

AN ECONOMIC MODEL OF ASYMMETRIC INFORMATION, DISSATISFACTION, AND RESIDENT TURNOVER IN RENTED MULTIFAMILY HOUSING

Russell N. James III

Abstract

This article presented an original economic model of the apartment rental market where service expenditures are invisible to prospective residents (but highly important to current residents), while recruiting expenditures are highly visible to prospective residents (but often inconsequential to current residents). In a competitive market, the model predicts that managers will necessarily favor observable recruiting expenditures, even though such an approach generates greater resident dissatisfaction and turnover, while simultaneously increasing operational costs for the industry as a whole. Evidence drawn from both the 2005 American Housing Survey and the operational expenses of 705,178 unsubsidized apartment units in 71 metropolitan areas appeared consistent with the model. Consumer advocacy and legislative approaches to addressing the issue of asymmetric information among prospective residents were discussed, including a proposal of tax incentives for long-term residency.

Introduction

This article proposes an economic model of the rented multifamily housing market. The model suggests that individual managers face short-run incentives that have a cumulative effect of reinforcing resident transience and resident dissatisfaction while diminishing industry profits as a whole. This article presents the theoretical model, examines related empirical evidence, and discusses potential market and policy mechanisms to mitigate the negative impact of these incentives.

That transience and residential dissatisfaction are characteristic of residents of rented housing (relative to homeowners) has been well established. Researchers have consistently found significantly higher mobility and significantly lower residential satisfaction among renters across many studies in several countries (Ahn & Blázquez, 2007; Elsinga & Hoekstra, 2005; Rohe & Stegman, 1994; Rossi & Weber, 1996).

Russell N. James III is Assistant Professor, Department of Housing and Consumer Economics, University of Georgia, Athens, GA.

The 2005 Current Population Survey showed that between 2004 and 2005, 30% of renters moved, while only 7% of homeowners did so (U.S. Census Bureau, 2006). In addition, a larger proportion of renter moves were moves to other residences within the same county, reflecting a mobility churning within the same general area (U.S. Census Bureau, 2006). The American Housing Survey typically shows a median length of residence for all renters of about two years (Ahluwalia, Crowe, & Corletta, 1992; National Association of Home Builders, 2002). Such transience may be socially problematic in that it diminishes neighborhood and community social capital development (Putnam, 1995), and negatively affects children's educational outcomes, family stability, and psychological well-being (Adam & Chase-Lansdale, 2002; Boyle, Kulu, Cooke, Gayle, & Mulder, 2006; Eckenrode, Rowe, Laird, & Brathwaite, 1995; Magdol, 2002).

Ahn and Blázquez (2007) found that the greater mobility of residents of renter housing is driven in large part by their lower residential satisfaction. Data from the 2005 American Housing Survey showed that when rating one's residential unit as a place to live on a scale from 1 to 10 (10 was best), homeowners were over 1.6 times more likely to give a "10" rating, while renters were over 5 times more likely to give a "1" rating. Other studies have shown that the satisfaction gap between renters and owners remains significant even after controlling for all structural and socio-demographic characteristics (Elsinga & Hoekstra, 2005).

Theoretical Model

Game Theory and Residential Property Management

As a general principal, economists assume that individual businesses operate in such a way as to maximize profit. Despite this assumption, it is possible for businesses to make choices that are individually rational, but globally inefficient.

Consider a model with two apartment managers in a competitive game. There is at any one time a finite pool of residents, less than the available rental units. Each manager is equally efficient and can choose one of two strategies. Either the manager can emphasize recruiting expenditures that are visible to prospective residents, or she can emphasize service expenditures that are invisible to prospective residents but very important to current residents. Further, assume a fixed total amount of expenditures, so that emphasizing both is impossible. Examples of recruiting expenditures with high visibility to prospective residents would include advertising, external appearance, and move-in price discounts. Conversely, service expenditures that are invisible to prospective residents could include issues such as maintenance responsiveness or the quality and training of management personnel. Prospective residents face an asymmetric information

barrier because property managers know the level of service in advance, but prospective residents do not. For managers, the benefit to a high-visibility/low-service strategy is the ability to attract new residents. The benefit to the low-visibility/high-service strategy is the ability to retain current residents. A simple form, profit payoff matrix might look something like the following (listing Apartment 1's payoffs first and Apartment 2's payoffs second).

		Apartment 2	
		High-visibility/ Low-service	Low-visibility/ High-service
Apartment 1	High-visibility/ Low-service	7, 7	12, 5
	Low-visibility/ High-service	5, 12	10, 10

If both managers choose a high-service strategy, the outcome is high profits (10 for each), due in part to low resident turnover. Because neither apartment spends much money on advertising or move-in discounts, neither is at a relative disadvantage in attracting new prospective residents. Although this choice generates the highest combined profits, there are individual incentives for each apartment manager to deviate from this strategy.

