeal – how a building looks from the street or during a casual walk-through – is important. "First impressions are lasting impressions. How it looks when you come in can create in your mind a lot of your perception about how things will be handled in the future." (Tatum, 2009) There is wide variation in the priority placed physical appearance. For example, "in North Carolina… it's got curb appeal up the wazoo. In Massachusetts, even to decorate a management office was a struggle because the perception in the public sector was that it was a misuse of funds." (Tatum, 2009) The greatest issues relate to *maintaining* rather than creating a marketable product. Bratt et al found that most of the LIHTC properties in their study had "curb appeal greater than other properties in their neighborhoods" initially. However, inadequacy of cash flow and reserves precluded preventative maintenance and repairs. Over time, the quality of the building degraded. (Bratt, Schwartz, Keyes, Stockard, & Vidal, 1998)

C) Physical Plant[13]

The physical condition of a building and its systems are critical to facilitating marketing and stabilizing costs. New construction is usually high quality and seldom experiences serious problems in the first five to seven years of its life. Rehabilitated properties are much more likely to run into trouble early (Floreani, 2007) particularly because their core systems may not last as long as projected. Regardless of the construction type and quality all projects need routine

[13] Typically physical plant refers to a building's systems such as HVAC. Here it refers to the entire physical property, not only its systems.

maintenance on an ongoing basis and larger work at some point. (Bratt, Schwartz, Keyes, Stockard, & Vidal, 1998)

The financial structure of the LIHTC program allows for neglect of the physical plant in several ways. Real Estate Policy and Asset Management Consultant Len Tatum cites the length of investor involvement as one issue. He explains "the investment horizon in the market sector is much shorter.[14] It's always someone else's. Put it up, fill it up, flip it is the mentality. Because of that there's a lot of focus on the curb appeal" in order to show potential purchasers the property is a good investment. (Tatum, 2009) LIHTC investments are held for twice as long and often have pre-identified buyers. On an annual basis the financial structure favors keeping properties in compliance rather than in excellent condition since the goal is to realize zero net cash flow. As discussed in the marketing section, this tends to lead to a slow degradation of the building.

The most serious challenge to the physical plant is the tendency for the preventative maintenance and repairs budget to be used for other purposes. "Faced with income insufficient to cover operating costs, property owners tap 'other available funds' [such as maintenance funds] to pay the bills.... At best, they are a stop-gap solution to the problem of negative cash flow; at worst, their use can lead to new problems." (Bratt, Schwartz, Keyes, Stockard, & Vidal, 1998)

D) Underwriting

LIHTC attempts to serve a range of different interests. States wish to serve a social purpose often with the lowest possible rents. Sponsors may have the same interest, but also need the project to be financially feasible. Investors wish to make their required return. (Cummings & DiPasquale, 1998) Attempting to serve all these disparate interests inevitably creates underwriting problems.

Many properties operate "thin", with small provisions for administrative and marketing costs and very little cushion. Problems are inevitable. Certain expenses like taxes, insurance, utilities may fluctuate uncontrollably, the market may change, or major repairs may be necessary. (Stegman, 1999) Sponsors may also be overly optimistic as they forecast revenue and expenses moving forward. Many underwriters admit that projections more than five years into the future are

[14] Traditional real estate investments are usually sold after five years, while LIHTC properties are held for ten years.

notoriously unreliable. (Usowski & Hollar, 2008) Properties may also be overleveraged[15]. In states like Minnesota where a great deal of soft debt[16] is available projects fare relatively well but elsewhere debt service may be burdensome. (Stegman, 1999)

One popular view is that well-capitalized reserves will provide the necessary cushion for these potential underwriting woes (Bratt, Schwartz, Keyes, Stockard, & Vidal, 1998), (McAdie, 2009), but Tatum disagrees. He claims underwriters need to recognize that many properties have insufficient revenue to capitalize reserves. Furthermore, he thinks owners should reinvest in a property on an ongoing basis to keep it in excellent condition rather than leaving untouched reserves as a hedge against total collapse at a mediocre property. (Tatum, 2009) Regardless of whether reserves are the correct response, thin budgets are a serious challenge for LIHTC projects.

5) The Downward Spiral

The worst challenges are often the result of more than one issue. A project may experience poor cash flow performance in a given year for any number of factors impacting revenue or expenses. A unique occurrence of cash shortfall is typically not very serious but "repeated practice of spending more money than is taken in will eventually have devastating results." When owners and managers follow the common practice of filling budget holes with money intended for repairs and maintenance, preventative upkeep is neglected. The building degrades, slowly increasing operating expenses (Bratt, Schwartz, Keyes, Stockard, & Vidal, 1998) and decreasing rental income. The problem was best described by Michael Martin, Senior Vice President at Winn Residential. He claimed serious problems can stem from any cost fluctuation or even poor underwriting that leads to "a lack of available funds. You sort of wind up in the spiral of 'I don't have enough funds to keep the property looking great, so then I can't get the highest achievable rent possible for that market place; oops, and my occupancy slips as well. You wind up with slightly lower rents and slightly lower occupancy, but those add up to quite a bit. You wind up in this spiral – a downwards spiral." (Martin M. , 2009)

[15] Leverage refers to the level of debt a property has.
[16] Soft debt refers to a loan with generous repayment terms. The loan may be forgivable if the property remains affordable, or payments may be contingent upon the availability of cash flow.

III. Methodology

1) Data Source

Project-level data on 1,002 LIHTC properties were gathered from Enterprise Community Investment, Inc.'s tax credit syndication arm. Enterprise, a subsidiary of the Enterprise Foundation, is a national affordable housing financial services company. Data included descriptive, static information (e.g. location, construction type) and performance measures collected annually by Enterprise's asset managers (e.g. financial performance, occupancy).

Projects were located in 47 states throughout the continental United States and in Alaska. Sixty-three percent were located in urban areas, 16% in suburban areas, and 21% in rural areas. Projects represented all construction types: 56% were new construction, 27% were substantial rehabilitations, 13% were moderate rehabilitations, and 4% were some combination of types. Project sponsors included both non-profits (23%) and for-profits (77%). The portfolio represented sites targeting families (72%), people with special needs (32%), seniors (21%), and a few serving Native Americans and Single Room Occupancies (SROs). Many properties targeted more than one population. Projects ranged in size from six to 408 units, with an average of 55 residential units. Properties with commercial income were excluded from the sample to ensure consistency of cash flow data. The sample included properties that had reached Qualified Occupancy (QO) between 1989 and 2006. Data was considered for properties beginning in the year after they achieved QO so results do not reflect any partial years of operation. All projects had 9% credits, and some also had 4% credits or historic tax credits.

2) Variables

The following is a list and explanation of variables analyzed at any point in the research.

- **Negative Cash Flow:** a discrete variable that answers the question 'is NOI minus debt service less than zero?' This is a good substitute for DCR, which cannot be used for projects with no debt service.
- **NOI Ratio:** a continuous variable that represents the ratio of actual to projected NOI. Ratios were constructed for most financial variables because absolute dollar figures

indicate very little about a project if the underwriting budget allowed for them. Deviations from the budget indicate strength of performance. The NOI Ratio = Actual NOI / Projected NOI. For example, if actual NOI was $125 but the projection was $100 the ratio would be: $100/ $125= 1.25. Projects with projected revenue less than zero were excluded from analysis because intentional negative cash flow skews results.

- **Revenue Ratio:** a continuous variable representing the ratio of actual to projected revenue.
- **Gross Potential Rent Ratio:** a continuous variable representing the ratio of actual to projected gross potential rents. Gross potential rents indicate the rental income of a project if all units were leased, so it is a good measure of the rent rates.
- **Vacancies and Concessions Ratio:** a continuous variable representing the ratio of actual to projected revenue lost from vacant units and rent concessions (e.g. leasing specials).
- **Operating Expense Ratio:** a continuous variable representing the ratio of actual to projected total operating expenses
- **Operating Expense Line Item Ratios:** seven continuous variables representing the ratio of actual to projected expenses from the following line item expenses: administrative, utilities, maintenance and repairs (Repairs Ratio), real estate taxes (Taxes Ratio), insurance, management fees, and other expenses.
- **Occupancy:** a continuous variable indicating the percent of units in the project that are leased.
- **Population:** five discrete variables indicating whether the project is targeted to one of the following populations: families, seniors, Native Americans, people with special needs, SROs. Projects may serve more than one population.
- **Support Services:** a discrete variable indicating whether the site provides support services.
- **Region:** four discrete variables indicating which of Enterprise's service regions the site is located in: Northeast, Mid-Atlantic, Central, or West.
- **Construction Type:** four discrete variables indicating whether the project was new construction, substantial rehabilitation, moderate rehabilitation, or a combination thereof.
- **Location:** three discrete variables indicating if the project is located in an urban, suburban, or rural area.

- **Physical Condition:** four discrete variables indicating how Enterprise asset managers ranked the physical condition of the property in 2007: excellent, good, satisfactory, or poor.
- **Age:** a continuous variable measuring the age of the project from qualified occupancy.
- **Sponsor Type:** a discrete variable indicating whether the sponsor was a for-profit or non-profit entity.
- **Units:** a continuous variable indicating the number of non-commercial units in the project.

3) Methodology

Initial exploratory analyses indicated that the Operating Expense Ratio, Revenue Ratio, and Occupancy were all strongly associated with cash flow, and that Physical Property Condition was a critical control variable for explaining these three factors.

A review of literature and interviews with practitioners from a cross section of the LIHTC industry were used to develop a hypothesis and focus further research. Geoffrey MacAdie, Portfolio Manager for Massachusetts Housing Partnership, offered a lender's perspective. Len Tatum, a Real Estate Policy and Asset Management Consultant, provided an asset manager's view point. Michael Martin, Senior Vice President of Winn Residential gave a property management company's perspective. Amy Anthony, President and Executive Director of Preservation of Affordable Housing provided an owner's point of view. (Biographies and organizational profiles in Appendix 2)

The resulting hypothesis is premised on a downward spiral model:

> *Properties experiencing financial difficulties often cut back on funding intended for repairs and maintenance. This leads to falling occupancy and rents, and corresponding lower revenues. The lower revenues exacerbate cash flow problems, creating a downward spiral of financial and physical conditions in the property.*

The model was tested with further data analysis, discussed below, and found to be supportable.

IV. Findings from Exploratory Analyses[17]

1) Identifying Important Factors

Exploratory analyses were conducted using regressions based on two complementary dependent variables: Negative Cash Flow and NOI Ratio. Negative Cash Flow identified the most troubled projects and served the important function of accounting for whether a project could cover its debt service. The NOI Ratio provided a broader and more robust analysis of project performance. The two sets of analyses identified similar variables associated with cash flow. (See Appendix 3, Tables 1-4 for regression tables.)

- The Revenue Ratio had a strong negative association with Negative Cash Flow and a strong positive association with the NOI Ratio. As the ratio of actual to projected revenue increased NOI also increased and the likelihood of cash flow being negative decreased.
    - The Gross Potential Rent Ratio had a strong positive association with the Revenue Ratio. Furthermore, by excluding the Revenue Ratio from the initial model The Gross Potential Rent Ratio had a strong positive association with Negative Cash Flow, and the NOI Ratio, suggesting the association with the Revenue Ratio served as a confounding variable.
- The Operating Expense Ratio had a strong positive association with Negative Cash Flow and a strong negative association with the NOI Ratio. As the ratio of actual-to-projected operating expenses increased the likelihood of Negative Cash Flow increased and the NOI Ratio decreased.
    - The Repairs Ratio was a particularly significant line item. It had a strong positive association with Negative Cash Flow and a strong negative association with the NOI Ratio.
- Occupancy had a strong positive association with the Revenue Ratio. Furthermore, by excluding the Revenue Ratio from the initial model Occupancy had a strong positive

[17] Coefficients were given equal consideration as z-scores / t-scores in these analyses. A more detailed explanation of coefficients and z-scores is included at the beginning of Appendix 3.

association with Negative Cash Flow and the NOI Ratio, suggesting the association with the Revenue Ratio served as a confounding variable.

- Several Regions, Locations, and Construction Types also indicated significant associations with both Negative Cash Flow and the NOI Ratio.

Physical Property Condition was the only variable for which longitudinal data[18] was not available. Information on Physical Property Condition was only available for 2007. In order to benefit from the richness of the data set the initial models did not include the Physical Property Condition variable, but did include all six years of data (2002 – 2007). Analyses were also conducted controlling for Physical Property Condition but only evaluating 2007, which yielded similar results. Revenue Ratio and Operating Expense Ratio were highly significant just as they were in the base models. Regions, Locations, and Construction were still significant to varying degrees. Finally, Satisfactory and Poor Conditions showed some association with both Negative Cash Flow and NOI Ratio. (Appendix 3, Tables 5 and 6)

2) Revenue Ratio

Variables most associated with the Revenue Ratio were the Gross Potential Rent Ratio and Occupancy. Both variables had strong positive associations with the Revenue Ratio, indicating that as they increased the Revenue Ratio would also increase. (Appendix 3, Table 7) This is not surprising; LIHTC revenue consists primarily of rental income, calculated as a function of occupancy and rents, (which can be derived from Gross Potential Rent). Further analysis suggested that controlling for Physical Property Condition might yield fruitful information. (Appendix 3, Table 8)

3) Operating Expense Ratio

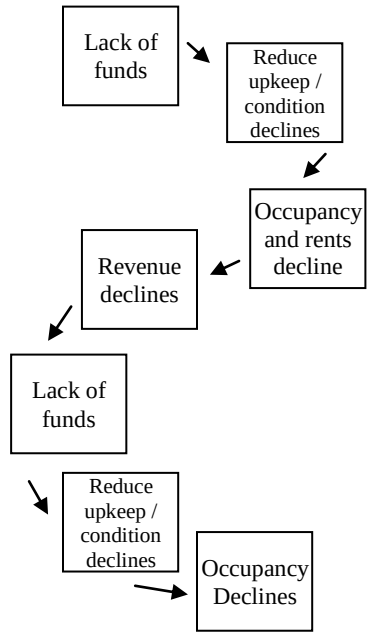
Initial analyses of the Operating Expense Ratio were not fruitful. Although a few variables indicated significant z-scores, no coefficient exceeded .08. (Appendix 3, Table 9) Controlling for Physical Property Condition yielded excellent results, however. Occupancy indicated a strong positive association. Satisfactory and Poor Conditions were also associated with the Operating Expense Ratio. (Appendix 3, Table 10)

[18] Longitudinal data provides information over more than one period of time.

