The Impact of Assisted Housing Developments on Concentrated Poverty

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Abstract

The common wisdom is that assisted housing developments have both a direct and an indirect impact on concentrated poverty. The indirect effects are based on the notion that the negative stereotypes associated with such developments spill over into the surrounding neighborhoods, causing people who can leave to do so or avoid the neighborhood and leaving behind only the more disadvantaged segments of society. An increase in concentrated poverty in the neighborhood surrounding the development results. Prior studies, relying on aggregated data, are consistent with this thesis. The overwhelming majority of the statistical models in my study, however, found these relationships to be spurious. Once individual and macrolevel characteristics were controlled for, the relationships disappeared.

These findings imply that assisted housing developments will not typically contribute to concentration of poverty in surrounding neighborhoods and suggest that much of the negative reaction to assisted housing developments is unwarranted.

Keywords: Low-income housing; Neighborhood; Poverty

Introduction

Public housing and other types of assisted housing developments (AHDs) have frequently been criticized for contributing to the concentration of poverty characteristic of many inner-city neighborhoods (Carter, Schill, and Wachter 1998; Holloway et al. 1998; Massey and Kanaiaupuni 1993; Schill and Wachter 1995). The direct effects of AHDs on concentrated poverty are fairly obvious, and there is little disagreement in the scholarly literature on this matter. Because AHDs are targeted to the poor and most developments are spatially compact, almost by definition, AHDs concentrate poverty within a geographically circumscribed area. There is less of a consensus, however, on the indirect or spillover effects of AHDs on surrounding neighborhoods. The spillover thesis suggests that AHDs stigmatize surrounding neighborhoods and alter the migration patterns of middle-class households, causing them to flee and avoid these neighborhoods.

The social science evidence on this matter has generally found that AHDs do concentrate poverty, but it is not clear whether this effect occurs through direct or indirect impacts. All of the previous work on this topic has used data aggregated at the census-tract level, instead of

individual-level data, thus making it impossible to differentiate between the direct and the indirect effects of AHDs on surrounding neighborhoods. This article examines the spillover effects of AHDs on neighborhood poverty by analyzing how individual migration patterns are affected by the presence of such developments in a neighborhood.

Theoretical background

AHDs are often viewed as a locally unwanted land use (LULU) because of the detrimental impacts these types of developments are perceived to have on surrounding neighborhoods. Husock (2003) likens them to "death stars that kill off existing city life and abort any chance for new life in the vicinity" (95). Although he does not substantiate his claims, they do represent the popular wisdom among a sizable portion of the populace as evidenced by the stringent NIMBYism ("not in my backyard" reaction) that most new AHDs face.

Among the putative detrimental impacts on surrounding neighborhoods are declining property values, increased crime, white flight, and concentration of poverty (Freeman and Botein 2002). But the grounds for these claims are not self-evident. This section develops a theoretical framework for thinking about why AHDs might negatively impact surrounding neighborhoods in a way that would result in increased concentration of poverty.

The notion that AHDs somehow increase the concentration of poverty in surrounding neighborhoods ultimately stems from American beliefs about poverty and the role of the neighborhood in American life. The dominant ethos in America divides the poor into two groups, the deserving poor and the undeserving poor. The latter are the poor who do not conform to society's expectations regarding work, family life, and crime (Jencks 1992) and who are consequently viewed as undeserving of advancement. This notion of an undeserving poor is closely linked to the American ethos of rugged individualism and the belief that America is the land of opportunity. American individualism suggests that people should be self-reliant and work hard and that in return they will become upwardly mobile. Being poor in the land of opportunity suggests some character defect that prevents people from taking advantage of the abundant opportunities around them. Receiving government assistance violates the principle of self-reliance, which suggests that people should stand on their own two feet (Katz 1993).

Racial prejudice also informs prevailing views of poverty and plays a role in stigmatizing AHDs. The legacy of American racism is one that views blacks as having less of a work ethic and being more willing to

rely on public assistance than other racial groups (Schuman, Steeh, and Bobo 1985). Consequently, it is the black and to a lesser extent the Latino poor who are typically perceived as undeserving (Quadagno 1994). The concept of an undeserving poor provides a convenient explanation for the plight of many nonwhites: If only they conformed to societal norms, they would be able to escape their impoverished condition.