By shifting to a high-visibility strategy, the property manager places her competition at a clear disadvantage in recruiting new prospects. Imagine the situation if one apartment ran extensive advertisements, offered move-in discounts, and improved signage and landscaping, while the other did none of these things. The low-visibility apartment's profits drop substantially (5). Prospective residents are very difficult to attract for the low-visibility apartment. Current residents are satisfied, but even so, some will leave due to other issues such as job relocation, union dissolution or formation, change of economic circumstances, or desire for homeownership. The high-visibility apartment's profits increase (12), but the total combined profits for both properties are lower than if both apartments pursued a high-service approach. This is necessarily so, because the high-visibility, low-service approach generates a higher rate of resident dissatisfaction and turnover. High resident turnover is expensive to managers. Each time a resident chooses not to re-sign a lease, the manager must cover expenses such as cleaning, minor repairs, lost revenue from vacancy during refurbishing, lost revenue from vacancy during marketing, additional advertising required to fill the unit, and occasional credit loss due to residents who leave without paying the final month's rent. By pursuing a high-visibility, low-service approach, the property manager improves her profits and her competitive position in recruiting prospective residents, but also introduces new costs generated by greater resident dissatisfaction and turnover.

However, this competitive advantage is not likely to last indefinitely. The low-visibility, high-service manager has an incentive to become competitive in attracting new residents. In reality, this incentive may grow over time, as current residents move out for other reasons and leave behind vacant units. In response, the low-visibility, high-service manager will choose to compete for new residents by shifting to a high-visibility, low-service approach. This eliminates the competitive advantage/disadvantage in attracting new residents for both sides as both are now pursuing identical strategies. The elimination of the competitive difference helps the profits of the previously disadvantaged manager (5 to 7), but reduces the profits of the other manager (12 to 5). Notice that total profits are lower than in any other strategy combination. Again, this is because the high-visibility, low-service strategy raises resident dissatisfaction and turnover. The increased resident “churn” adds additional costs for both operators and has a negative impact on total profits (Harmon & McKenna-Harmon, 1994).

Here is an example where both managers operate individually in such a way as to maximize individual profits, but the net result is lower total profits for the industry and lower satisfaction for residents. More formally, the payoff matrix is a normal-form representation of the prisoner’s dilemma (Corfman & Lehman, 1994). In any normal form game, strategy s_i^2 strictly dominates strategy s_i^1 if for each of the other player’s strategies, player i ’s payoff from playing s_i^2 is greater than player i ’s payoff from playing s_i^1 (Gibbons, 1992). This is true in the present payoff matrix as the high-visibility/low-service strategy provides a higher payoff to the manager, regardless of the other manager’s actions. If s_i^1 represents a high-visibility, low-service strategy and s_i^2 represents a low-visibility, high-service strategy, then, the manager faces a payoff, u , of either $u(s_i^1) = 12$ and $u(s_i^2) = 10$ or $u(s_i^1) = 7$ and $u(s_i^2) = 5$ depending upon the strategy chosen by the other manager. In either case, the payoff to the individual manager is higher with strategy s_i^1 , the high-visibility, low-service strategy.

While this model is simplistic, its relevance to actual practice may be plausible. Rather than having only a single opponent, the other manager could represent a group of competitors where the average behavior is at issue (Corfman & Lehman, 1994). Thus, this simple model can be generalized beyond the duopoly. This prisoner’s dilemma game form, while simple, is often useful for approximating real world competition in both business and non-business contexts (Axelrod, 1984; Wang & Yang, 2003).

An Economic Model of Residential Property Management in the Apartment Rental Market

The previous payoff matrix uses hypothetical numbers to illustrate a point. However, it may reflect a common tradeoff in the markets faced by apartment managers. Suppose that a property manager, denoted as i , has a fixed pool of funds

to allocate between visible recruiting efforts (e.g., advertising, move-in discounts, and external appearances), v , and service, s , where v and s are budget shares that sum to one. For any particular month, the total number of residents will be new residents recruited to the property and existing residents retained by the property. The total number of new residents is a function of the total number of prospective new residents available in the market, m , and the relative recruiting expenditures of apartment manager, i , and competitive manager, j .

$$f\left(\frac{v_i}{v_j}\right) \times m \quad (1)$$

In calculating retention, suppose only those contractually eligible to leave will do so, and that only a portion of those eligible to leave are able to consider returning due to intervening factors such as job relocation or marriage dissolution. Thus, for any given month, returning residents will include the proportion, k , of current residents, r , who are contractually obligated to return, plus some share of the remaining residents. The proportion of non-contractually obligated residents who return will depend upon the percentage, p , who could potentially choose to return because they do not need to relocate due to some other intervening factor, and some function of the service, s , experienced during their stay. Thus, the total number of returning residents will be:

$$(k_i \times r_i) + [(1 - k_i) \times r_i \times p_i \times f(s_i)] \text{ where } k, p, f(s) \in [0,1]. \quad (2)$$