4) Occupancy

Nothing was associated with Occupancy until Physical Property Condition was controlled for. Then, Poor Physical Condition became highly negatively associated with Occupancy. All coefficients were very small but the Revenue Ratio, New Construction, and Suburban Locations did have significant t values. (Appendix 3, Tables 11 and 12)

Figure 3: Downward Spiral Model



5) Gross Potential Rents

The Operating Expense Ratio and Occupancy were both highly positively associated with the Gross Potential Rent Ratio. Controlling for Physical Property Condition simply moderated these associations. Poor Condition also had a fairly strong negative association and relatively large coefficient. (Appendix 3, Tables 13 and 14)

6) Physical Property Condition

The Operating Expense Ratio and Occupancy were the two variables most strongly associated with Physical Property Condition. Properties in Excellent Condition had a negative association with the Operating Expense Ratio while those in Satisfactory and Poor Conditions had positive associations, indicating that cost overruns are associated with degraded properties. Additionally, properties in Excellent and Good Conditions had positive associations with Occupancy, while those in Satisfactory and Poor Conditions had negative associations. This indicates that lower occupancy tends to be associated with poorer physical property conditions. (Appendix 3, Tables 15-18)

7) Hypothesis: The Downward Spiral

Based on these initial findings a preliminary hypothesis was developed that suggested projects in Poor Condition had higher-than-projected expenses for repairs and, concurrently low occupancy leading to low revenue. The confluence resulted in poor cash flow performance. It became clear

however, that there was far more interplay between factors than such a linear explanation could account for.

Interviews with LIHTC practitioners indicated the possibility of a "downward spiral" which might explain the interrelated nature of the variables. The model is as follows: (1) A project experiences cash flow problems for any number of reasons. (2) To help address the shortfall they "skimp" on repairs and maintenance. (3) Occupancy and Gross Potential Rent fall as physical condition declines. (4) Revenue falls due to lower income from rents. (5) Lower revenue exacerbates the cash flow problem, beginning a physical and financial downward spiral for the project.

V. Findings from Analyses on the Downward Spiral Model

First, the scope of cash flow problems in Enterprise's portfolio was explored. Next the extent to which expenses impact cash flow was evaluated, and the possibility that funds intended for repairs were used as gap funding was explored. Next, the extent to which low spending for repairs and maintenance impacts physical property condition was considered. The question of whether physical condition and spending for repairs was associated with occupancy and rent levels was then addressed. The impact of occupancy and rents on revenue was evaluated, and finally the impact of revenue on cash flow was considered.

1) Scope of Cash Flow Problems

Bratt et al observed that more than half the properties they evaluated experienced cash flow problems in any given year. (Bratt, Schwartz, Keyes, Stockard, & Vidal, 1998) While most issues were short-term and mild the magnitude of the problem they observed is baffling. Because marginal properties are at risk of falling into the spiral it is important to know if Enterprise suffers from a similar issue.

Figure 4: Enterprise Community Investment LIHTC Project Cash Flow Performance, 2002-2007

Ratio of Actual-to-Projected NOI	% of Properties
Cash Flow Negative	12.7%
0 - 50%	15.4%
50 - 75%	17.3%
75 - 100%	21.4%
100 - 125%	14.8%
Greater than 125%	18.3%

Ratios are the same NOI Ratios used throughout the report.

On average, less than 13% of the properties in Enterprise's LIHTC portfolio experienced negative cash flow between 2002 and 2007, in line with industry averages reported by Ernest and Young. (Multi-Housing News, 2004) Approximately 56% of the portfolio had acceptable to excellent cash flow performance (NOI Ratio of at least .75). However, one-third of projects had NOI Ratios between zero and .75, indicating that cash flow was positive but substantially below projections. Many of these properties are not struggling in a way that would attract dramatic intervention by most asset managers. Bratt et al reported that even the properties they studied that had cash flow problems were generally in very good condition. (Bratt, Schwartz, Keyes, Stockard, & Vidal, 1998) However, an ongoing pattern of low NOI Ratios merits attention.

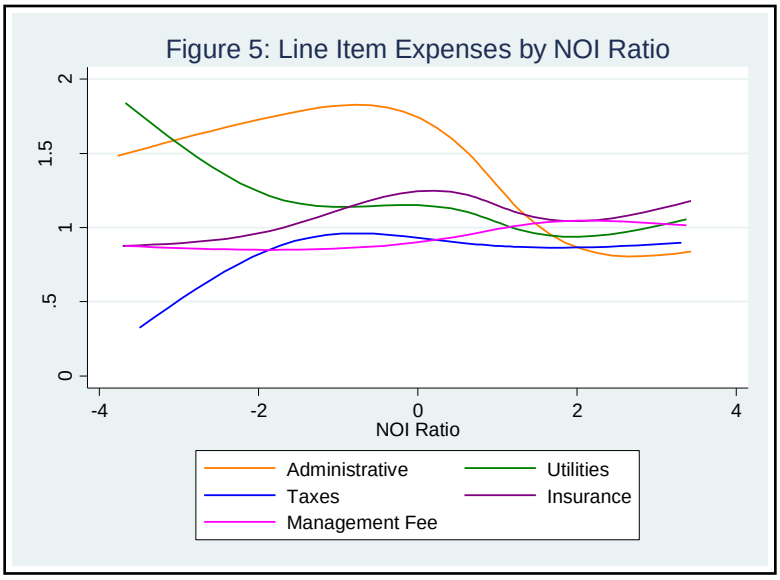
2) Causes of Cost Overruns: Revenue and Expenses

In the most basic sense poor cash flow is due to low revenue, high expenses, or a combination thereof, following the accounting principle that Revenue – Expenses = NOI. (Geltner, Miller, Eichholtz, & Clayton, 2006) Exploratory research supported that principle among the sample population. Both the Revenue Ratio and Operating Expense Ratio are strongly associated with cash flow. (Appendix 3, Tables 1-4) Cost overruns present a greater challenge than revenue shortfalls in Enterprise's portfolio although a combination of the two issues was most often the culprit. Half of projects with an NOI Ratio less than one had both Revenue and Expense Ratios less than one. 12% had a Revenue Ratio less than one but a good Operating Expense Ratio, and 38% had an Operating Expense Ratio greater than one but a high Revenue Ratio.

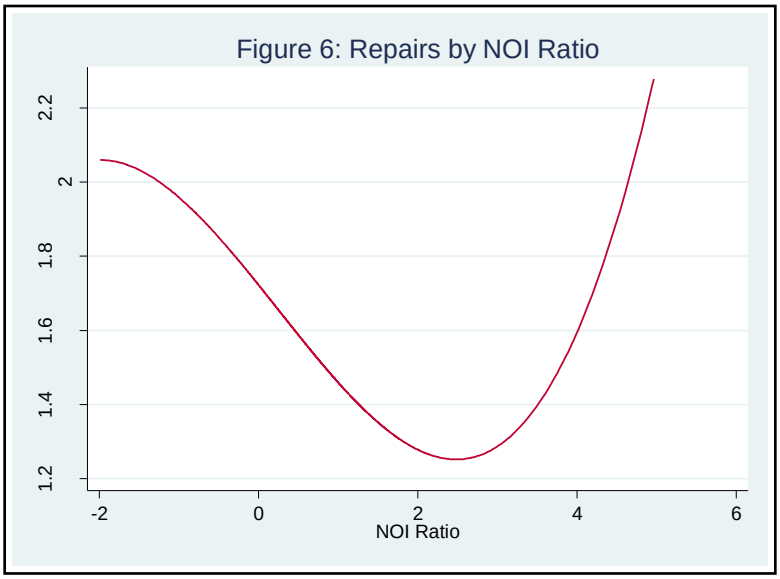
3) Association Between Line Item Expenses and NOI Ratio: Are Repairs Funds Used to Meet Shortfalls?

While the association between the Operating Expense Ratio and cash flow was clear the individual line items which make up Operating Expenses were more varied. Most line items remained relatively stable as the NOI Ratio varied, although administrative costs and utilities decreased as the NOI Ratio increased. (Figure 5) It is not surprising that the Administrative Expense Ratio was highest for troubled projects, which likely have complex efforts surrounding workouts or other remedies. Some of the site's problems may have stemmed from underestimating administrative needs in the first place. The fact that the Utilities Ratio was

highest among the most troubled properties and then stabilized may indicate that utility cost fluctuations helped drive cash flow problems or that utilities were a bell-weather issue for poor budgeting. The other expense ratios were fairly stable because they are fixed costs or were calculated based on project performance.

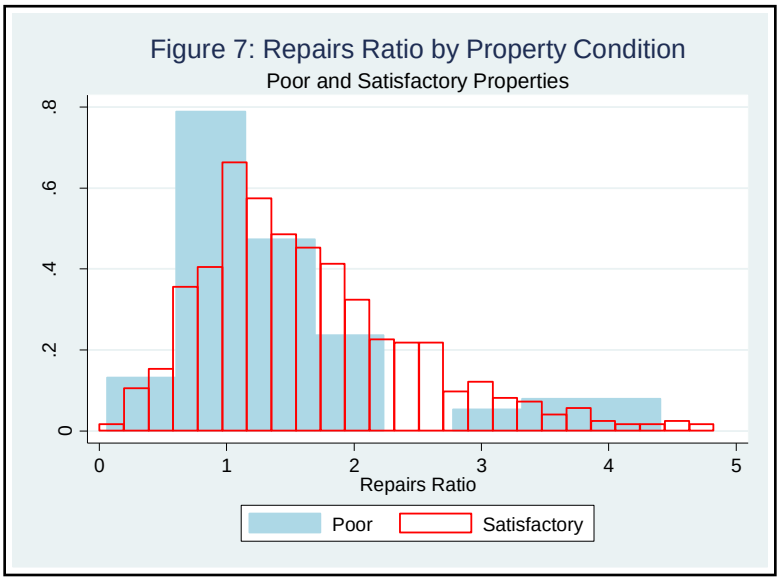


The Repairs Ratio, which was the most highly associated with cash flow, performed differently than the other expenses. It was very high for projects with the worst NOI Ratios, but declined steeply for marginal projects – those with NOIs approximately between zero and two – before rising again. (Figure 6) The drop in spending among marginal projects, unmatched among other line items, supports the assertion that sites may call upon their repairs and maintenance line items to shore up troubled budgets. Additional research on this front would be useful, but supporting assertion from practitioners (Tatum 2009; Martin 2009) and other researchers (Bratt, Schwartz, Keyes, Stockard, & Vidal, 1998) makes this theory supportable defensible.

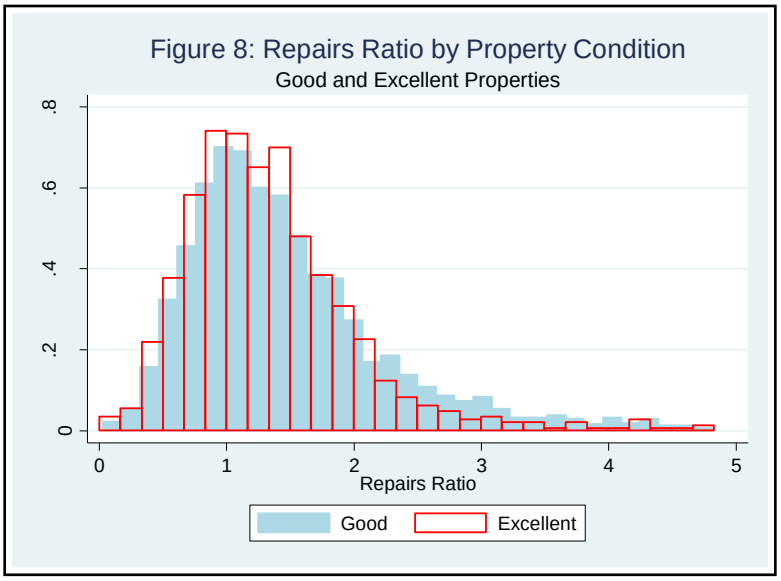


4) Impact of Spending for Repairs on Physical Property Condition

A core assertion present in the interviews and literature was that failing to conduct routine preventative maintenance of a property would have a damaging effect on its condition. (Bratt et al, 1998; Martin, 2009; Tatum, 2009) Identifying an association between the Repairs Ratio and Physical Property Condition would support that assertion.



Analyses clearly showed an association between lower a Repairs Ratios and Poor Condition. (Appendix 3, Table 19). As the Repairs Ratio decreased the likelihood a property was in Poor Condition increased. Significant associations were not present for other property conditions. Furthermore, the mean Repair Ratio for properties in Poor Condition was just 1.456, compared to 1.836 for those in Satisfactory Condition and 1.508 for those in excellent condition. Properties in Excellent Condition had the lowest Repairs Ratio, at 1.3601, likely because they did not need substantial repairs. (Figures 7 and 8)



Because data regarding Property Condition was only available for 2007 it is difficult to track how properties declined over time.

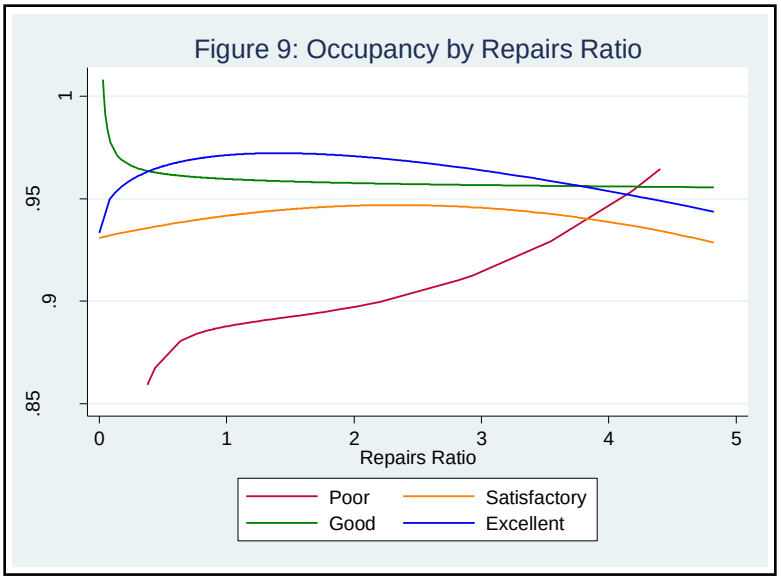
However, a trend in spending is clear. The mean Repairs Ratio fluctuated from year to year but its general trend was it to increase or stay constant between 2002 and 2007 among most types of properties. However, it displayed a steady downward trend in properties that were in Poor Condition in 2007. While this is not conclusive evidence that the properties were degrading it does indicate that a long-term pattern of neglect is present in the worst properties.