Given these perceptions of poverty and race, it is not surprising that means-tested public assistance programs are highly stigmatized. Moreover, the overrepresentation of blacks in AHDs further stigmatizes these developments. Consequently, except for those who are elderly or disabled, AHD residents are assumed by many to be part of the undeserving poor who cannot carry their own weight and who lack the get-up-and-go to make it in this land of opportunity.

Finally, because of the reputation of some AHDs, such as the former Pruit-Igoe development in St. Louis and the Cabrini Green and Robert Taylor developments in Chicago, AHDs in general have become notorious as places of crime, disorder, and despair (Popkin et al. 2000; Venkadesh 2000). This notoriety only serves to reinforce the perception that residents of these places are part of the undeserving class and prone to misbehavior. Consequently, this group ranks near the bottom of the hierarchy of social classes (Williamson 1974).

The other reason for the purported effects of AHDs relates to the role of neighborhoods in American life. They are obviously physical spaces where people live, but they are much more than that. Where one lives influences where one goes to school, the types of people one interacts with, and the types of jobs to which one may have access. Thus, neighborhoods represent a major component of the opportunity structure for children and, to a lesser extent, for adults (Galster 1995).

Furthermore, neighborhoods are one of the mechanisms used by Americans to sort themselves by socioeconomic status. Living in a desirable or exclusive neighborhood signals that one has arrived and is at the top of the class hierarchy. Raising one's children in such a place increases their chances of staying at the top as well. Needless to say, AHDs, occupied by the undeserving poor, do little to add to a neighborhood's exclusivity. The prevailing ethos on poverty and the role of neighborhoods in American life thus leads to the thinking that AHDs may have detrimental impacts on surrounding neighborhoods, including concentration of poverty.

The intersection of American notions of poverty and the importance of neighborhoods in determining social status therefore turn AHDs into LULUs to be avoided if at all possible. This fear of AHDs is

driven, in part, by the belief that the negative traits associated with them, including criminal activity and other nefarious behavior, will somehow encroach on surrounding neighborhoods.

Concentration of poverty and AHDs

Because of prevailing notions of poverty and the role of neighborhoods, then, there exists the perception that AHDs affect the desirability of neighborhoods and consequently alter the migration patterns of households moving into and out of surrounding neighborhoods. Goldstein and Yancey (1986) call this the spillover thesis. It posits that in addition to their direct impacts, AHDs also concentrate poverty by stigmatizing the surrounding neighborhood (Carter, Schill, and Wachter 1998; Goldstein and Yancey 1986). Wishing to avoid the stigma attached to AHDs and fearful that their neighborhood will become an extension of these pathological developments, people experience a fight-or-flight response. The NIMBYist reaction to AHDs is well-known, and their pariah-like status can cause the dynamics of residential mobility in the surrounding neighborhood to change: Those with the means to do so flee the surrounding neighborhood, and potential in-movers, to the extent they have other residential options, choose to live elsewhere. With the better-off households avoiding or leaving the neighborhood, the area surrounding developments becomes poorer, leading to an increase in concentrated poverty above and beyond that associated with the addition of AHD residents to the neighborhood.

Related previous research on AHDs and concentrated poverty

Several scholars have attempted to empirically test the hypothesis that AHDs indirectly increase concentrated poverty through spillover effects. Massey and Kanaiaupuni (1993), for example, analyzed the impact of public housing on concentrated poverty in Chicago. They found that the development of public housing in a neighborhood was associated with an increased poverty rate in later years and that a neighborhood's proximity to a public housing development was also positively associated with its poverty rate.

In examining the effect of public housing on neighborhood poverty in Philadelphia, Schill and Wachter (1995) found that higher concentrations of public housing in a neighborhood were positively related to increased neighborhood poverty rates there and that as the distance from a large public housing development increased, the poverty rate of a census tract declined. In an extension of this earlier work, Carter, Schill,

and Wachter (1998) examined the relationship between concentrated poverty and the presence of public housing in a neighborhood in four cities—Boston, Cleveland, Detroit, and Philadelphia. In each city, at least one of their measures of public housing had the expected sign and was statistically significant, leading them to conclude that public housing had a positive impact on neighborhood poverty.