The total occupancy, z_i , for any particular month will be a combination of new residents recruited and existing residents retained

$$z_i = f\left(\frac{v_i}{v_j}\right) \times m + (k_i \times r_i) + [(1 - k_i) \times r_i \times p_i \times f(s_i)] \quad (3)$$

If a property manager seeks to maximize customers given a fixed amount of funds to distribute between visible recruiting, v , and service, s , she will allocate funds such that the customers generated by the last dollar spent on visibility equal the customers generated by the last dollar spent on service. (If spending money on one yielded a higher number of customers than spending money on the other, the property manager would shift funds to the one that yielded better returns until that was no longer the case or all funds were exhausted.) Formally,

$$\frac{\partial [f\left(\frac{v_i}{v_j}\right) \times m]}{\partial v_i} = \frac{\partial [(1 - k_i) \times r_i \times p_i \times f'(s_i)]}{\partial s_i} \quad (4)$$

$$\text{and if } v_i + s_i = 1, \text{ then } \frac{\partial z_i}{\partial v_i} = \frac{\partial z_i}{\partial s_i} = 0 \quad (5)$$

However, to the extent that prospective residents, m , respond to a small competitive advantage in visible recruiting, then at a point where $v_i \approx v_j$, there is a strong

incentive for the property manager to increase v_i . (Consider, for example, the effect of different move-in rent concessions at two identical properties.) In a multi-period game, this same incentive also pushes the competitor, j , to follow suit until presumably the marginal returns to service, s , will at some basic level of service, be so great as to equal the benefit of the competitive advantage in recruiting. (This assumes decreasing marginal returns to service expenditures.) Alternatively, the level of service, s , may reach the minimum required by statutory regulation.

In a multi-period model, this trend feeds on itself. As decreasing expenditures on service lead to lower retention of current residents, more of these current residents then enter the market as prospective residents for the other apartment managers. This results in an increase in the size of the total prospective residents available in the market, m . Increasing m further incentivizes expenditures on visible recruiting efforts, v . Increasing m increases

$$\frac{\partial [f'(\frac{v_i}{v_j}) \times m]}{\partial v_i}$$
, implying by equation (4) that
$$\frac{\partial [(1 - k_i) \times r_i \times p_i \times f'(s_i)]}{\partial s_i}$$
 must also increase.

Assuming diminishing marginal recruiting returns to service expenditures, this can only happen by further decreasing the amount of expenditures on service, s . Thus, a low-service marketplace with high turnover rates would perpetuate the emphasis on recruiting because high turnover rates increase the total number of prospective residents available in the market. This larger number of available prospective residents increases the returns to recruiting expenditures.

Empirical Evidence

Management, Marketing, and Metropolitan Turnover Rates

Data from the National Apartment Association's (NAA) 2005 Survey of Income and Expenses in Rental Apartment Communities provide insight on how residential property management practices can drive turnover rates. The NAA survey contains information about management expenditures for 873,532 units. The present analysis considers only non-subsidized apartments in defined metropolitan areas, which limits the sample to 705,178 units. The survey contains information on 25 different apartment income, expenditure, and size variables. The survey's turnover percentage measurement indicates the average annual rate of turnover of apartment residents reported in a particular metropolitan area.

The previous economic model suggests a relationship between residential property management expenditures and market turnover rates. Specifically, visible marketing-related expenditures should be positively related to market turnover.

Further, service-related expenditures should be negatively related to apartment resident turnover.

To uncover the most important variables among the large set provided in the survey, the following analysis employs two statistical selection methodologies. Both models consider a weighted ordinary least squares regression with metropolitan turnover rate as the dependent variable and potential metropolitan-level independent variables including average rent per square foot, and several independent variables reported as a percentage of the property's gross potential rent such as vacancy, collection losses, rent concessions, marketing, repair and maintenance, average square feet per unit, average number of units per property, salaries and personnel, insurance, taxes, utilities, management fees, administrative costs, capital expenditures, and contract services. Each metropolitan area represents a single observation, corresponding to a single metropolitan-level turnover rate. The dataset includes 71 such defined metropolitan area observations. However, to reflect that some metropolitan areas (such as New York) represent a much larger number of units, and therefore should be weighted as more important than other observations (such as Jackson, Mississippi), each observation is weighted according to the total number of units included in the metro area report. Standard errors were calculated using monotonically rescaled weights with a mean of one to avoid artificially inflating p -values.