5) Impact of Physical Property Condition on Occupancy and Gross Potential Rent

A) Occupancy

Exploratory research identified a strong association between Occupancy and Physical Property Condition, particularly Poor Condition. (Appendix 3, Tables 12 and 15-18) Mean Occupancy was highest in properties in Excellent Condition (97%), decreased slightly in Good and Satisfactory Conditions (95% and 93%) and dropped precipitously among properties in Poor Condition (85%). Physical Property Condition also appeared to be an important control variable for Occupancy, particularly as relates to the Operating Expense Ratio. Because longitudinal data was available for Occupancy but not Physical Property Condition it was difficult to associate changes in Occupancy with changes in Physical Property Condition. The Repairs Ratio was used as a proxy for that purpose.

There is a strong positive association between the Repairs Ratio and Occupancy: as the Repairs Ratio increases, Occupancy likewise increases. (Appendix 3, Table 20) Among most types of properties sampled, spending for repairs had little impact on Occupancy and sometimes even corresponded with lower Occupancy levels. It is not difficult to imagine that a long-term, large-scale project in an otherwise high-quality building could be unpleasant for residents. Among properties in Poor Condition, however, an increase in



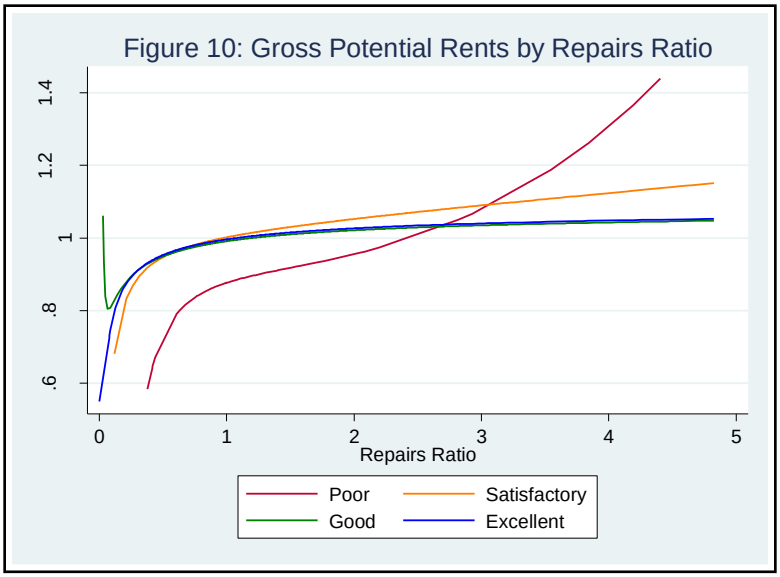
the Repairs Ratio was associated with an increase in Occupancy, potentially by people attracted to improving conditions or reduced tenant losses. (Figure 9)

B) Gross Potential Rent Ratio

An association between Property Condition and the Gross Potential Rent Ratio would indicate that the physical upkeep of a building is associated with the rent rates that can be charged, as Martin asserts.

The Repairs Ratio was again used as a substitute for longitudinal data about property conditions, and the results were no less conclusive. A comparison of mean Gross Potential Rent Ratios left no doubt that Physical Property Condition impacts the rents a property can charge. The Gross Potential Rent Ratio was 1.00 for properties in Excellent and Good Conditions and 1.05 for Satisfactory Conditions, but plummeted to .89 for those in Poor Conditions. Regressions also indicated a fairly strong negative association between the Gross Potential Rent Ratio and Poor Condition, indicating that properties in Poor Condition are likely to have lower-than-projected gross potential rents. (Appendix 3, Table 14)

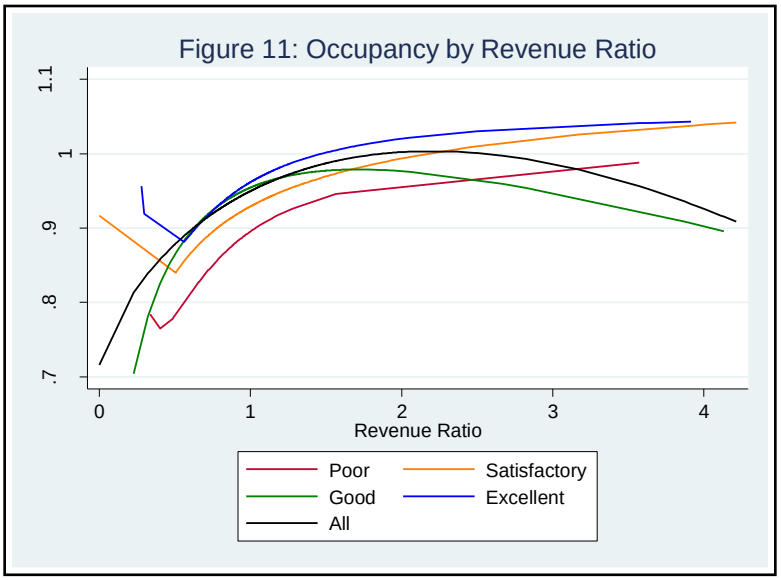
There is an extremely strong positive association between the Repairs Ratio and Gross Potential Rent Ratio, indicating that increases in repairs and maintenance spending is associated with increases in Gross Potential Rent. Among properties in Excellent and Good Conditions, once spending reaches a threshold of approximately one the relationship between the Repairs Ratio and Gross Potential Rent Ratio stabilizes. Properties in Satisfactory and Poor Conditions continue to experience higher Gross Potential Rent Ratios as their Repairs Ratio improves, potentially suggesting that increased maintenance can raise

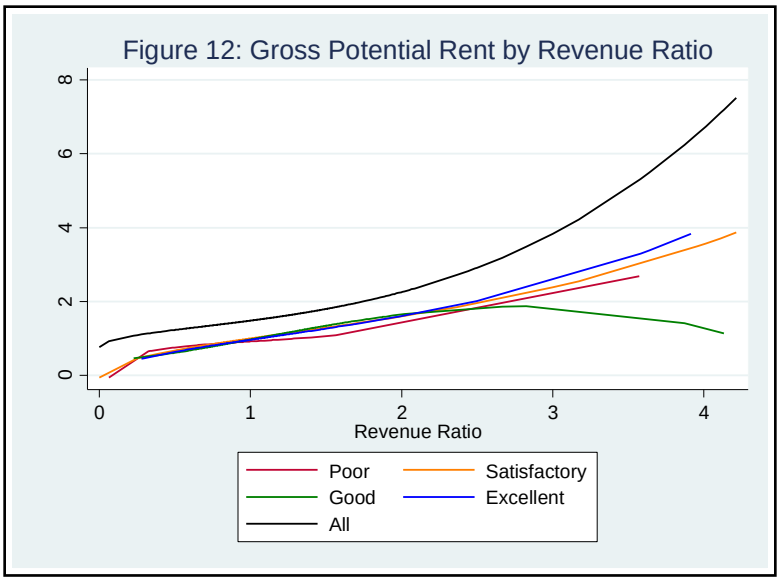


rents at even the worst properties. (Figure 10)

6) Impact of Occupancy and Gross Potential Rent Ratio on Revenue Ratio

The association between Occupancy and Revenue Ratio, and the association between Gross Potential Rent Ratio and Revenue Ratio seems obvious. This sample excludes projects with commercial units so all revenue will flow from rents or ancillary services such as parking and laundry. Those ancillary services contribute a negligible amount to projects in Enterprise's portfolio: an average of 0.33% of total revenue. Therefore, revenue comes almost exclusively from rent, calculated as Rents Charged x Occupancy. Rents charged can be inferred from gross potential rent.



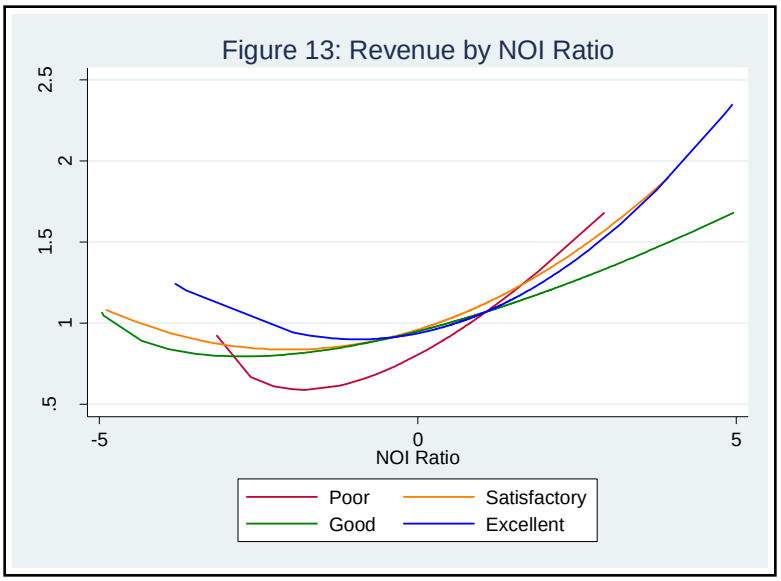


Statistical analysis supported logic. Occupancy and the Gross Potential Rent Ratio were both highly associated with the Revenue Ratio. (Appendix 3, Tables 7 and 8) The correlation held true across Physical Property Conditions. Although Poor Condition had the lowest Occupancy and Gross Potential Rent Ratio, the association with Revenue Ratio was roughly the same as all other Physical Property Conditions. (Figures 11 and

12) The implications are clear. The way a property was maintained impacted its rents and occupancy, which, in turn, impacted its revenue.

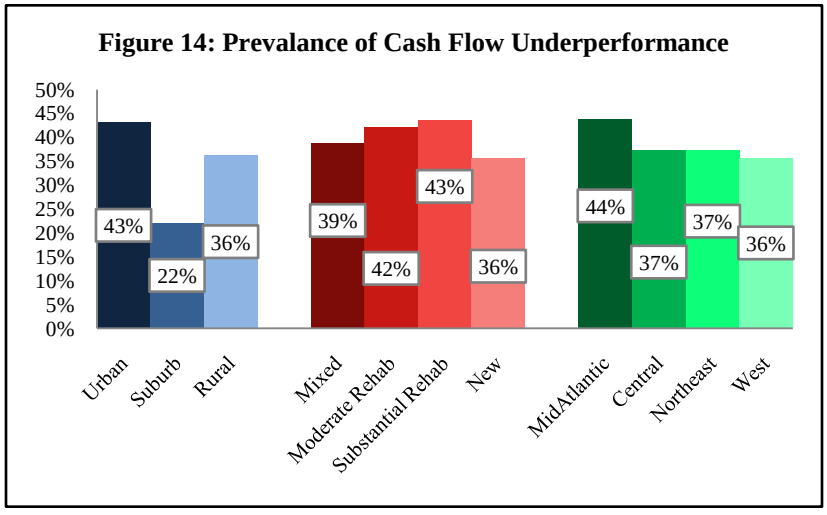
7) Revenue Ratio's Impact on Cash Flow

For the downward spiral to last more than one revolution the poor revenue described above must impact future cash flow. In Section V-2, revenue was identified one of the two main factors impacting NOI. Sixty-two percent of projects with cash flow problems had Revenue Ratios below one, and the statistical association was overwhelming. (Appendix 3, Tables 1 – 4) The association between the Revenue Ratio and NOI Ratio holds constant regardless of Physical Property Condition. Even in properties in Excellent Condition a poor Revenue Ratio will impact NOI. (Figure 13)



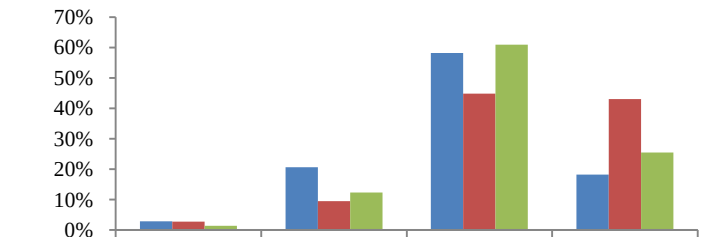
VI. Additional Comments on Findings

Several other variables indicated significant association with cash flow issues. While not directly related to the core research, these factors should be acknowledged in order to better identify and mitigate problem properties in the future.