Most recently, Holloway et al. (1998) explored the effects of public housing on the concentration of poverty in Columbus, OH. Although most of the models they used showed a positive and significant link between the poverty rate in a neighborhood and its proximity to public housing and the development of public housing, there were several instances in which the relationship was not statistically significant. The weight of evidence, then, is consistent with the notion that AHDs concentrate poverty through spillover effects.

Although the results of prior research are consistent, these findings should be interpreted cautiously. A spillover effect might be due to other causes. Most obviously, because AHDs are targeted toward impoverished households, the placement of these developments in a neighborhood adds poor persons, and this might increase the poverty rate regardless of whether a spillover effect occurs.

Galster (1995) also described another possible scenario, in which the increasing concentrations of poverty in neighborhoods receiving public housing are attributable to increasing poverty within the public housing population. Spain (1995) has described how changes in policies governing public housing admission and urban demographics have led over time to an increasingly impoverished clientele. It is quite possible, therefore, that the poverty rate in a public housing development could have increased over the course of a decade while the poverty rate in the surrounding neighborhood remained unchanged. The neighborhood's overall poverty rate would have increased, however, because the poverty status of public housing residents is included in a neighborhood's overall poverty rate.

It is also possible that public housing was targeted toward neighborhoods that were likely to experience increasing levels of poverty over ensuing decades. In several case studies, scholars have shown that in the 1950s and 1960s, public housing was spatially targeted toward poor black neighborhoods (Bauman 1987; Hirsch 1983; Myerson and Banfield 1955). The quantitative evidence compiled by social scientists has also shown that public housing built in this era was spatially targeted toward poor black communities (Goldstein and Yancey 1986; Massey and Kanaiaupuni 1993). Moreover, Freeman and Rohe (2000) showed that even into the 1980s, assisted housing of all types was still being

spatially targeted toward poor minority neighborhoods. Scholars have also shown that the types of neighborhoods where ADHs have been built—disadvantaged minority communities—are also the types of neighborhoods that have been susceptible to increasing concentrations of poverty in the past few decades (Galster and Mincy 1993; Jargowsky 1997; Kasarda 1993; Massey and Denton 1993; Wilson 1987). Consequently, although previous research has generally shown that public housing has been correlated with increasing concentrations of poverty, it is not clear whether these neighborhoods would have experienced increasing concentrations of poverty if AHDs had not been built there. Indeed, Holloway et al.'s (1998) research shows that when the propensity for a neighborhood to slip into poverty was controlled for, the impact of AHDs on concentration of poverty was not statistically significant in all of the models estimated.

Because all of the prior studies relied on aggregate-level data and because the census does not provide poverty rates for neighborhoods that exclude public housing residents, these earlier efforts cannot distinguish between the direct and indirect impacts of AHDs on concentrated poverty.

This theoretical discussion and review of the literature suggest that AHDs might contribute to the concentration of poverty by stigmatizing the surrounding neighborhood and thereby encouraging the nonpoor to move out and by deterring the nonpoor from moving in. To test this possibility, this article will analyze how individual migration choices are affected by the presence of an AHD in a neighborhood. Using individual-level data, instead of aggregate census-tract data, makes it easier to differentiate between the indirect and the direct effects of AHDs on concentration of poverty.

Methodology

If AHDs are responsible for concentration of poverty, as the spillover thesis suggests, migration into and out of neighborhoods containing them should be class selective. Specifically, nonpoor individuals should leave these neighborhoods more quickly than they do otherwise similar neighborhoods. Conversely, nonpoor individuals should be less likely to enter neighborhoods with AHDs. To test these hypotheses, statistical models of interneighborhood mobility were employed. Neighborhoods were defined as census tracts.

Timing—when an AHD is developed in a neighborhood—should be an important determinant of whether such developments affect neighborhood migration. Recently developed AHDs would be expected to have a

larger effect on mobility decisions, particularly exit decisions. From a policy perspective, we might be more interested in how recently built AHDs are affecting neighborhood dynamics than in the developments built in an earlier era under different assumptions and expectations. For that reason, this research will focus on recently developed AHDs, which will be defined shortly. The model also controls for other factors associated with interneighborhood mobility, which will also be explained.