The first model employs a stepwise selection method with entry and exit levels set at .01. This selection method begins by adding the variable with the largest F -statistic, indicating the variable's contribution to the model, so long as the p -value of the F -statistic is below .01. Next, the remaining variables outside the model are examined and the F -statistic is recalculated based upon the addition of each remaining variable to the included variable. Again, the variable with the largest F -statistic having a p -value below .01 is included. After this, the included variables are now re-examined, and any variable that no longer produces an F -statistic significant at the .01 level is deleted. The process of examining remaining variables for inclusion, and examining included variables for deletion, continues until no excluded variables have the requisite p -value and all included variables have the necessary p -value, or, alternatively, if the only excluded variable eligible for inclusion is the one just deleted from the included variables (SAS Institute, 2004).

In a slight variation, the second model uses the maximum R^2 improvement technique for selection. This method selects the variables that generate the highest R^2 . At each level, the variable yielding the highest R^2 improvement is included in the model. After including the variable in the model, this method then examines all excluded variables to see if the R^2 could be improved by switching any of the excluded variables with any of the included variables. Each potential switch is examined prior to making any switches. (This contrasts with the stepwise

methodology where included variables will be dropped due to insufficient p -value, without considering the impact of adding the best alternative excluded variable.) This method produces the model with the highest R^2 at the one-variable, two-variable, three-variable, and each subsequent level. The reported results display the best two-variable model (Table 1).

Table 1. Most Important Factors in Metropolitan Area Apartment Turnover Rate – 2005 Survey of Income and Expenses in Rental Apartment Communities ($N = 71$)

Variable	Parameter Estimate	Standard Error	$Pr > F$
Weighted Ordinary Least Squares Stepwise Regression (.01 entry/exit)			
Intercept	0.70374	0.05913	<.0001
Marketing	7.12537	1.43741	<.0001
Management Fees	-5.07380	1.34856	0.0004
Utilities	-1.63637	0.59574	0.0077
R^2	0.43650		
Maximum R^2 Improvement: Best Two-Variable Model (Weighted OLS)			
Intercept	0.62756	0.05464	<.0001
Marketing	7.27511	1.50295	<.0001
Management Fees	-5.21933	1.40998	0.0004
R^2	0.37400		
Maximum R^2 Improvement: Best Single-Variable Model (Weighted OLS)			
Intercept	0.45454	0.03077	<.0001
Marketing	7.84320	1.62510	<.0001
R^2	0.24970		

Notes: Original variables are: average rent per square foot, vacancy (GPR%), collection losses (GPR%), concessions (GPR%), marketing (GPR%), repair and maintenance (GPR%), average square feet per unit, average number of units per property, salaries and personnel (GPR%), insurance (GPR%), taxes (GPR%), utilities (GPR%), management fees (GPR%), administrative (GPR%), capital expenditures (GPR%), and contract services (GPR%) where GPR% indicates that the variable is reported as a percentage of the Gross Potential Rent of the property.

Each of the 71 metro areas were weighted by the number of units included in metro area report. Standard errors were calculated using monotonically rescaled weights with mean of one.

Consistent with the preceding model, apartment marketing expenditures are positively associated with metropolitan-area turnover rates. This makes sense in that marketing expenditures are often intended to generate turnover by attracting residents from their current rental homes to the advertised apartment community. Among all 16 potential explanatory variables, marketing expenditures (as a percentage of gross potential rent) account for the largest proportion of variation in metropolitan-level turnover. This variable alone is associated with 25% of the metropolitan-level variation in apartment resident turnover.

Conversely, greater expenditures on management fees (measured as a percentage of gross potential rent) are negatively associated with metropolitan-area turnover. Such management expenditures often relate to hidden elements of customer service that can be important to retention. Previous studies have found management characteristics, such as the empathy, communication, cooperativeness, and friendliness of management, to be critical factors in resident satisfaction (Ahlbrandt & Brophy, 1976; Paris & Kangari, 2005). As mentioned previously, prospective residents are generally unable to ascertain the level of such management service elements in advance. The use of management fees may also indicate the employment of an external organization focused exclusively on management. The management service of such organizations may benefit from the effects of scale, focus, and competition.

The suggestion in the proposed model that expenditures on visible recruiting efforts (v) should increase turnover while expenditures on service (s) should decrease turnover is consistent with these results. The two most important expenditure variables in predicting metropolitan-level turnover are marketing (a visible recruiting item) and management (a service-oriented expenditure). In each case, the signs of the estimated coefficients are as predicted. These two expenditure variables explain over 37% of the variation in metropolitan-level apartment turnover.

Finally, the stepwise regression results also include a third variable, utilities expenditure. The connection between utilities expenditure and turnover is likely related to the distinction between individually-metered and master-metered apartments. In this dataset, both individually- and master-metered apartments were included in the analysis. The average turnover rate for individually metered apartment units was 60.3%. The average turnover rate for master-metered apartment units was 53.1%.