Urban Locations were far more likely than suburban or rural projects to suffer from poor cash flow (NOI Ratio less than .75). Forty-three percent of urban projects suffered from poor cash flow while just 22% of Suburban Locations had the same problem. (Figure 14)

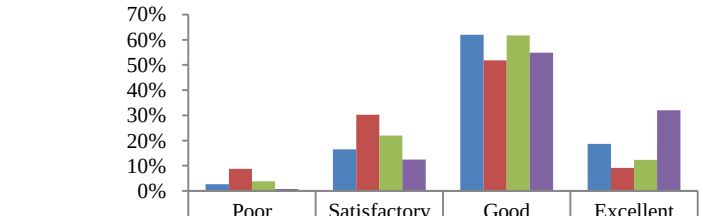
Figure 15: Physical Condition by Location



	Poor	Satisfactory	Good	Excellent
Urban	3%	21%	58%	18%
Suburban	3%	9%	45%	43%
Rural	1%	12%	61%	25%

As expected, financial problems co-occurred with physical problems. Twenty-four percent of Urban Location properties were in Poor or Satisfactory Condition compared with 12% of Suburban and 13% of Rural Location properties. (Figure 15)

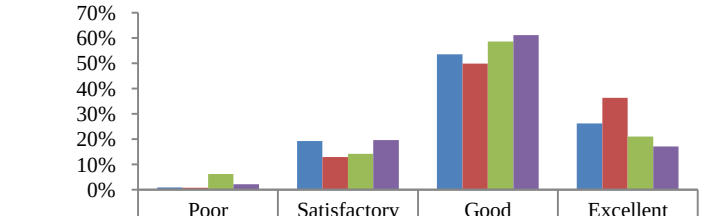
Figure 16: Physical Condition by Construction Type



	Poor	Satisfactory	Good	Excellent
Mixed	3%	17%	62%	19%
Moderate Rehab	9%	30%	52%	9%
Substantial Rehab	4%	22%	62%	12%
New	1%	12%	55%	32%

Rehabilitated sites also struggled. Both Moderate and Substantial Rehabilitations experienced cash flow underperformance of 42 – 43%, while New Construction only experienced difficulties 36% of the time. (Figure 14) As with Location, financial difficulties co-occurred with physical difficulties. Moderate Rehabilitations were in less than Good Condition 39% of the time, and Substantially Rehabilitated properties were in Poor or Satisfactory conditions 26% of the time, compared to just 13% of new construction properties. (Figure 16)

Figure 17: Physical Condition by Region



	Poor	Satisfactory	Good	Excellent
MidAtlantic	1%	19%	54%	26%
Central	1%	13%	50%	36%
Northeast	6%	14%	59%	21%
West	2%	20%	61%	17%

Finally, although most Regions performed similarly, the Mid-Atlantic Region was more likely to experience cash flow problems (44% versus 36-37% in other locations). (Table 14) This did not translate into Physical Property Condition issues. However, the Central Region was somewhat more likely to have properties in Good and Excellent Conditions than other regions (86% versus 78-80% in other regions). (Figure 17)

VII. Discussion

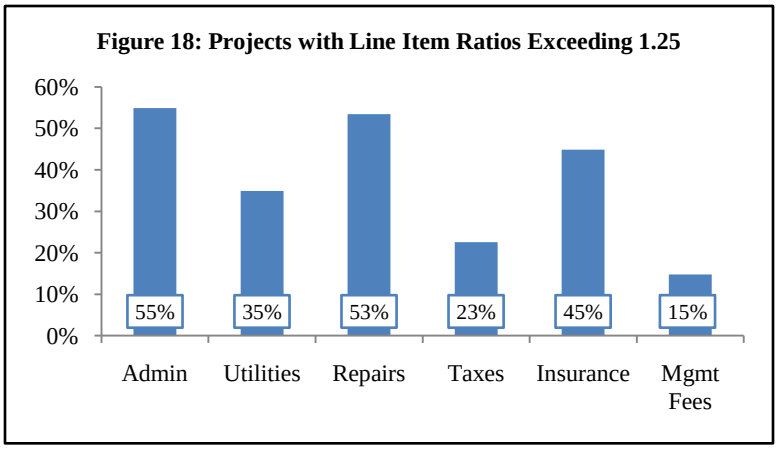
There is no question the LIHTC industry has a cash flow problem. Forty-five percent of Enterprise's portfolio performed below expectations between 2002 and 2007, on par with or even somewhat better than the industry. (Abravanel & Johnson, 1999) (Bratt, Schwartz, Keyes, Stockard, & Vidal, 1998) Because LIHTC investors do not receive their returns from cash flows there was less concern about underperforming properties than there should have been. 2004 reports that incidences of negative cash flow were increasing did ring alarm-bells because negative cash flow can lead to insolvency and loss of credits. (Multi-Housing News, 2004) Negative cash flow doesn't simply appear, however. In Enterprise's portfolio, 60-70% of underperforming properties in any given year had poor cash flow the previous year and between 68% and 84% (depending on the year) of cash-flow negative properties performed poorly the previous year.

Demanding properties operate within a market context without adequately providing for the implications thereof is arguably at the root of the downward spiral identified in this report. All specific issues discussed are manifestations. Those manifestations are important to understand because they are what can be immediately addressed – what must be immediately addressed. However, without considering the root problem any solution will simply be a stop-gap measure.

It is, however, critical to address those manifestations. This report has discussed how poor strategies to manage cash shortfalls exacerbate the problem. The remainder will highlight (1) certain aspects of the underwriting budget that seem to be most associated with initial shortfalls, (2) discuss the POAH model which incorporates several good strategies, (3) reiterate the

importance of maintenance and repairs as a means of maintaining occupancy and gross potential rents, and (4) suggest a proactive approach to physical upkeep.

1) Underwriting for Sufficient Operating Budgets



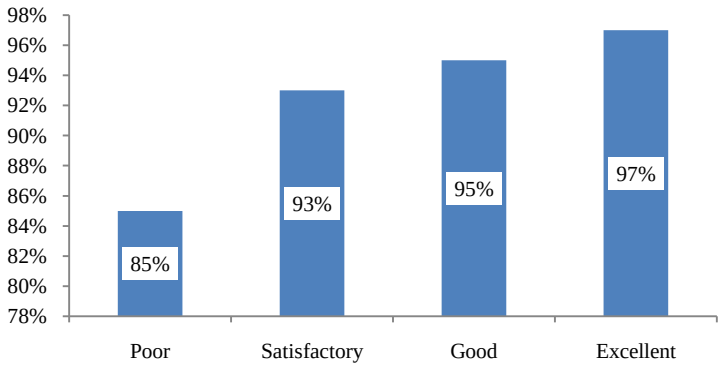
One of the most commonly cited concerns about LIHTC is the extent to which projects operated on extraordinarily thin budgets. "LIHTC projects often are tightly run with operating revenues often just covering operating expenses… Despite incentives to keep net income close to zero, no project can continue indefinitely with expenses exceeding revenues." (Cummings & DiPasquale, 1998) The problem was not absent from Enterprise's portfolio; 88% of projects with cash flow problems experienced cost overruns. Administrative, repairs, and insurance were the three line items which most commonly exceeded their budget. (Figure 18) Per the previous discussion of LIHTC's complexities, underwriters may wish to reevaluate administrative needs with their sponsors. For example, Winn Residential now only hires property managers with four-year degrees because they feel the complexity of the program demands people "be at a level that's much higher professionally than 20 years ago. As a result [they]'re paying a lot more money that [they] used to." (Martin M. , 2009) Appropriate trending of revenue and expense inflators was another commonly cited underwriting concern. (Tatum, 2009)

The last common underwriting complaint was over-leverage. Underwriting for a 1.0 debt DCR is not unusual. (Stegman, 1999) In Enterprise's portfolio, 62% of sample projects had must-pay debt service at some point in the study period. Of those, 76% had a DCR less than one. Addressing over-leverage at a time when credit prices are low and soft debt is scarce will be challenging but it is important to think about when considering overly-thin budgets.

2) Preservation of Affordable Housing's (POAH) Model

POAH has adopted a model that, taken as a whole, is not feasible for most sites. Its composite pieces offer useful guidance, however. "One thing that we do that is very rare," said Executive Director Amy Anthony "is we underwrite for cash flow. Our business plan is premised on cash flow supporting the organization… I do think the ability to manage the ups and downs that inevitably happen is critically linked to having a little bit more cushion when you start... If you can support yourself on your cash flow you're just a lot more stable." (Anthony, 2009)

Figure 19: Occupancy by Property Condition



POAH focuses on acquisition and rehabilitation of occupied Section 8 and 236 properties, which garner greater rental revenue. The parent organization is able to offer soft debt as gap financing to individual properties as needed. (Anthony, 2009) While the lessons of underwriting for cash flow, seeking means of bolstering rental revenue, and maximizing soft debt are broadly applicable, the full model is, of course, less so. In the words of Ann Houston, Executive Director of Chelsea Neighborhood Housing Services "Amy is brilliant and savvy, but her model works because she can cherry-pick Section 8s and she has so much money she can do everything in-house. The rest of us have to do our best with the available gap financing." (Houston, 2009)

3) Importance of Physical Property Condition

The most important implication of LIHTC being a market-based program is that the product must appeal to and compete with the market. When they first reach qualified occupancy, many LIHTC sites are on par with or in better shape than the surrounding market. New construction in particular tends to be high quality and fare well. (McAdie, 2009) Moderate and substantial rehabilitation projects are far more likely to experience problems earlier either because they weren't as well done or because the components, especially the systems, are just older. (Tatum, 2009)

As discussed in Section V.5, the amount invested in repairs and maintenance has a strong association with both Occupancy and the Gross Potential Rent Ratio. As spending falls, Occupancy falls, as does Gross Potential Rent Ratio, presumably as an attempt to raise Occupancy. Furthermore, Occupancy and Gross Potential Rent Ratio are both dramatically lower in properties in Poor Condition (Figures 19). It is thus fair to say that a lack of maintenance has a negative impact on property condition, which in turn impacts rents and occupancy. Since 62% of projects with poor cash flow experienced poor revenue, addressing poor occupancy and rents should be an important goal.

4) A Proactive Approach

Finding money for upkeep may seem daunting particularly in the current financial situation, but in a market-driven program it is critical. A few factors to consider are making certain the underwriting budget is sufficient, prioritizing what needs to be done to professional quality versus what can be done by maintenance crews (e.g. professionals should paint marketing fronts but not back hallways) and making certain there are sufficient provisions for systems replacements, particularly in rehabilitated properties. (Tatum, 2009) Asset Manager Len Tatum advocates a proactive approach to stewardship. For example, reserves could be invested to upgrade systems or marketing fronts before it becomes absolutely necessary. In this way, reserves can be used to enhance the value of the site rather than save it from total collapse. (Tatum, 2009)

5) Conclusion

This is a difficult time for the LIHTC program. While every practitioner interviewed believed it would survive, all believed there would be some change to its structure or magnitude. If it is to remain the force it has been for the past two decades, it is necessary to reevaluate the way deals are structured and recognize the fact that it is no longer to subject projects to market pressures without providing them with appropriate tools.

APPENDIX 1: Enterprise Community Investment Profile

Enterprise Community Investment, Inc.

Enterprise Community Investment, Inc. is a leading real estate investment services company for affordable housing and community development. We provide partners with development capital via equity and debt products, and expertise in community development practices. Enterprise is the industry leader in green affordable housing. In partnership with investors and developers nationwide, we currently invest in communities at a rate of $1 billion a year. Our strategic priorities address critical housing needs.

History

In 1982, Jim and Patty Rouse founded Enterprise Community Partners, Inc. (then named The Enterprise Foundation), with this mission: to see that all low-income people in the United States have the opportunity for fit and affordable housing and to move up and out of poverty into the mainstream of American life.

On March 7, 1984, Rouse, the renowned master developer and champion for affordable housing, formed the financing arm of Enterprise now known as Enterprise Community Investment, Inc. (then named The Enterprise Social Investment Corporation, or ESIC), a socially motivated for-profit company. The financing arm's primary purpose was to fund Enterprise's affordable housing initiatives through the syndication of tax shelter benefits to for-profit corporations, a process Rouse pioneered based on his belief in the power of private initiative and the free enterprise system to promote social good.

However, in 1986 Congress began to overhaul the tax code, and this tax benefit was one of the first it proposed to eliminate. In response, Enterprise successfully led the charge to create an even more attractive vehicle to encourage the private investment of capital for the development and rehabilitation of affordable housing. As a result, a clause was included in the Tax Reform Act of 1986 that created the Low-Income Housing Tax Credit (LIHTC) program—a dollar-for-dollar tax credit for affordable housing investments.

To launch the program, Enterprise solicited corporations to invest in a $50 million account to take advantage of the new tax credits. In January 1987, Fannie Mae became the first to do so, and in May of that year, Fannie Mae and Enterprise announced that work had begun on the first LIHTC funded affordable housing project in the country—the transformation of a downtown Pittsburgh YMCA into a shelter for the homeless called Wood Street Commons. The 16-story facility for temporary and permanent housing included 270 single-room occupancy beds that would rent for between $75 and $150 a month. The project was, according to Rouse, "an outstanding example of how a public-private partnership can work to provide housing for the less fortunate."

The LIHTC program accounts for nearly 90 percent of the nation's affordable housing created today.

Over the past 25 years, Enterprise's commitment to our mission has developed into a comprehensive array of financing tools to support community transformation. Pre-development lending, permanent financing, grants, tax credit equity, as well as development expertise result in quality, affordable housing, mixed-use development, office and commercial real estate projects, and preservation projects. Currently, Enterprise is investing in communities at a rate of $1 billion a year.

Enterprise's LIHTC Program

The Low Income Housing Tax Credit (LIHTC) is a 20-year old federal program that accounts for nearly 90 percent of all affordable rental housing created in the United States today. The LIHTC program has been instrumental in meeting the country's critical affordable housing shortage by stimulating the production or rehabilitation of nearly 2 million affordable rental homes. Enterprise helped write the legislation that created the tax credit program, and is among the leading syndicators of LIHTC equity.

- Raised over $7.2 billion in Low Income Housing Tax Credit equity through more than 95 investment funds

- Financed over 1,600 LIHTC properties totaling more than 93,000 affordable housing units under asset management

We continue to find and structure projects that both meet the company's mission and prudent underwriting standards. In 2007, of the 96 projects that our Investment Committee approved:

- Approximately 46 percent of all deals had no conventional debt
- Another 27 percent included green features
- Nearly 50 percent of all deals reached people earning less than 30 percent of the area median income (AMI) (Enterprise Community Investment, Inc, 2008)

APPENDIX 2: Biographies of Interviewees

Amy S. Anthony, Executive Director, Preservation of Affordable Housing

Amy S. Anthony is President, founder and Executive Director of POAH. One of the nation's foremost experts in housing finance and policy, she has been active in the industry for more than 30 years. Ms. Anthony also founded and serves as President of Housing Investments, Inc., a Boston- based consulting firm which focuses on preserving existing assisted housing around the country. From 1983 to 1990, Ms. Anthony served as Secretary of the Massachusetts Executive Office of Communities and Development, a $600 million Cabinet-level state agency devoted to producing affordable housing and promoting municipal, community, and economic development.

Under her direction, Massachusetts created and implemented innumerable innovative, award-winning programs that produced more than 25,000 homes and have served for decades as models for other states. Ms. Anthony has also played an active role in the development of national housing policy over many years. In 1987, she was named to the National Housing Task Force, the recommendations of which evolved into landmark housing legislation, including the HOME Program.

She served as President of the Council of State Community Affairs Agencies from 1987 to 1990 and as part of President-elect Clinton's HUD Transition Team in 1992. Ms. Anthony was a founding member of the Multifamily Housing Institute and has also served on Fannie Mae's Housing Impact Advisory Council, the Freddie Mac Affordable Housing Advisory Committee and the Boards of the National Equity Fund, the Metropolitan Boston Housing Partnership, and the Women's Institute for Housing and Economic Development. A current member of the Boards of Directors of Homes for America and the Citizens Housing and Planning Association (CHAPA), she is a graduate of Smith College.

Preservation of Affordable Housing

POAH's primary mission is to purchase large, multi-family properties and refinance them for long-term affordability. POAH has already rescued and refinanced more than 4,900 units of

affordable rental housing in eight states and the District of Columbia.