Distinctions were made between the different programs responsible for developing AHDs. Public housing is the oldest and most notorious (perhaps undeservedly) of the varying project-based assisted housing programs. For this reason, public housing developments were differentiated from other types of project-based housing assistance sponsored by the Department of Housing and Urban Development (HUD), including Section 8 New Construction, Federal Housing Administration (FHA), and Section 236 developments. A final distinction was made for Low-Income Housing Tax Credit (LIHTC) developments, a federal program that is actually managed by state housing entities. Thus, the analysis distinguished between three types of assisted housing: LIHTC, public housing, and all other types of HUD-sponsored housing (hereafter referred to as Other HUD). These distinctions will shed light on whether a particular type of AHD is more associated with class-selective neighborhood migration.

Methodology for detecting class-selective out-migration

This section outlines other factors that might cause the hypothetical relationships described earlier and that hence must be controlled for so as not to draw spurious conclusions. As noted previously, AHDs appear to be targeted toward neighborhoods that are especially susceptible to concentration of poverty. Middle-class individuals might be motivated to move out of or avoid these neighborhoods even if AHDs were not built there. Indeed, South and Crowder (1997) show that an individual's socioeconomic status is positively associated with both leaving and avoiding a poor neighborhood. This finding suggests that any analysis of the effects of AHDs on poverty concentration control for a set of individual and ecological factors associated with middle-class flight from poor neighborhoods in general.

William Julius Wilson (1987) first popularized the notion that middle-class blacks were fleeing poor inner-city neighborhoods and leaving behind neighborhoods bereft of any vertical class integration. His hypothesis implies that the poverty rate of the neighborhood should be controlled for in the analysis. Also, class-selective migration away from older neighborhoods in central cities has been occurring throughout the

20th century (Palen 1995). This is consistent with the filtering model of neighborhood change, which posits that more affluent households will move to the urban periphery to take advantage of newer housing being developed there. To the extent that, as recent research suggests, assisted housing has been targeted to older central-city neighborhoods (Rohe and Freeman 2001), the analysis should take this into consideration. I will attempt to control for this by factoring in the age of the neighborhood's housing stock.

Racial composition is another neighborhood trait that is thought to influence class-selective migration. The spatial assimilation model (Massey and Denton 1985) suggests that in predominantly minority communities, the more affluent members of the group are the first to leave as they seek to improve their status and increase their access to residential amenities by gaining proximity to white neighborhoods. It might be expected, therefore, that middle-class minorities would be fleeing and avoiding neighborhoods with high concentrations of minorities as they attempt to move into predominantly white areas. Likewise, the literature on residential segregation provides ample evidence that high levels of minority concentration are associated with whites fleeing and avoiding certain neighborhoods (Crowder 2000; Denton and Massey 1991; Galster 1990; Lee and Wood 1991). To the extent that whites tend to be of higher socioeconomic status, this too could result in class-selective migration away from neighborhoods of the type in which AHDs are located. Measures of the racial composition of a neighborhood should therefore be controlled for in the analysis.

The metropolitan context may also play a role in determining how likely people are to move from a neighborhood. Metropolitan areas with more vacancies and newer housing provide more opportunities for mobility, and hence the analysis should hold these factors constant.

Finally, any research on residential mobility should control for factors associated with people moving in general. The literature on residential mobility suggests that life-cycle factors are the prime catalysts behind residential mobility and that they therefore should be controlled for (Fielding 1994; Rossi 1980). An individual's age, gender, marital status, and parental status will be included to control for these factors. Tenure status and the length of time in the neighborhood are included in the model because homeowners are likely to have higher transaction costs (finding a broker, finding a buyer, etc.) that make moving more expensive and because people who have been residing in the neighborhood for a while may have strong ties that they do not want to disrupt. In addition, measures of individual socioeconomic status, including income and educational attainment, are also included.

Thus, to predict a nonpoor individual's likelihood of moving out of a neighborhood, my model will have the presence of AHDs in that neighborhood as the independent variable and control for poverty rate, racial composition, the age of the housing stock, and the characteristics of the surrounding housing market, as well as the individual's life cycle and socioeconomic status. All of these factors have been identified as catalysts for class-selective migration in general and are likely to be correlated with the location of AHDs. In addition, the analysis will control for individuals' gender and position in the life cycle.