Service and Resident Satisfaction

Maintenance responsiveness is another key example of the kind of hidden service items inherent in apartment choice. However, the quality of maintenance responsiveness is difficult to ascertain from the NAA expenditure data, because it does not allow statistical controls for building age, building type, and construction

quality, which are the major drivers of these expenditures. For example, a property manager in a newly constructed apartment community may do an excellent job with maintenance requests, but still spend very little money. Conversely, the manager of an older, poorly constructed facility with significant accumulated deferred maintenance may have to spend much more on maintenance simply to stay within legal minimum requirements. Thus, higher maintenance expenditures may be associated with poorer facilities and lower maintenance satisfaction. Consequently, a comparative analysis of maintenance issues is best approached from the perspective of outputs (resident satisfaction), rather than inputs (maintenance expenditures).

The issue of apartment maintenance is an item critical to resident satisfaction. A 1992 National Association of Home Builders' (NAHB) survey of renters found that "quality of maintenance" was the third most likely current problem to be listed by apartment renters, behind only "heavy traffic" and "crime" (Ahluwalia, Crowe, & Corletta, 1992). Fully 43% of apartment residents listed "quality of maintenance" as a problem in that survey. Separately, 22% of all apartment residents indicated they would be willing to pay higher rent for improved maintenance (Ahluwalia, Crowe, & Corletta, 1992).

Table 2. Impact of Satisfaction with Building Maintenance in Rented Multifamily Units – Weighted Means 2005 American Housing Survey

Rating of Unit as a Place to Live	Satisfaction with Building Maintenance		
	Completely Satisfied	Partly Satisfied	Dissatisfied
10	23.84%	6.17%	3.48%
9	14.31%	7.20%	1.57%
8	31.44%	23.23%	12.19%
7	16.59%	26.57%	14.35%
6	5.90%	13.29%	11.61%
5	5.94%	16.14%	25.47%
4	1.01%	3.13%	7.14%
3	0.53%	2.67%	7.81%
2	0.11%	0.59%	7.00%
1	0.34%	1.01%	9.36%
Average rating of unit	8.06	6.81	5.19
Percent in each category	70.41%	22.76%	6.83%

Note: Rating of units as a place to live is on a scale of 1 (lowest) to 10 (highest).

Table 2 displays weighted cross-tabulation results from multifamily renters in the national 2005 American Housing Survey. The weighting applied projects the original sample to a national population (U.S. Department of Housing and Urban Development, 2006). Results reflect answers from two questions in the

survey. Residents are asked, “On a scale of 1 to 10, how would you rate your unit as a place to live? Rating (10 is best, 1 is worst).” In addition, renters are asked, “On maintenance of the building, are you completely satisfied, partly satisfied, or dissatisfied?” The results in Table 2 suggest that for residents of rented multifamily units, maintenance satisfaction can strongly influence overall residential satisfaction. About 30% of residents in rented multifamily housing were not completely satisfied with their building maintenance. Residents satisfied with building maintenance were over 7.5 times more likely to give the unit an overall “9” or “10” rating than were residents dissatisfied with building maintenance. Correspondingly, residents dissatisfied with building maintenance were over 36 times more likely to give the unit an overall “1” or “2” rating than were residents satisfied with building maintenance. This supports the notion that maintenance responsiveness, although largely unobservable to prospective residents, can have a dramatic impact on the residential satisfaction of current residents.

Prospective Resident Interests

While service-oriented features such as management empathy and maintenance responsiveness clearly have a connection to resident satisfaction, these features are difficult for prospective residents to ascertain in advance. To the extent that marketing and sales personnel regularly under-represent current resident dissatisfaction, there may be no effective way for a prospective resident to ascertain service levels. As such, prospects may focus exclusively on the observable and verifiable features of the apartment, such as price, location, and size. Surveys of renters conducted by the NAHB indicate that this assessment is accurate. In the 1992 NAHB renter survey, the most commonly listed reasons for choosing the present apartment were rent level, followed by location, neighborhood/community, apartment design/size, and apartment availability (Ahluwalia, Crowe, & Corletta, 1992). The 2002 NAHB renter survey found the same top five reasons with the exception that apartment availability and design/size exchanged relative positions (National Association of Home Builders, 2002).

A similar analysis can be conducted using data from the American Housing Survey. In the 2005 American Housing Survey, recent movers were asked, “Now considering your home, what attracted you to THIS housing unit?” with a list of possible options. The selected reasons were recorded and the follow-up question was asked, “What was the MAIN reason you chose this housing unit?” Table 3 reflects the frequency with which a particular item was listed as the main reason for selecting the particular housing unit. Table 3 also compares the importance of different items among residents of rented multifamily housing and homeowners. The means shown are from the 2005 American Housing Survey and are weighted to project to a national population but are limited to those who moved to their current residence in 2004 or 2005.