Between 1965 and 1990, $60 billion in federal funding was invested in privately-owned, affordable rental homes for families, the disabled and the elderly. These homes were built in big cities, small towns and rural areas across the country. They were multi-story high-rises and single family bungalows. But all were built according to the same premise: that the government would provide funds to underwrite construction and operating costs, and in return, owners would promise that rents would be affordable to low income families and seniors on fixed incomes for the duration of the fixed financing period. Now more than four decades have passed, and the financial notes which built this housing are reaching "paid in full" status. With the expiration of each financing agreement, the leverage for keeping rents affordable is lost.

POAH seeks to intervene and forestall such losses, preserving this valuable and fragile asset for future generations. POAH also uses its preservation transactions to demonstrate how creative thinking and innovative financing can combine for the best outcomes. To the professionals at POAH, a deal is not just a deal. Navigating the complicated and highly regulated world of affordable housing finance is POAH's proven route toward the goal of preserving and protecting these valuable and vulnerable homes for the future for those in need. (Preservation of Affordable Housing)

Michael Martin, Senior Vice President, Winn Residential

Michael R. Martin, Senior Vice President, has been in the property management business for 25 years. As Senior Vice President of WinnResidential, he is responsible for ongoing property management operations for more than 9,000 apartments as well as coordinating management and development opportunities with WinnDevelopment. Mr. Martin has extensive experience with conventionally financed, mixed income and assisted family and elderly apartment communities in suburban and inner city settings. Additional experience includes working with public housing authorities, state housing finance agencies, the United States Department of Housing and Urban Development, third party property owners and a variety of non-profit and resident controlled housing development entities. Mr. Martin is directly responsible for all aspects of property

management oversight including agency reporting, profit and loss, budgeting, personnel, training, maintenance/capital planning, administrative procedures and compliance. Prior to returning to the Winn companies in 2002, Mr. Martin was Senior Vice President of Gatehouse Management, Inc. In this position his responsibilities included direct operating control of Gatehouse Management and management oversight of the design, development, leasing and operation of newly constructed LIHTC communities in Florida, California, Rhode Island and Massachusetts totaling more than 4,000 apartment homes.

Winn Companies

Headquartered in Boston's Historic Faneuil Hall, WinnCompanies develops, acquires and manages multi-family and mixed income properties throughout the United States. Since 1971, WinnDevelopment has acquired and developed real estate holdings valued in excess of $1.5 billion. WinnCommercial is involved in the development and management of office, retail, parking, hotel, marina and mixed-use properties throughout New England. WinnResidential's multi-family management portfolio includes over 70,000 residences across the country. As diverse as WinnCompanies holdings may be, our 2,000 employees are united by a commitment to excellence and a common set of principles upon which the organization was founded more than 35 years ago.

WinnResidential

WinnResidential employees are driven by a single goal; to significantly raise the standards of residential property management - one interaction at a time. A company of problem solvers, WinnResidential constantly works at creating innovative solutions. Whether it’s crafting a successful marketing campaign to raise the profile of a property in a competitive market or creating on-site daycare to provide better opportunities for residents in privatized public housing, WinnResidential has earned a national reputation for creating "Communities of Quality" with a combination of fresh thinking and hard work. (Winn Companies)

Geoffrey MacAdie, Director of Portfolio Management, Massachusetts Housing Partnership

Geoff MacAdie has more than 20 years' experience in real estate and affordable housing. He joined MHP's staff in 1998 and was named Director of Portfolio Management in 2004. He had previously managed a large affordable housing portfolio in Maine for the Insignia Residential Group and worked as an asset manager for residential properties at Fleet/Recoll. He has also managed his own real estate management consulting firm. Geoff has an MS in Urban Affairs/City Planning from Boston University and a bachelor's degree in urban affairs from the University of Connecticut. (Massachusetts Housing Partnership)

Massachusetts Housing Partnership

The Massachusetts Housing Partnership (MHP) is a statewide public non-profit affordable housing organization that works in concert with the Governor and the state Department of Housing and Community Development to help increase the supply of affordable housing in Massachusetts.

MHP was established in 1985 to increase the state's overall rate of housing production and find creative new solutions to address the need for affordable housing. In 1990, the state legislature took that premise to heart, becoming the first and only state in the nation to pass an interstate banking act that requires companies that acquire Massachusetts banks to make funds available to MHP for affordable housing. (Massachusetts Housing Partnership)

Len Tatum, Real Estate Policy and Asset Management Consultant

Len is a real estate asset management and policy consultant and practitioner for nonprofit developers and property management operations across the country. He has spent more than 25 years in the field of real estate and investments. His current focus is with “property repositioning” and maximizing portfolio performance through service delivery improvements, capital planning, green and sustainable design, innovative marketing and debt restructuring. Len is also active coaching groups to prepare and execute tax exit strategies for tax credit financed properties.

Prior to being a consultant, Mr. Tatem was the Director of Finance for Harvard University's Real Estate Corporation. This $500 million (1995 dollars) non-academic portfolio included market rate, rent control and subsidized housing, hotels, warehouse and retail space and office buildings. He also was responsible for the negotiation of more than $40 million worth of service contracts annually in support of both its non-profit and for profit management companies. In addition, Len supported the organization's development and construction management department by conducting marketing and feasibility studies. He was also involved with securing 501c3 bond financing in support of construction projects at Harvard University and Boston College.

Len's business relationships include both large and small, active community development corporations and various sized non-profits interested in building, preserving and managing affordable housing and smart growth oriented properties. He concentrates in creating organizational capacity through one-on-one mentoring as well as providing lectures and training on a variety of topics. Len has contributed case studies to the Consortium for Housing and Asset Management's (CHAM) Advanced Asset Management and has assisted in the development of their curriculum. He is also a frequent speaker, trainer and presenter for many organizations including the New Hampshire Housing, Georgia State Trade Association for Nonprofit Developers (GSTAND), The State of Washington, Stewards of Affordable Housing for the Future (SAHF), LISC, Enterprise Community Partners and NeighborWorks® America. He has been the architect of asset plans to restructure and reposition properties and portfolios in various areas of the United States.

In addition to having a Master's Degree concentrating in Administration, Planning and Social Policy from Harvard University, Mr. Tatem has a Bachelor of Science concentrating in Finance from the University of Rhode Island. He has received certifications as a National Compliance Specialist (NCP®) and CHAM's Non-Profit Housing Management Specialist (NHMS®). (Tatum L. , 2008)

APPENDIX 3: Regression Tables

NB: Equal consideration was given to coefficients and z / t-scores in most instances. In very general terms, the coefficient is a prediction about the magnitude and direction of the relationship between the independent and dependent variable. The standard error measures the accuracy of that prediction, and the z-score (or t-score) is the coefficient / standard error. A z-score greater than or equal to the absolute value of 1.98 indicates the relationship between the variables can be confirmed with 95% certainty.

A common shortcut is to consider only the z-score (or t-score). This approach has not been used here because a very small coefficient with a very small error could yield a large z-score. This only confirms that some relationship is certain, not that it is an important relationship. By considering both the significance of the z-score and the magnitude of the coefficient the problem is easily avoided.

TABLE 1: Negative Cash Flow Logistic Regression

Random Effects Logistic Regression			Number of observations		1940	
Group Variable:	(i): Project_ID		Number of groups		875	
Random Effects	u_i ~ Gaussian		Observations per group: min		1	
				Average:	2.2	
Log likelihood	-706.92529			Max:	6	
Prob > chi2	0			Wald chi2(20)	330.38	

Negative Cash Flow	**Coefficient**	**Standard Error**	**z**	**P>z**	**95% Confidence Interval**	
Revenue Ratio	-16.4414	1.560384	-10.54	0	-19.4997	-13.3831
Operating Expense Ratio	8.905952	0.565224	15.76	0	7.798133	10.01377
Gross Potential Rent Ratio	1.583774	1.509069	1.05	0.294	-1.37395	4.541495
Vacancies / Concessions Ratio	0.300587	0.115694	2.6	0.009	0.073831	0.527343
Occupancy	0.107884	1.360273	0.08	0.937	-2.5582	2.773971
Age	-5.5E-05	0.000101	-0.54	0.589	-0.00025	0.000144
Family	0.96978	0.692121	1.4	0.161	-0.38675	2.326313
Senior	0.067656	0.71448	0.09	0.925	-1.3327	1.46801
Native American	0.841819	1.257046	0.67	0.503	-1.62195	3.305584
Special Needs	0.080762	0.294922	0.27	0.784	-0.49727	0.658798
SRO	0.141639	0.652761	0.22	0.828	-1.13775	1.421027
Support Services	0.562115	0.256449	2.19	0.028	0.059485	1.064745
Region Northeast	-0.2098	0.406201	-0.52	0.606	-1.00594	0.586343
Region Mid-Atlantic	1.347742	0.330072	4.08	0	0.700813	1.994671
Region Central	1.419147	0.346329	4.1	0	0.740354	2.09794
Region West	Dropped because of collinearity. Strong positive association.					
Construction New	Dropped because of collinearity. Strong positive association.					
Construction Moderate Rehab	0.493779	0.348576	1.42	0.157	-0.18942	1.176975
Construction Substantial Rehab	1.053432	0.292979	3.6	0	0.479204	1.627661
Construction Mixed	0.779389	0.524468	1.49	0.137	-0.24855	1.807328
Location Suburban	Dropped because of collinearity. Small positive association.					
Location Urban	0.593689	0.357132	1.66	0.096	-0.10628	1.293655
Location Rural	1.600417	0.424942	3.77	0	0.767547	2.433287
_cons	-4.28915	3.422628	-1.25	0.21	-10.9974	2.419075
/lnsig2u	1.113288	0.133162	0.852295		1.374281	
sigma_u	1.744807	0.116171	1.531346		1.988023	
Rho	0.48062	0.033241	0.416161		0.54573	
Likelihood ratio test of rho=0: chibar2(01)		90.9		Prob >= chibar2 = 0.000		

TABLE 2: Negative Cash Flow Logistic Regression with Line Item Expenses						
Random Effects Logistic Regression			Number of observations		1223	
Group Variable:	(i): Project_ID		Number of groups		561	
Random Effects	u_i ~ Gaussian		Observations per group: min		1	
				Average:	2.2	
Log likelihood	-503.03064			Max:	6	
Prob > chi2	0			Wald chi2(20)	184.24	
Negative Cash Flow	**Coefficient**	**Standard Error**	**z**	**P>z**	**95% Confidence Interval**	
Revenue Ratio	-12.3138	1.856166	-6.63	0	-15.9518	-8.6758
Administrative Ratio	0.04923	0.017473	2.82	0.005	0.014984	0.083475
Utilities Ratio	0.515147	0.136052	3.79	0	0.248491	0.781803
Repairs Ratio	1.100868	0.1584	6.95	0	0.79041	1.411325
Taxes Ratio	0.305394	0.081322	3.76	0	0.146007	0.464781
Insurance Ratio	0.286614	0.122418	2.34	0.019	0.046678	0.52655
Management Fee Ratio	0.597628	0.354815	1.68	0.092	-0.0978	1.293052
Other Expenses Ratio	0.035275	0.021034	1.68	0.094	-0.00595	0.076501
Gross Potential Rent Ratio	4.069339	1.938995	2.1	0.036	0.26898	7.869699
Vacancies / Concessions Ratio	0.455282	0.151239	3.01	0.003	0.158859	0.751706
Occupancy	-0.73292	1.568703	-0.47	0.64	-3.80752	2.341684
Age	-5.6E-05	0.000137	-0.41	0.685	-0.00032	0.000213
Family	1.379373	1.055146	1.31	0.191	-0.68868	3.447421
Senior	0.375436	1.103125	0.34	0.734	-1.78665	2.537521
Native American	-1.11397	2.361125	-0.47	0.637	-5.74169	3.513747
Special Needs	-0.00574	0.378002	-0.02	0.988	-0.74661	0.73513
SRO	0.602227	0.987034	0.61	0.542	-1.33232	2.536778
Support Services	0.509493	0.31722	1.61	0.108	-0.11225	1.131232
Region Northeast	-0.77962	0.50488	-1.54	0.123	-1.76916	0.20993
Region Mid-Atlantic	1.021437	0.342209	2.98	0.003	0.35072	1.692154
Region Central	1.535173	0.492011	3.12	0.002	0.57085	2.499496
Region West	Dropped because of collinearity. Strong positive association.					
Construction New	Dropped because of collinearity. Strong positive association.					
Construction Moderate Rehab	-0.03831	0.432835	-0.09	0.929	-0.88665	0.810034
Construction Substantial Rehab	1.025847	0.355764	2.88	0.004	0.328563	1.723131
Construction Mixed	0.39474	0.60834	0.65	0.516	-0.79758	1.587064
Location Suburban	Dropped because of collinearity. Small positive association.					
Location Urban	1.113992	0.443089	2.51	0.012	0.245554	1.982431
Location Rural	1.88782	0.504903	3.74	0	0.89823	2.877411
_cons	-2.5064	4.930145	-0.51	0.611	-12.1693	7.15651
/lnsig2u	1.139954	0.15696	0.832318		1.44759	

sigma_u	1.768226	0.13877	1.516127	2.062244
Rho	0.487279	0.039215	0.411316	0.563835
Likelihood ratio test of rho=0: chibar2(01)	72.76		Prob >= chibar2 = 0.000	

TABLE 3: NOI Ratio GLS Regression

Random Effects GLS Regression		Number of observations	2961
Group Variable:	(i): Project_ID	Number of groups	888
R-squared within	0.1122	Observations per group: min	1
Between	0.0607	Average	3.3
Overall	0.0762	Max	6
Random Effects	u_i ~ Gaussian	Wald chi2(20)	316.6
corr(u_i, X)	= 0 (assumed)	Prob > chi2	0