Method for detecting effects on in-migration

Because AHDs are concentrated in certain types of neighborhoods, the analysis of how they affect in-migration must account for differences between AHD and non-AHD neighborhoods. Otherwise, we might observe the non-poor-avoiding neighborhoods containing AHDs, but this pattern might be due to avoidance of the types of neighborhoods where AHDs are located in general and not AHDs specifically. Ideally, migration by the nonpoor into "control" neighborhoods that are the same as AHD neighborhoods except for the presence of an AHD would be compared with migration into AHD neighborhoods. If AHDs serve as a deterrent to nonpoor households, as the spillover thesis suggests, then the nonpoor would be less likely to move into a neighborhood with an AHD than into an otherwise similar neighborhood.

Lacking any obvious, naturally occurring control neighborhoods that could be used for comparison, propensity models were used to identify such neighborhoods. Propensity models are regression models that predict the likelihood of a particular outcome, in this case, a neighborhood's having an AHD. Such models are used to assign each neighborhood a propensity score, or predicted probability of having an AHD. Captured in this propensity score are the neighborhood characteristics associated with having an AHD. Neighborhoods are then stratified based on their propensity for having an AHD. The likelihood of people moving into a neighborhood with an AHD can then be contrasted with the likelihood of their moving into a non-AHD neighborhood that is just as likely to have an AHD, based on their similar propensity scores. By limiting the comparison to neighborhoods with similar propensity scores, we increase the likelihood that these neighborhoods are similar in terms of the characteristics that predict the presence of an AHD. This approach increases the confidence we can place in attributing any differences between mobility rates into AHD and non-AHD neighborhoods to the presence of AHDs.

The procedure was to develop propensity models based on those used by Freeman and Rohe (2000) and Rohe and Freeman (2001) to predict where AHDs would be sited (see Rohe and Freeman 2001 for a fuller discussion of these models). Separate propensity models were estimated for each of the three types of AHDs (public housing, LIHTC developments, and Other HUD developments). The neighborhoods were then stratified into five categories based on their propensity scores. Dividing the sample this way controlled for the covariates that went into estimating the propensity scores (Rubin 1997; Smith 1997). This stratification was repeated three times, once for each of the three different types of AHDs.

After stratifying the neighborhoods based on their propensity scores, the likelihood of an individual's moving into a neighborhood with an AHD was contrasted with his or her likelihood of moving into a similar neighborhood, except for the fact that the comparison neighborhood lacked an AHD. Note here that the entire sample is used, not just the nonpoor segment. If poverty status distinguishes those who move into AHD neighborhoods from otherwise similar neighborhoods, this finding would be consistent with the notion that AHDs deter more affluent individuals from surrounding neighborhoods and exacerbate the concentration of poverty in that way. Thus, we have a model with moving into a neighborhood with an AHD as the dependent variable and poverty status as the independent variable. Neighborhood characteristics are controlled for using these propensity methods. It is not necessary to control for individual-level characteristics in this case since we are interested in how neighborhood characteristics affect in-migration. To the extent that the propensity method is successful and the only difference between the neighborhoods is the presence of an AHD, there is no reason for individual-level characteristics to influence decisions on entering the neighborhood. Tables that compare the characteristics of neighborhoods in the same strata but differing on whether they have an AHD are presented in the appendix. There are few statistically significant differences.

Data and measurement

This research links geocoded data from the Panel Study of Income Dynamics (PSID) with HUD's *A Picture of Subsidized Households* (PSH) (HUD 1997a). The PSID is a longitudinal survey of U.S. individuals and the families with which they reside (Hill 1992). Although the PSID oversampled blacks and the poor, if appropriately weighted, the sample is representative of the U.S. population. The PSID has been following the same individuals and their families since 1968. It is ideally

suited to the purposes of this study because it is the only panel data set that allows researchers to identify the census tract of the respondents. The PSH is HUD's database identifying the census tract of all federally funded AHDs, including public housing, Section 8 New Construction, Section 236, FHA-financed developments, and the LIHTC. HUD has also made available to me the construction completion dates of all developments.[1] That information can be used to establish when a development was completed in a census tract and then linked to the PSH to establish if and when the neighborhood of each PSID respondent received a development. These construction dates were used to classify all developments built after 1980 as "new." These are the developments that would be expected to exert the largest effects on neighborhood migration. Developments completed before 1980 are classified as "old." The focus of the analysis will be on the relationships between these new AHDs and neighborhood migration patterns. Note that all LIHTC developments are considered new since the program started in 1987. Table 1 provides frequency distributions for the various measures of AHDs for the PSID sample used in this study.