Table 3. Primary Reason for Choosing this Particular Housing Unit among Recent Movers – 2005 American Housing Survey (weighted)

Primary Reason Given	Multifamily Renter	Homeowner	Difference	Comparative Odds Multifamily Renter/ Homeowner
Financial reasons	33.8%	22.6%	11.2%	1.50***
Other	17.7%	14.2%	3.5%	1.25***
Room layout/design	15.7%	25.8%	-10.1%	0.61***
Size	13.8%	11.9%	1.9%	1.16
Only one available	7.4%	1.6%	5.8%	4.58***
Exterior appearance	2.9%	4.7%	-1.8%	0.63***
Yard/trees/view	2.6%	6.2%	-3.7%	0.41***
Not applicable	2.4%	3.5%	-1.1%	0.68***
Quality of construction	1.7%	5.5%	-3.8%	0.31***
All reasons equal	1.4%	3.2%	-1.8%	0.44***
Kitchen	0.6%	0.7%	-0.1%	0.85

*** t-test indicates difference significant $p < .001$

Note: Recent movers include those having moved in 2004 or 2005.

Similar to the results of the NAHB surveys, the most common primary reasons for apartment choice given by recent mover apartment residents were financial reasons, room layout, size, and availability. As compared to homebuyers, the AHS results show a much stronger emphasis on financial reasons and availability as critical issues for apartment selection by residents of rented multifamily housing. Multifamily renters were 1.5 times as likely to have listed financial reasons as the primary driver for residence selection as compared to homebuyers. Restrictions on multifamily construction may partially explain why availability was more than 4.5 times more likely to be an issue for multifamily residents of rented multifamily housing as compared to homebuyers. As expected, prospective multifamily residents in both surveys appear to be focusing almost exclusively on observable “hard” characteristics, particularly price and design/size, instead of the difficult-to-ascertain “soft” characteristics such as management empathy or maintenance responsiveness. This is consistent with the posited framework where a high-service approach produces satisfaction among current residents, but does little to attract prospective residents.

Discussion

To the extent that property managers invest less in resident retention than is socially optimal—whether through the operations of the proposed model or some other mechanism—what possibilities exist to mitigate such results?

Lease Termination

A fundamental problem incorporated in the proposed model is information asymmetry. Many issues critical to resident satisfaction cannot be observed by prospective residents. Combined with this lack of knowledge is the substantial initial commitment required to become a resident. Most renters commit to a 12-month lease. Only 18% of renters in the 2002 NAHB survey indicated they had less than a 6-month lease (National Association of Home Builders, 2002). Because initial commitment levels are high, due both to lease terms and to the costs of moving, once residents experience inadequate service levels, they are already locked in to an extended period of residency. This information asymmetry, combined with lengthy initial commitment obligations, creates incentives for managers to deemphasize service and retention.

In other consumer contexts, simply reducing the contractual commitment level would help consumers to avoid this trap. In the current context, an example would be legislation allowing residents to leave with 30 days notice regardless of stated lease terms. Within the suggested economic model, this would increase the returns to retention expenditures. In terms of the previous model, the occupancy level returns to service expenditures are

$$\frac{\partial [(1 - k) \times r \times p \times f'(s)]}{\partial s_i}$$

Mandating a 30-day termination option would drop the k term to zero for the following month, as no residents are contractually obligated to return, thus increasing the total returns to service investments, s . While this approach would incentivize retention expenditures by managers, and mitigate the penalty of asymmetric information, it introduces its own problems. Much of the asymmetric information penalty would remain because, regardless of the contractual obligations, moving is costly. Consequently, prospective residents must make a significant investment in time and financial resources regardless of the lease terms. Residents cannot recover these sunk costs and must pay them again in the event of a future move. Further, while such a policy incentivizes managers to focus on resident satisfaction and retention, it simultaneously encourages transience from the resident's perspective by removing contractual barriers to mobility. Thus, such a policy may increase both satisfaction and mobility. It is by no means clear that such an outcome would produce a net social benefit.

Consumer Education

Another approach to limiting the problem is to make service more transparent to prospective residents. One current market trend that may address this problem in some sectors is the movement toward industry consolidation and national branding. Since 1990 the market capitalization of Real Estate Investment Trusts (REITs) has grown more than 5000%, from \$8.7 billion in 1990 to \$438 billion in 2006 (National Association of Real Estate Investment Trusts, 2007). This trend has also driven consolidation in the multifamily rental housing market. Some companies have used their size to drive a brand-oriented, high-service strategy (see, e.g., Post Properties, 2007). Under this model, residents become familiar with the company's high level of service. When outside factors precipitate the need for a move, residents are more likely to move to another of the company's properties either in the same metropolitan area, or in some other state. If such companies deliver consistent service levels across properties, then the service-level becomes transparent, at least to former residents of other branded properties. While encouraging, this strategy has been employed largely by companies operating at the high end of the rental market, and thus may have limited effect for the bulk of apartment residents.