NOI Ratio	**Coefficient**	**Standard Error**	**z**	**P>z**	**95% Confidence Interval**	
Revenue Ratio	5.024227	0.352502	14.25	0	4.333336	5.715118
Operating Expense Ratio	-1.95515	0.193627	-10.1	0	-2.33465	-1.57565
Gross Potential Rent Ratio	-1.28896	0.486666	-2.65	0.008	-2.24281	-0.33511
Vacancies / Concessions Ratio	-0.0077	0.049522	-0.16	0.876	-0.10476	0.089365
Occupancy	-0.82239	0.700229	-1.17	0.24	-2.19481	0.550035
Age	2.53E-05	0.000126	0.2	0.841	-0.00022	0.000273
Family	0.791678	1.098483	0.72	0.471	-1.36131	2.944664
Senior	0.753644	1.121778	0.67	0.502	-1.445	2.952289
Native American	-0.30921	1.278116	-0.24	0.809	-2.81428	2.195849
Special Needs	0.418586	0.421639	0.99	0.321	-0.40781	1.244982
SRO	-0.64302	1.026602	-0.63	0.531	-2.65512	1.369084
Support Services	-0.46599	0.38311	-1.22	0.224	-1.21687	0.284888
Region Northeast	0.287036	0.494567	0.58	0.562	-0.6823	1.256369
Region Mid-Atlantic	-0.29073	0.435664	-0.67	0.505	-1.14461	0.563157
Region Central	-0.11859	0.536009	-0.22	0.825	-1.16915	0.931965
Region West	Dropped because of collinearity. Strong positive association.					
Construction New	Dropped because of collinearity. Strong positive association.					
Construction Moderate Rehab	0.039308	0.531341	0.07	0.941	-1.0021	1.080718
Construction Substantial Rehab	-0.16277	0.448004	-0.36	0.716	-1.04084	0.715305
Construction Mixed	-0.02718	0.845275	-0.03	0.974	-1.68389	1.629528
Location Suburban	Dropped because of collinearity. Small positive association.					
Location Urban	-0.15244	0.491956	-0.31	0.757	-1.11666	0.811773
Location Rural	-0.20819	0.569924	-0.37	0.715	-1.32522	0.908841
_cons	-1.43269	4.821336	-0.3	0.766	-10.8823	8.016954
/lnsig2u	4.689271					
sigma_u	1.987892					
Rho	0.847665	(fraction of variance due to u_i)				

TABLE 4: NOI Ratio GLS Regression with Expense Line Items

Random Effects GLS Regression		Number of Observations	1873
Group Variable:	(i): Project_ID	Number of groups	578
R-squared within	0.1601	Observations per group: min	1
Between	0.1725	Average	3.2
Overall	0.1599	Max	6
Random Effects	u_i ~ Gaussian	Wald chi2(20)	355.67
corr(u_i, X)	= 0 (assumed)	Prob > chi2	0

NOI Ratio	**Coefficient**	**Standard Error**	**z**	**P>z**	**95% Confidence Interval**	
Revenue Ratio	4.351869	0.362438	12.01	0	3.641503	5.062235
Administrative Ratio	0.004221	0.005533	0.76	0.445	-0.00662	0.015065
Utilities Ratio	-0.10361	0.058144	-1.78	0.075	-0.21757	0.010347
Repairs Ratio	-0.33845	0.052698	-6.42	0	-0.44174	-0.23517
Taxes Ratio	-0.0087	0.019432	-0.45	0.654	-0.04679	0.029386
Insurance Ratio	0.046928	0.055734	0.84	0.4	-0.06231	0.156165
Management Fee Ratio	-0.47439	0.128348	-3.7	0	-0.72595	-0.22284
Other Expenses Ratio	-0.00648	0.009868	-0.66	0.511	-0.02583	0.012857
Gross Potential Rent Ratio	-1.95276	0.486296	-4.02	0	-2.90588	-0.99964
Vacancies / Concessions Ratio	-0.16634	0.04197	-3.96	0	-0.2486	-0.08408
Occupancy	-0.9733	0.576268	-1.69	0.091	-2.10277	0.15616
Age	2.25E-05	5.93E-05	0.38	0.705	-9.4E-05	0.000139
Family	0.728107	0.543722	1.34	0.181	-0.33757	1.793783
Senior	0.66069	0.558424	1.18	0.237	-0.4338	1.755181
Native American	-0.90946	0.820327	-1.11	0.268	-2.51728	0.698349
Special Needs	-0.21064	0.193756	-1.09	0.277	-0.5904	0.169113
SRO	-0.2898	0.518263	-0.56	0.576	-1.30557	0.725979
Support Services	-0.25046	0.164848	-1.52	0.129	-0.57355	0.07264
Region Northeast	-0.46553	0.23437	-1.99	0.047	-0.92488	-0.00617
Region Mid-Atlantic	-0.54238	0.175704	-3.09	0.002	-0.88675	-0.19801
Region Central	-0.32791	0.220803	-1.49	0.138	-0.76068	0.104852
Region West	Dropped because of collinearity. Strong positive association.					
Construction New	Dropped because of collinearity. Strong positive association.					
Construction Moderate Rehab	0.05622	0.221795	0.25	0.8	-0.37849	0.49093
Construction Substantial Rehab	-0.28505	0.189383	-1.51	0.132	-0.65623	0.086131
Construction Mixed	0.101432	0.317728	0.32	0.75	-0.5213	0.724167
Location Suburban	Dropped because of collinearity. Small positive association.					
Location Urban	-0.11249	0.206223	-0.55	0.585	-0.51668	0.291698
Location Rural	-0.16092	0.231564	-0.69	0.487	-0.61478	0.292935
_cons	0.191404	2.313763	0.08	0.934	-4.34349	4.726295

/lnsig2u	1.37516
sigma_u	1.39475
Rho	0.492928 (fraction of variance due to u_i)

TABLE 5: Negative Cash Flow Logistic Regression Controlling for Property Condition (2007 only)						
Logistic Regression			Number of observations		701	
Log likelihood	-244.54606		LR chi2(26)		409.19	
			Prob>chi2		0	
			Psudo R2		.4555	
Negative Cash Flow	**Coefficient**	**Standard Error**	**z**	**P>z**	**95% Confidence Interval**	
Revenue Ratio	-10.4853	1.818327	-5.77	0	-14.0492	-6.92145
Operating Expense Ratio	7.050325	0.728531	9.68	0	5.622431	8.47822
Gross Potential Rent Ratio	-3.11144	1.91546	-1.62	0.104	-6.86568	0.642789
Vacancies / Concessions Ratio	0.524258	0.151418	3.46	0.001	0.227485	0.821032
Occupancy	2.062358	1.75985	1.17	0.241	-1.38688	5.5116
Age	4.94E-05	0.000112	0.44	0.658	-0.00017	0.000268
Family	0.424221	0.788488	0.54	0.591	-1.12119	1.969629
Senior	-0.20246	0.817469	-0.25	0.804	-1.80467	1.399752
Native American	2.106649	1.206037	1.75	0.081	-0.25714	4.470439
Special Needs	0.235066	0.292322	0.8	0.421	-0.33788	0.808007
SRO	-0.14904	0.725524	-0.21	0.837	-1.57104	1.272965
Support Services	0.161166	0.264751	0.61	0.543	-0.35774	0.68007
Region Northeast	-0.32525	0.514554	-0.63	0.527	-1.33375	0.68326
Region Mid-Atlantic	1.327337	0.37118	3.58	0	0.599838	2.054836
Region Central	1.233768	0.369808	3.34	0.001	0.508957	1.958578
Region West	Dropped because of collinearity. Strong positive association.					
Construction New	Dropped because of collinearity. Strong positive association.					
Construction Moderate Rehab	0.174295	0.397983	0.44	0.661	-0.60574	0.954328
Construction Substantial Rehab	0.932637	0.316341	2.95	0.003	0.31262	1.552654
Construction Mixed	0.433738	0.58543	0.74	0.459	-0.71368	1.581159
Location Suburban	Dropped because of collinearity. Small positive association.					
Location Urban	0.23563	0.368372	0.64	0.522	-0.48637	0.957627
Location Rural	1.181979	0.433702	2.73	0.006	0.331939	2.032019
Condition Excellent	1.47462	1.557828	0.95	0.344	-1.57867	4.527907
Condition Good	1.594424	1.538923	1.04	0.3	-1.42181	4.610657
Condition Satisfactory	2.339273	1.565514	1.49	0.135	-0.72908	5.407625
Condition Poor	2.371681	1.861638	1.27	0.203	-1.27706	6.020424
_cons	-7.06131	4.206043	-1.68	0.093	-15.305	1.182384

TABLE 6: NOI Ratio Regression Controlling for Property Condition (2007 only)							
Source	SS	Df	MS	Number of observations			706
Model	1401.736	24	58.40565	F(24, 681)			2.01
Residual	19766.34	681	29.02547	Prob > F			0.003
Total	21168.08	705	30.02565	R-squared			0.0662
				Adj R-squared			0.0333
				Root MSE			5.3875
NOI Ratio	**Coefficient**	**Standard Error**		**t**	**P>t**	**95% Confidence Interval**	
Revenue Ratio	5.155245	1.666676		3.09	0.002	1.882804	8.427686
Operating Expense Ratio	-3.03855	0.679327		-4.47	0	-4.37237	-1.70472
Gross Potential Rent Ratio	0.553851	2.063922		0.27	0.789	-3.49857	4.606267
Vacancies / Concessions Ratio	-0.14367	0.19714		-0.73	0.466	-0.53074	0.243408
Occupancy	-0.23013	2.938755		-0.08	0.938	-6.00024	5.539974
Age	-0.000022	0.00018		-0.12	0.901	-0.00038	0.000331
Family	0.75734	1.44489		0.52	0.6	-2.07964	3.594315
Senior	0.802951	1.489548		0.54	0.59	-2.12171	3.727609
Native American	-0.69914	1.547644		-0.45	0.652	-3.73787	2.339589
Special Needs	0.614184	0.516717		1.19	0.235	-0.40037	1.628735
SRO	-0.42749	1.339942		-0.32	0.75	-3.05841	2.203419
Support Services	-0.4537	0.48005		-0.95	0.345	-1.39626	0.488853
Region Northeast	0.280678	0.647475		0.43	0.665	-0.99061	1.551964
Region Mid-Atlantic	-0.26933	0.554142		-0.49	0.627	-1.35736	0.818704
Region Central	0.112762	0.699558		0.16	0.872	-1.26079	1.486311
Region West	Dropped because of collinearity. Strong positive association.						
Construction New	Dropped because of collinearity. Strong positive association.						
Construction Moderate Rehab	-0.01786	0.706797		-0.03	0.98	-1.40562	1.369904
Construction Substantial Rehab	-0.1052	0.586788		-0.18	0.858	-1.25734	1.046927
Construction Mixed	-0.03136	1.120334		-0.03	0.978	-2.23108	2.168363
Location Suburban	Dropped because of collinearity. Small positive association.						
Location Urban	-0.15244	0.491956		-0.31	0.757	-1.11666	0.811773
Location Rural	-0.20819	0.569924		-0.37	0.715	-1.32522	0.908841
Condition Excellent	-0.12957	0.611723		-0.21	0.832	-1.33066	1.071521
Condition Good	-0.21205	0.7132		-0.3	0.766	-1.61238	1.188286
Condition Satisfactory	0.192406	1.475855		0.13	0.896	-2.70537	3.090179
Condition Poor	0.209262	1.434798		0.15	0.884	-2.6079	3.026421
_cons	1.528863	1.52363		1	0.316	-1.46271	4.520441

TABLE 7: Revenue Ratio GLS Regression						
Random Effects GLS Regression			Number of observations		3882	
Group Variable:	(i): Project_ID		Number of groups		962	
R-squared within		0.4436	Observations per group: min		1	
Between		0.8069	Average		4	
Overall		0.693	Max		6	
Random Effects	u_i ~ Gaussian		Wald chi2(20)		7250.96	
corr(u_i, X)	= 0 (assumed)		Prob > chi2		0	
Revenue Ratio	**Coefficient**	**Standard Error**	**z**	**P>z**	**95% Confidence Interval**	
Gross Potential Rent Ratio	0.943065	0.011719	80.47	0	0.920096	0.966034
Occupancy	0.349092	0.031621	11.04	0	0.287117	0.411068
Age	1.68E-05	2.56E-06	6.56	0	1.18E-05	2.18E-05
Family	-0.01776	0.017775	-1	0.318	-0.0526	0.017073
Senior	-0.02674	0.018165	-1.47	0.141	-0.06234	0.008867
Native American	0.048027	0.019167	2.51	0.012	0.010461	0.085593
Special Needs	-0.0056	0.007388	-0.76	0.448	-0.02008	0.008879
SRO	-0.01967	0.016606	-1.18	0.236	-0.05221	0.012881
Support Services	0.012164	0.006533	1.86	0.063	-0.00064	0.024968
Region Mid-Atlantic	0.024866	0.008407	2.96	0.003	0.008389	0.041344
Region Central	0.019398	0.010477	1.85	0.064	-0.00114	0.039931
Region West	0.015659	0.008258	1.9	0.058	-0.00053	0.031846
Region Northeast	Dropped because of collinearity. No association.					
Construction Substantial Rehab	Dropped because of collinearity. No association.					
Construction Moderate Rehab	-0.00742	0.010258	-0.72	0.47	-0.02752	0.012691
Construction Mixed	-0.01429	0.014362	-0.99	0.32	-0.04243	0.013863
Construction New	0.000479	0.0075	0.06	0.949	-0.01422	0.015179
Location Suburban	Dropped because of collinearity. No association.					
Location Urban	-0.0004	0.008007	-0.05	0.96	-0.01609	0.015291
Location Rural	-0.00484	0.009362	-0.52	0.605	-0.02319	0.013505
_cons	-0.45868	0.082776	-5.54	0	-0.62092	-0.29645
/lnsig2u	0.042058					
sigma_u	0.131292					
Rho	0.093067	(fraction of variance due to u_i)				