Given that the goal is to make service levels transparent to prospective consumers, traditional consumer advocacy approaches may prove particularly useful. Consumer comment Web sites for apartment residents have grown dramatically in recent years (James & Carswell, 2007). While these can be good sources of information, they can also be misused by property managers making false positive posts. An approach similar to that used by national consumer products testing organizations would likely be unworkable because the apartment market is so fragmented. However, it might be possible for local government entities to fund and publish resident satisfaction surveys that would provide information similar to consumer comment Web sites, but with better controls on the identity of survey recipients. Thus, prospective residents could be provided with satisfaction rankings for different apartment properties in the area, further increasing the benefits of expenditures on retention and services. Given the costs of apartment resident transience and "churn" to local schools districts and communities, the expense of producing this kind of consumer information would seem to be a wise investment.

Legislative Mandate

In some areas, governments have implemented more forceful policy approaches. One such approach is to pass legislation mandating a higher minimum level of maintenance. Such policies include building code requirements and enforcement, as well as indirect approaches such as allowing resident "repair and deduct" or rent withholding. These legislative mandates can increase investment in

building maintenance, especially for the most neglected properties. However, the resulting systems can also be administratively burdensome. Direct enforcement of code provisions requires significant personnel commitments. Indirect renter rights approaches may create significant burdens on the judicial system.

For example, residents facing eviction for non-payment of rent may habitually claim “repair and deduct” or rent withholding as the underlying cause. Adjudicating such disputes inevitably causes eviction processes to become longer and more expensive. This not only raises the cost of renting in general, but also specifically raises the cost of accepting financially at risk residents. This is particularly problematic in that these financially at risk residents may also be most at risk for homelessness, in the absence of property managers willing to take a chance on accepting them into residency. Aside from increasing costs for renters of the lowest financial means, such direct legislation does little to improve conditions for the bulk of renters whose residences qualify as habitable, but who may experience consistently poor service. Additionally, while such proscriptive legislation may generate compliance with “hard” codes (at a cost), it does little to encourage the “soft” issues of customer service and satisfaction.

Tax Incentive

Rather than taking a “stick” approach of code enforcement with its attendant enforcement and administrative costs, another approach would be to offer the “carrot” of tax incentives for properties that successfully generate resident longevity. The Congressional Joint Committee on Taxation (2007) estimates that between 2006 and 2010 over \$400 billion in homeownership mortgage interest tax deductions will be given in an effort to promote homeownership. However, much of the social benefit from homeownership stems from reduced residential transience (DiPasquale & Glaeser, 1999; Glaeser, Laibson, & Sacerdote, 2002). To the extent that stability of renters within a community generates many of the same benefits, it may be profitable for communities to incentivize such activity.

A tax benefit paid directly to long-term residents in rental housing, however, would not alter the economic framework that generates residential dissatisfaction. It would generate reduced mobility, not through the mechanism of increased satisfaction, but through residents’ increased willingness to accept dissatisfaction. The direct-to-renter benefit could become, in essence, a subsidization of accepting residential dissatisfaction.

A more beneficial result would come from a tax benefit to property owners. Managers would receive greater benefits from achieving resident retention than from prospective resident recruitment. A property tax break based upon the proportion of units with long-term residents—perhaps defined as those with residencies over two years—would emphasize the importance of both stability and resident satisfaction. Assuming the tax benefit was part of a revenue-neutral tax

proposal (simultaneously raising underlying property taxes on rental properties, while lowering taxes on rental properties with longer-term residents) it could generate net benefits for all parties simultaneously. Schools and communities would benefit from the reduced transience and resulting potential increase in social capital formation. Residents would benefit from the increased economic incentive to keep their satisfaction high in order to retain them at the property. Multifamily property owners would benefit as the increased incentive for retention began to reverse the economic “prisoner’s dilemma,” gradually reducing industry-wide turnover and its associated costs.

Higher Education

Finally, given that research, including this study, has consistently shown the importance of property managers in generating resident satisfaction, the current development of residential property management educational programs at several universities may produce more wide reaching social benefits than previously considered. To the extent that higher quality, better-trained managers enter the apartment management industry, one might naturally expect to see an increase in residential satisfaction and decrease in mobility among this most transient group of residents. Certainly, given the high levels of resident turnover common in the industry today there is much room for improvement.

Limitations

The economic model presented here is consistent with the results produced in the data analysis. However, the findings must still be considered quite preliminary. The NAA analysis is based upon 71 observations of metropolitan summary level data, rather than individual unit-level observations. Although the AHS analysis does use unit-level microdata, those results do not directly demonstrate the real-world operation of the proposed model. Ideally, future research would provide better data scenarios to more conclusively test the validity of the proposed model. Resident satisfaction and mobility continue to be critical issues for successful property managers and for successful communities. Understanding the interlocking systems of incentives that drive these issues in multifamily rental housing is an important first step to reducing the relative dissatisfaction and transience characteristic of today’s renter. While the evidence provided regarding the proposed model is by no means conclusive, it does suggest the importance of understanding the system as a whole when attempting to address these issues.

References

- Adam, E. K., & Chase-Lansdale, P. L. (2002). Home sweet home(s): Parental separation, residential moves, and adjustment problems in low-income adolescent girls. *Developmental Psychology, 38*(5), 792-805.
- Ahlbrandt, R. S., Jr., & Brophy, P. C. (1976). Management: An important element of the housing environment. *Environment and Behavior, 8*(4), 505-526.
- Ahluwalia, G., Crowe, D., & Corletta, R. J. (1992). *What renters want*. Washington, DC: National Association of Home Builders.
- Ahn, N., & Blázquez, M. (2007). *Residential mobility and labor market transitions: Relative effects of housing tenure, satisfaction, and other variables* (Working Paper 2007-05). Madrid, Spain: Universidad Autónoma de Madrid, Fundación de Estudios de Economía Aplicada.
- Axelrod, R. (1984). *The evolution of cooperation*. New York: Basic Books.
- Boyle, P. J., Kulu, H., Cooke, T., Gayle, V., & Mulder, C. H. (2006). *The effect of moving on union dissolution* (MPIDR Working Paper WP-2006-002). Rostock, Germany: The Max Planck Institute for Demographic Research.
- Congressional Joint Committee on Taxation. (2007). *Selected data related to the federal tax system* (JCX Publication No. 11-07). Washington, DC: Congressional Joint Committee on Taxation.
- Corfman, K. P., & Lehman, D. R. (1994). The prisoner's dilemma and the role of information in setting advertising budgets. *Journal of Advertising, 23*(2), 35-48.
- DiPasquale, D., & Glaeser, E. (1999). Incentives and social capital: Are homeowners better citizens? *Journal of Urban Economics, 45*(2), 354-384.
- Eckenrode, J., Rowe, E., Laird, M., & Brathwaite, J. (1995). Mobility as a mediator of the effects of child maltreatment on academic performance. *Child Development, 66*(4), 1130-1142.
- Elsinga, M., & Hoekstra, J. (2005). Homeownership and housing satisfaction. *Journal of Housing and the Built Environment, 20*, 401-424.
- Gibbons, R. (1992). *Game theory for applied economists*. Princeton, NJ: Princeton University Press.
- Glaeser, E. L., Laibson, D., & Sacerdote, B. (2002). An economic approach to social capital. *The Economic Journal, 112*, F437-F458.
- Harmon, L. C., & McKenna-Harmon, K. M. (1994). The hidden costs of resident dissatisfaction. *Journal of Property Management, 59*(3), 52-54.

- James, R. N., III, & Carswell, A. T. (2007). *Home sweet apartment: A text analysis of satisfaction and dissatisfaction with apartment homes*. Manuscript submitted for publication.
- Magdol, L. (2002). Is moving gendered? The effects of residential mobility on the psychological well-being of men and women. *Sex Roles, 47*, 553-560.
- National Apartment Association. (2005). *2005 Survey of income and expenses in rental apartment communities*. Alexandria, VA: National Apartment Association.
- National Association of Home Builders. (2002). *What renters want*. Washington, DC: National Association of Home Builders.
- National Association of Real Estate Investment Trusts. (2007). *Historical REIT industry market capitalization: 1972-2006*. Available at www.nareit.com/library/industry/marketcap.cfm
- Paris, D. E., & Kangari, R. (2005). Multifamily affordable housing: Residential satisfaction. *Journal of Performance of Constructed Facilities, 19*(2), 138-145.
- Post Properties, Inc. (2007). *Post Properties 2006 annual report*. Atlanta, GA: Post Properties, Inc.
- Putnam, R. (1995). Bowling alone: America's declining social capital. *Journal of Democracy, 6*, 65-78.
- Rohe, W. M., & Stegman, M. A. (1994). The impacts of home ownership on the self-esteem, perceived control and life satisfaction of low income people. *Journal of the American Planning Association, 60*, 173-184.
- Rossi, P. H., & Weber, E. (1996). The social benefits of homeownership: Empirical evidence from national surveys. *Housing Policy Debate, 7*, 1-81.
- SAS Institute, Inc. (2004). *SAS 9.1.3 Help and documentation*. Cary, NC: SAS Institute, Inc.
- U.S. Census Bureau. (2006). *Current population survey, 2005 annual social and economic supplement: Table 3, general mobility, by region, sex, relationship to householder, marital status, and tenure: 2004 to 2005*. Available at www.census.gov/population/socdemo/migration/cps2005/tab03-1.xls
- U. S. Department of Housing and Urban Development. (2006). *Codebook for the American Housing Survey, public use file: 1997 and later, Version 1.8*. Washington, DC: Office of Policy Development and Research, U. S. Department of Housing and Urban Development.
- Wang, X. H., & Yang, B. Z. (2003). Classification of 2X2 games and strategic business behavior. *American Economist, 47*(2), 78-85.