TABLE 8: Revenue Ratio Regression Controlling for Property Condition (2007 only)						
Source	SS	Df	MS	Number of observations		713
Model	42.88789	24	1.786995	F(24, 681)		91.42
Residual	13.44803	688	0.019547	Prob > F		0
Total	56.33592	712	0.079123	R-squared		0.7613
				Adj R-squared		0.753
				Root MSE		0.13981
Revenue Ratio	**Coefficient**	**Standard Error**	**t**	**P>t**	**95% Confidence Interval**	
Gross Potential Rent Ratio	0.989702	0.022593	43.81	0	0.945342	1.034061
Occupancy	0.275321	0.066904	4.12	0	0.14396	0.406683
Age	0.000017	4.94E-06	3.43	0.001	7.26E-06	2.67E-05
Family	-0.03027	0.036677	-0.83	0.409	-0.10229	0.04174
Senior	-0.03479	0.03794	-0.92	0.359	-0.10928	0.039701
Native American	0.077804	0.040202	1.94	0.053	-0.00113	0.156738
Special Needs	0.013063	0.013539	0.96	0.335	-0.01352	0.039645
SRO	-0.03369	0.033795	-1	0.319	-0.10005	0.03266
Support Services	-0.00924	0.012414	-0.74	0.457	-0.03361	0.015137
Region Mid-Atlantic	0.03508	0.017083	2.05	0.04	0.001539	0.068621
Region Central	0.010748	0.021335	0.5	0.615	-0.03114	0.052638
Region West	0.020487	0.016722	1.23	0.221	-0.01235	0.053319
Region Northeast	Dropped because of collinearity. No association.					
Construction Substantial Rehab	Dropped because of collinearity. No association.					
Construction Moderate Rehab	-0.02592	0.019417	-1.34	0.182	-0.06404	0.012201
Construction Mixed	-0.02433	0.030146	-0.81	0.42	-0.08352	0.03486
Construction New	-0.00797	0.015154	-0.53	0.599	-0.03772	0.021785
Location Suburban	Dropped because of collinearity. No association.					
Location Urban	-0.02174	0.038464	-0.57	0.572	-0.09726	0.053784
Location Rural	-0.01228	0.039456	-0.31	0.756	-0.08975	0.065191
Condition Excellent	-0.02087	0.037238	-0.56	0.575	-0.09399	0.052239
Condition Good	0.071304	0.058912	1.21	0.227	-0.04437	0.186973
Condition Satisfactory	-0.35614	0.175561	-2.03	0.043	-0.70084	-0.01144
Condition Poor	-0.02174	0.038464	-0.57	0.572	-0.09726	0.053784
_cons	-0.01228	0.039456	-0.31	0.756	-0.08975	0.065191

TABLE 9: Operating Expense Ratio GLS Regression						
Random Effects GLS Regression			Number of observations		3876	
Group Variable:	(i): Project_ID		Number of groups		961	
R-squared within		0.0003	Observations per group: min		1	
Between		0.0546	Average		4	
Overall		0.0415	Max		6	
Random Effects	u_i ~ Gaussian		Wald chi2(20)		57.19	
corr(u_i, X)	= 0 (assumed)		Prob > chi2		0	
Operating Expense Ratio	**Coefficient**	**Standard Error**	**z**	**P>z**	**95% Confidence Interval**	
Occupancy	.00775E	.00676E	1.15	0.251	-0.05497	0.209987
Age	-.000827	.000930	-0.89	0.374	-2.7E-05	9.96E-06
Family	0.011443	0.070983	0.16	0.872	-0.12768	0.150568
Senior	-0.04535	0.072295	-0.63	0.53	-0.18705	0.096342
Native American	0.074441	0.078857	0.94	0.345	-0.08012	0.228999
Special Needs	0.001481	0.027491	0.05	0.957	-0.0524	0.055363
SRO	-0.04648	0.067005	-0.69	0.488	-0.17781	0.084848
Support Services	0.046299	0.025168	1.84	0.066	-0.00303	0.095628
Region Mid-Atlantic	-0.00867	0.032289	-0.27	0.788	-0.07196	0.054611
Region Central	-0.05065	0.039316	-1.29	0.198	-0.12771	0.026406
Region West	0.017698	0.031736	0.56	0.577	-0.0445	0.079899
Region Northeast	Dropped because of collinearity. No association.					
Construction Substantial Rehab	Dropped because of collinearity. No association.					
Construction Moderate Rehab	-0.03308	0.03902	-0.85	0.397	-0.10956	0.043395
Construction Mixed	-0.01485	0.056487	-0.26	0.793	-0.12556	0.095863
Construction New	0.011628	0.028818	0.4	0.687	-0.04485	0.068111
Location Suburban	Dropped because of collinearity. No association.					
Location Urban	0.073314	0.03122	2.35	0.019	0.012123	0.134505
Location Rural	-0.03902	0.036142	-1.08	0.28	-0.10985	0.031822
_cons	1.140964	0.314374	3.63	0	0.524803	1.757125
sigma_u	0.290727					
sigma_e	0.240402					
rho	0.593908	(fraction of variance due to u_i)				

TABLE 10: Operating Expense Ratio Regression Controlling for Property Condition (2007 only)						
Source	SS	Df	MS	Number of observations		712
Model	9.45723	23	0.411184	F(24, 681)		2.43
Residual	116.5694	688	0.169432	Prob > F		0.0002
Total	126.0266	711	0.177253	R-squared		0.075
				Adj R-squared		0.0441
				Root MSE		0.41162
Revenue Ratio	**Coefficient**	**Standard Error**	**t**	**P>t**	**95% Confidence Interval**	
Occupancy	0.711649	0.194593	3.66	0	0.329581	1.093716
Age	-4.35E-06	1.46E-05	-0.3	0.765	-3.3E-05	2.42E-05
Family	-0.02731	0.109959	-0.25	0.804	-0.2432	0.188589
Senior	-0.062	0.113389	-0.55	0.585	-0.28463	0.160629
Native American	0.059626	0.118216	0.5	0.614	-0.17248	0.291732
Special Needs	0.040003	0.039827	1	0.316	-0.0382	0.118201
SRO	-0.08018	0.101975	-0.79	0.432	-0.2804	0.120037
Support Services	0.030255	0.036529	0.83	0.408	-0.04147	0.101976
Region Mid-Atlantic	0.017513	0.050131	0.35	0.727	-0.08091	0.11594
Region Central	-0.04098	0.062272	-0.66	0.511	-0.16325	0.081288
Region West	0.020111	0.049208	0.41	0.683	-0.0765	0.116725
Region Northeast	Dropped because of collinearity. No association.					
Construction Substantial Rehab	Dropped because of collinearity. No association.					
Construction Moderate Rehab	-0.05314	0.057052	-0.93	0.352	-0.16515	0.058881
Construction Mixed	0.016394	0.088741	0.18	0.853	-0.15784	0.190628
Construction New	-0.00632	0.044628	-0.14	0.887	-0.09394	0.081306
Location Suburban	Dropped because of collinearity. No association.					
Location Urban	0.016785	0.046611	0.36	0.719	-0.07473	0.108302
Location Rural	-0.07993	0.055085	-1.45	0.147	-0.18809	0.02822
Condition Excellent	0.092007	0.113245	0.81	0.417	-0.13034	0.314355
Condition Good	0.1065	0.10964	0.97	0.332	-0.10877	0.321769
Condition Satisfactory	0.266983	0.116126	2.3	0.022	0.038979	0.494987
Condition Poor	0.548869	0.173397	3.17	0.002	0.208418	0.889321
_cons	0.544888	0.523145	1.04	0.298	-0.48226	1.57204

TABLE 11: Occupancy GLS Regression						
Random Effects GLS Regression			Number of observations		3874	
Group Variable:	(i): Project_ID		Number of groups		961	
R-squared within		0.0281	Observations per group: min		1	
Between		0.2002	Average		4	
Overall		0.136	Max		6	
Random Effects	u_i ~ Gaussian		Wald chi2(20)		359.88	
corr(u_i, X)	= 0 (assumed)		Prob > chi2		0	
Occupancy	**Coefficient**	**Standard Error**	**z**	**P>z**	**95% Confidence Interval**	
NOI Ratio	-0.00036	0.000384	-0.93	0.354	-0.00111	0.000397
Negative Cash Flow	-0.0208	0.003042	-6.84	0	-0.02676	-0.01484
Operating Expense Ratio	-1.38E-02	4.38E-03	-3.15	0.002	-2.24E-02	-5.24E-03
Revenue Ratio	0.061715	0.006379	9.67	0	0.049212	0.074218
Age	3.37E-06	1.50E-06	2.25	0.025	4.31E-07	6.31E-06
Family	-0.0029	0.01085	-0.27	0.789	-0.02417	0.018364
Senior	0.014168	0.011045	1.28	0.2	-0.00748	0.035817
Native American	0.004762	0.011698	0.41	0.684	-0.01817	0.02769
Special Needs	-2.5E-05	0.004342	-0.01	0.995	-0.00854	0.008485
SRO	0.008057	0.010209	0.79	0.43	-0.01195	0.028065
Support Services	0.003953	0.003906	1.01	0.312	-0.0037	0.011609
Region Northeast	0.008889	0.072009	0.12	0.902	-0.13225	0.150024
Region Mid-Atlantic	-0.00858	0.072005	-0.12	0.905	-0.1497	0.132549
Region Central	-0.00928	0.072043	-0.13	0.898	-0.15048	0.131925
Region West	-0.01459	0.072004	-0.2	0.839	-0.15571	0.12654
Construction Moderate Rehab	Dropped because of collinearity. No association.					
Construction New	0.036121	0.005447	6.63	0	0.025446	0.046796
Construction Substantial Rehab	0.012644	0.006087	2.08	0.038	0.000714	0.024574
Construction Mixed	0.007393	0.009208	0.8	0.422	-0.01065	0.025439
Location Rural	Dropped because of collinearity. No association.					
Location Urban	0.00597	0.004681	1.28	0.202	-0.0032	0.015144
Location Suburban	0.016186	0.005601	2.89	0.004	0.005208	0.027163
_cons	0.77105	0.087262	8.84	0	0.60002	0.94208
/lnsig2u	0.035661					
sigma_u	0.060562					
Rho	0.257459	(fraction of variance due to u_i)				

TABLE 12: Occupancy Regression Controlling for Property Condition (2007 only)						
Source	SS	Df	MS	Number of observations		712
Model	1.514499	11	0.137682	F(24, 681)		21.67
Residual	4.447582	700	0.006354	Prob > F		0
Total	5.96208	711	0.008385	R-squared		0.254
				Adj R-squared		0.2423
				Root MSE		0.07971
Occupancy	**Coefficient**	**Standard Error**	**t**	**P>t**	**95% Confidence Interval**	
Revenue Ratio	0.069597	0.014028	4.96	0	0.042054	0.09714
Operating Expense Ratio	-0.00115	0.009453	-0.12	0.904	-0.01971	0.017414
Construction Moderate Rehab	Dropped because of collinearity. No association.					
Construction New	0.032078	0.009784	3.28	0.001	0.012868	0.051288
Construction Substantial Rehab	0.019392	0.010504	1.85	0.065	-0.00123	0.040014
Construction Mixed	0.02412	0.017935	1.34	0.179	-0.01109	0.059333
Location Rural	Dropped because of collinearity. No association.					
Location Urban	0.014049	0.00816	1.72	0.086	-0.00197	0.030071
Location Suburban	0.024399	0.010171	2.4	0.017	0.00443	0.044369
Condition Excellent	-0.00655	0.021597	-0.3	0.762	-0.04896	0.035849
Condition Good	-0.00899	0.021125	-0.43	0.67	-0.05047	0.032482
Condition Satisfactory	-0.03228	0.022171	-1.46	0.146	-0.07581	0.011245
Condition Poor	-0.29533	0.031513	-9.37	0	-0.3572	-0.23346
_cons	0.854635	0.026437	32.33	0	0.80273	0.906541

TABLE 13: Gross Potential Rent Ratio GLS Regression						
Random Effects GLS Regression				Number of observations	3876	
Group Variable:	(i): Project_ID			Number of groups	961	
R-squared within	0.2645			Observations per group: min	1	
Between	0.4548			Average	4	
Overall	0.4079			Max	6	
Random Effects	u_i ~ Gaussian			Wald chi2(20)	1819.26	
corr(u_i, X)	= 0 (assumed)			Prob > chi2	0	
Gross Potential Rent Ratio	**Coefficient**	**Standard Error**	**z**	**P>z**	**95% Confidence Interval**	
Occupancy	0.190198	0.031309	6.07	0	0.128834	0.251563
Operating Expense Ratio	0.299829	0.007341	40.84	0	0.28544	0.314218
Age	9.65E-06	3.38E-06	2.85	0.004	3.03E-06	1.63E-05
Family	-0.00441	0.02918	-0.15	0.88	-0.0616	0.052783
Senior	0.001839	0.029712	0.06	0.951	-0.0564	0.060073
Native American	-0.0253	0.032121	-0.79	0.431	-0.08826	0.037652
Special Needs	0.017089	0.011312	1.51	0.131	-0.00508	0.03926
SRO	-0.02155	0.027379	-0.79	0.431	-0.07521	0.032109
Support Services	-0.02561	0.010294	-2.49	0.013	-0.04579	-0.00544
Region Northeast	-0.01847	0.162746	-0.11	0.91	-0.33744	0.30051
Region Mid-Atlantic	-0.0729	0.162747	-0.45	0.654	-0.39188	0.246077
Region Central	-0.11259	0.162867	-0.69	0.489	-0.4318	0.206627
Region West	-0.04865	0.162769	-0.3	0.765	-0.36767	0.270371
Construction New	-0.05913	0.022198	-2.66	0.008	-0.10264	-0.01562
Construction Moderate Rehab	-0.08153	0.024689	-3.3	0.001	-0.12992	-0.03314
Construction Substantial Rehab	-0.05108	0.023239	-2.2	0.028	-0.09663	-0.00553
Construction Mixed	Dropped because of collinearity. No association.					
Location Rural	Dropped because of collinearity. No association.					
Location Urban	-0.01789	0.012184	-1.47	0.142	-0.04177	0.005986
Location Suburban	-0.0296	0.01476	-2.01	0.045	-0.05853	-0.00067
_cons	0.529682	0.210183	2.52	0.012	0.117731	0.941632
/lnsig2u	0.114324					
sigma_u	0.111979					
Rho	0.510362	(fraction of variance due to u_i)				

TABLE 14: Gross Potential Rent Ratio Regression Controlling for Property Condition (2007 only)						
Source	SS	Df	MS	Number of observations		712
Model	18.79543	11	1.708675	F(24, 681)		54.26
Residual	22.04279	700	0.03149	Prob > F		0
Total	40.83822	711	0.057438	R-squared		0.4602
				Adj R-squared		0.4518
				Root MSE		0.17745
Gross Potential Rent Ratio	**Coefficient**	**Standard Error**	**t**	**P>t**	**95% Confidence Interval**	
Occupancy	0.263459	0.082702	3.19	0.002	0.101085	0.425834
Operating Expense Ratio	0.375264	0.016328	22.98	0	0.343206	0.407322
Construction New	0.004859	0.02194	0.22	0.825	-0.03822	0.047935
Construction Moderate Rehab	Dropped because of collinearity. No association.					
Construction Substantial Rehab	0.044157	0.023382	1.89	0.059	-0.00175	0.090064
Construction Mixed	0.036271	0.039966	0.91	0.364	-0.0422	0.114738
Location Urban	-0.01949	0.018148	-1.07	0.283	-0.05512	0.016145
Location Suburban	-0.01973	0.022718	-0.87	0.385	-0.06433	0.024875
Location Rural	Dropped because of collinearity. No association.					
Condition Excellent	-0.03745	0.048052	-0.78	0.436	-0.13179	0.056895
Condition Good	-0.06889	0.046942	-1.47	0.143	-0.16105	0.023278
Condition Satisfactory	-0.08249	0.049304	-1.67	0.095	-0.17929	0.01431
Condition Poor	-0.12251	0.074354	-1.65	0.1	-0.2685	0.023469
_cons	0.371522	0.092755	4.01	0	0.189411	0.553632

TABLE 15: Physical Condition – Excellent, Logistic Regression (2007 only)						
Logistic regression		Number of obs			712	
Log likelihood = -324.36374		LR chi2(17)			110	
		Prob > chi2			0	
		Pseudo R2			0.145	
Condition Excellent	**Coefficient**	**Standard Error**	**z**	**P>z**	**95% Confidence Interval**	
Operating Expense Ratio	-0.87431	0.384401	-2.27	0.023	-1.62773	-0.1209
Revenue Ratio	1.092985	0.496311	2.2	0.028	0.120233	2.065737
Occupancy	1.913471	1.713852	1.12	0.264	-1.44562	5.27256
Family	-0.78873	0.752914	-1.05	0.295	-2.26442	0.686953
Senior	0.171497	0.76055	0.23	0.822	-1.31915	1.662147
Native American	-1.11826	1.073259	-1.04	0.297	-3.22181	0.985286
Special Needs	-0.08687	0.247194	-0.35	0.725	-0.57136	0.397624
SRO	-0.45037	0.685047	-0.66	0.511	-1.79304	0.892299
Support Services	0.148507	0.223064	0.67	0.506	-0.28869	0.585705
Region Northeast	1.435327	0.319189	4.5	0	0.809728	2.060927
Region Mid-Atlantic	0.738435	0.26285	2.81	0.005	0.223259	1.25361
Region Central	0.807285	0.323563	2.49	0.013	0.173114	1.441457
Region West	Dropped because of collinearity. No association.					
Construction New	Dropped because of collinearity. No association.					
Construction Moderate Rehab	-1.65435	0.413671	-4	0	-2.46513	-0.84357
Construction Substantial Rehab	-1.0498	0.299412	-3.51	0	-1.63663	-0.46296
Construction Mixed	-0.54825	0.536818	-1.02	0.307	-1.60039	0.503894
Location Suburban	Dropped because of collinearity. No association.					
Location Urban	-1.15826	0.264709	-4.38	0	-1.67708	-0.63944
Location Rural	-0.95892	0.308704	-3.11	0.002	-1.56397	-0.35387
_cons	0.132844	3.526955	0.04	0.97	-6.77986	7.045548

TABLE 16: Physical Condition – Good, Logistic Regression (2007 only)						
Logistic regression		Number of obs			712	
Log likelihood = -467.50994		LR chi2(17)			37.93	
		Prob > chi2			0.0025	
		Pseudo R2			0.039	
Condition Good	**Coefficient**	**Standard Error**	**z**	**P>z**	**95% Confidence Interval**	
Operating Expense Ratio	-0.236197	0.265376	-0.89	0.373	-0.75632	0.28393
Revenue Ratio	-0.4234503	0.395387	-1.07	0.284	-1.19839	0.351493
Occupancy	2.968026	1.034567	2.87	0.004	0.940311	4.995741
Family	0.1897246	0.581442	0.33	0.744	-0.94988	1.32933
Senior	-0.0718598	0.597872	-0.12	0.904	-1.24367	1.099947
Native American	-0.8421684	0.579841	-1.45	0.146	-1.97864	0.294299
Special Needs	0.330988	0.19783	1.67	0.094	-0.05675	0.718727
SRO	0.5086532	0.530959	0.96	0.338	-0.53201	1.549315
Support Services	-0.0552581	0.177221	-0.31	0.755	-0.4026	0.292088
Region Northeast	-0.4592622	0.242143	-1.9	0.058	-0.93385	0.01533
Region Mid-Atlantic	-0.157868	0.206041	-0.77	0.444	-0.5617	0.245966
Region Central	-0.1402954	0.263928	-0.53	0.595	-0.65758	0.376994
Region West	Dropped because of collinearity. No association.					
Construction New	Dropped because of collinearity. No association.					
Construction Moderate Rehab	0.423741	0.262302	1.62	0.106	-0.09036	0.937844
Construction Substantial Rehab	0.4201648	0.222151	1.89	0.059	-0.01524	0.855573
Construction Mixed	0.4710901	0.42844	1.1	0.272	-0.36864	1.310816
Location Suburban	Dropped because of collinearity. No association.					
Location Urban	0.4690432	0.226075	2.07	0.038	0.025944	0.912142
Location Rural	0.875282	0.272178	3.22	0.001	0.341824	1.40874
_cons	-2.578103	2.537715	-1.02	0.31	-7.55193	2.395727

TABLE 17: Physical Condition – Satisfactory, Logistic Regression (2007 only)						
Logistic regression		Number of obs			712	
Log likelihood = -277.78422		LR chi2(17)			87.1	
		Prob > chi2			0	
		Pseudo R2			0.1355	
Condition Satisfactory	**Coefficient**	**Standard Error**	**z**	**P>z**	**95% Confidence Interval**	
Operating Expense Ratio	0.992913	0.329727	3.01	0.003	0.34666	1.639166
Revenue Ratio	-0.51361	0.490936	-1.05	0.295	-1.47583	0.44861
Occupancy	-0.99431	1.026657	-0.97	0.333	-3.00652	1.017905
Family	0.405835	1.043577	0.39	0.697	-1.63954	2.451209
Senior	-0.8914	1.099787	-0.81	0.418	-3.04694	1.264143
Native American	1.997314	0.645029	3.1	0.002	0.733081	3.261547
Special Needs	-0.47089	0.282823	-1.66	0.096	-1.02521	0.083432
SRO	-0.99685	0.977702	-1.02	0.308	-2.91311	0.919408
Support Services	0.059685	0.244457	0.24	0.807	-0.41944	0.538812
Region Northeast	-0.97381	0.339238	-2.87	0.004	-1.63871	-0.30892
Region Mid-Atlantic	-0.31983	0.288765	-1.11	0.268	-0.8858	0.246137
Region Central	-0.4362	0.38836	-1.12	0.261	-1.19738	0.324968
Region West	Dropped because of collinearity. No association.					
Construction New	Dropped because of collinearity. No association.					
Construction Moderate Rehab	1.109564	0.33329	3.33	0.001	0.456327	1.7628
Construction Substantial Rehab	0.935212	0.297152	3.15	0.002	0.352806	1.517619
Construction Mixed	0.158311	0.596038	0.27	0.791	-1.0099	1.326524
Location Suburban	Dropped because of collinearity. No association.					
Location Urban	1.083351	0.386122	2.81	0.005	0.326565	1.840136
Location Rural	0.339486	0.48444	0.7	0.483	-0.61	1.288971
_cons	-2.48739	4.241152	-0.59	0.558	-10.7999	5.825111

TABLE 18: Physical Condition – Poor, Logistic Regression (2007 only)						
Logistic regression		Number of obs		554		
Log likelihood = -29.754375		LR chi2(17)		56.2		
		Prob > chi2		0		
		Pseudo R2		0.4857		
Condition Poor	**Coefficient**	**Standard Error**	**z**	**P>z**	**95% Confidence Interval**	
Operating Expense Ratio	1.399512	0.832286	1.68	0.093	-0.23174	3.030764
Revenue Ratio	-0.9401129	1.55606	-0.6	0.546	-3.98994	2.10971
Occupancy	-13.89882	3.949079	-3.52	0	-21.6389	-6.15877
Family	3.183423	2.307972	1.38	0.168	-1.34012	7.706965
Senior	-0.8302636	1.068406	-0.78	0.437	-2.9243	1.263774
Native American	2.854583	1.712801	1.67	0.096	-0.50244	6.21161
Special Needs	-1.707048	1.16818	-1.46	0.144	-3.99664	0.582542
SRO	0.3512873	1.146059	0.31	0.759	-1.89495	2.597522
Support Services	-5.336341	2.564576	-2.08	0.037	-10.3628	-0.30986
Region Northeast	-4.510989	3.940059	-1.14	0.252	-12.2334	3.211385
Region Mid-Atlantic	1.399512	0.832286	1.68	0.093	-0.23174	3.030764
Region Central	-0.9401129	1.55606	-0.6	0.546	-3.98994	2.10971
Region West	Dropped because of collinearity. No association.					
Construction New	Dropped because of collinearity. No association.					
Construction Moderate Rehab	1.468406	1.296447	1.13	0.257	-1.07258	4.009396
Construction Substantial Rehab	0.9765022	1.411772	0.69	0.489	-1.79052	3.743524
Construction Mixed	3.811934	1.707172	2.23	0.026	0.465939	7.157929
Location Suburban	Dropped because of collinearity. No association.					
Location Urban	-0.8163891	1.167233	-0.7	0.484	-3.10412	1.471346
Location Rural	-1.542998	1.673071	-0.92	0.356	-4.82216	1.736162
_cons	1.851088	7.279566	0.25	0.799	-12.4166	16.11877

TABLE 19: Repairs Ratio Regression Controlling for Property Condition (2007 only)						
Source	SS	Df	MS	Number of observations		713
Model	267.8768	10	26.78768	F(24, 681)		31.71
Residual	593.0646	702	0.844821	Prob > F		0
Total	860.9414	712	1.209187	R-squared		0.3111
				Adj R-squared		0.3013
				Root MSE		0.91914
Repairs Ratio	**Coefficient**	**Standard Error**	**t**	**P>t**	**95% Confidence Interval**	
Operating Expense Ratio	1.42091	0.083616	16.99	0	1.256743	1.585078
Construction Mixed	Dropped because of collinearity. Very little association					
Construction Moderate Rehab	-0.22157	0.206676	-1.07	0.284	-0.62735	0.184206
Construction Substantial Rehab	-0.1871	0.191709	-0.98	0.329	-0.56349	0.189296
Construction New	-0.27929	0.188232	-1.48	0.138	-0.64886	0.090273
Location Rural	Dropped because of collinearity. Very little association					
Location Urban	-0.09324	0.093656	-1	0.32	-0.27712	0.090638
Location Suburban	0.046488	0.117355	0.4	0.692	-0.18392	0.276897
Condition Excellent	-0.02821	0.248697	-0.11	0.91	-0.51649	0.460067
Condition Good	0.096949	0.243073	0.4	0.69	-0.38029	0.574185
Condition Satisfactory	0.200776	0.254768	0.79	0.431	-0.29942	0.700974
Condition Poor	-0.41125	0.361008	-1.14	0.255	-1.12004	0.297531
_cons	0.097059	0.326546	0.3	0.766	-0.54406	0.738182

TABLE 20: Repairs Ratio / Occupancy GLS Regression						
Random Effects GLS Regression			Number of Observations		3850	
Group Variable:	(i): Project_ID		Number of groups		958	
R-squared within		0.0027	Observations per group: min		1	
Between		0.0353	Average		4	
Overall		0.0227	Max		6	
Random Effects	u_i ~ Gaussian		Wald chi2(20)		42.5	
corr(u_i, X)	= 0 (assumed)		Prob > chi2		0	
Repairs Ratio	**Coefficient**	**Standard Error**	**z**	**P>z**	**95% Confidence Interval**	
Occupancy	0.391575	0.198623	1.97	0.049	0.002282	0.780868
Construction Mod Rehab	Dropped because of collinearity. No association.					
Construction New	-0.12128	0.08172	-1.48	0.138	-0.28144	0.038893
Construction Substantial Rehab	-0.00124	0.091442	-0.01	0.989	-0.18046	0.177984
Construction Mixed	0.132486	0.143614	0.92	0.356	-0.14899	0.413964
Location Rural	Dropped because of collinearity. No association.					
Location Urban	0.158875	0.068071	2.33	0.02	0.025459	0.292291
Location Suburban	0.085387	0.084534	1.01	0.312	-0.0803	0.25107
Region Northeast	1.042121	0.977928	1.07	0.287	-0.87458	2.958824
Region Mid-Atlantic	1.098425	0.978393	1.12	0.262	-0.81919	3.01604
Region Central	0.871268	0.979929	0.89	0.374	-1.04936	2.791893
Region West	1.246646	0.978444	1.27	0.203	-0.67107	3.164361
_cons	-0.02584	0.999976	-0.03	0.979	-1.98576	1.934073
/lnsig2u	0.648629					
sigma_u	0.713355					
Rho	0.452583	(fraction of variance due to u_i)				

TABLE 21: Repairs Ratio / Gross Potential Rent GLS Regression						
Random Effects GLS Regression			Number of Observations		3866	
Group Variable:	(i): Project_ID		Number of groups		959	
R-squared within		0.0549	Observations per group: min		1	
Between		0.1169	Average		4	
Overall		0.1132	Max		6	
Random Effects	u_i ~ Gaussian		Wald chi2(20)		309.45	
corr(u_i, X)	= 0 (assumed)		Prob > chi2		0	
Repairs Ratio	**Coefficient**	**Standard Error**	**z**	**P>z**	**95% Confidence Interval**	
Gross Potential Rent Ratio	1.311673	0.080229	16.35	0	1.154428	1.468919
Construction Mod Rehab	Dropped because of collinearity. No association.					
Construction New	-0.1595	0.077941	-2.05	0.041	-0.31226	-0.00674
Construction Substantial Rehab	-0.04206	0.087457	-0.48	0.631	-0.21347	0.129355
Construction Mixed	0.020074	0.13739	0.15	0.884	-0.2492	0.289353
Location Suburban	Dropped because of collinearity. No association.					
Location Urban	0.02955	0.069948	0.42	0.673	-0.10755	0.166645
Location Rural	-0.10867	0.080665	-1.35	0.178	-0.26677	0.049429
Region Northeast	0.959351	0.940509	1.02	0.308	-0.88401	2.802716
Region Mid-Atlantic	1.095139	0.940918	1.16	0.244	-0.74903	2.939304
Region Central	0.928238	0.942385	0.98	0.325	-0.9188	2.775279
Region West	1.194744	0.940973	1.27	0.204	-0.64953	3.039018
_cons	-0.79903	0.947329	-0.84	0.399	-2.65576	1.057698
/lnsig2u	0.618156					
sigma_u	0.693166					
Rho	0.442985	(fraction of variance due to u_i)				

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