The data were also linked with 1990 Summary Tape File 3a (U.S. Bureau of the Census 1990) to obtain information on the census tract and the surrounding metropolitan region. The resultant data set has all of the individual-level data from the PSID, the characteristics of that individual's tract and other geographic entities from the census, and information on the presence of AHDs in that individual's tract. The analysis covers the period from 1986 to 1993, because the earlier years of the PSID do not include information on whether a person was living in an AHD or not and because 1993 was the most recent year for which PSID data were available when the research was being conducted.[2]

The longitudinal nature of the PSID makes it possible to determine an individual's place of residence at the time of the interview on an annual basis. To take advantage of the dynamic nature of the PSID, the data will be structured into a "person-year" format, where each observation

[1] A total of 18 percent of public housing, 2 percent of Section 8, 11 percent of Section 236, 1 percent of FHA, and 6 percent of LIHTC developments in the PSH database did not have census tract information. To the extent that this missing tract information is not randomly distributed throughout the PSH data, the analyses discussed later may be biased.

[2] Surveys that base housing assistance status on respondent self-reporting, such as the PSID, have been shown to suffer from misreporting (Shroder 2002). That is, respondents incorrectly report their housing assistance status. The bulk appears to be related to respondents misclassifying the type of housing assistance they receive. Because this analysis excludes respondents who claim to receive any type of housing assistance, these results are unlikely to be dramatically affected by respondent misreporting.

Table 1. **Frequency Distribution for Different Types of AHDs**

Type of AHD	Percentage of Neighborhoods with This Type of AHD
New public housing	4.2
New Other HUD	14.1
LIHTC	16.3
LIHTC > 249	1.9
LIHTC 100 to 249	2.4
LIHTC 50 to 99	3.4
LIHTC 1 to 49	8.5
New public housing > 249	.03
New public housing 100 to 249	1.2
New public housing 50 to 99	1.3
New public housing 1 to 49	1.4
New Other HUD housing > 249	.07
New Other HUD housing 100 to 249	4.7
New Other HUD housing 50 to 99	4.0
New Other HUD housing 1 to 49	4.6
Old public housing	8.4
Old Other HUD housing	8.5
N = 19,159	

represents the characteristics of an individual and that individual's environment in a specific year. In the first part of the analysis, which focuses on the impact of assisted housing on neighborhood in-migration patterns, a logistic regression model will be used to estimate the probability that a nonpoor individual will leave a neighborhood in a given year.[3] The independent and control variables, where the data allow, will vary over time.[4] The equation in the logistic regression analysis predicts whether an individual lived in the same neighborhood at time t as he or she did at time $t+1$. To avoid counting the one move made by a family several times (as would be the case if each family member's move were counted), the analysis will be limited to nonpoor individuals who are heads of household at time t. I likewise exclude individuals who claimed to live in AHDs during the analysis period because the

[3] Using the person-year format creates the possibility of dependence among observations. To address this problem, the random effects model that accounts for the dependence among observations coming from the same individual was estimated using XTLOGIT in Stata statistical software (release 6.0).

[4] The independent variable, the presence of assisted housing, can vary depending on when the development was built. Because the anticipation of an AHD could affect mobility, using the construction completion date may be misleading. Instead, all developments completed before 1990 were included in the presence of assisted housing for the years 1986 to 1989, and all developments completed after December 31, 1989, are included in the presence of assisted housing for the remaining years in the study period (1990 to 1993).

research question is focused on their impact on people who are not living in such developments. The last exclusionary criterion used was residence in a metropolitan area. Only those heads of household residing in a metropolitan area at time t were included in the analysis.

Dependent variables and independent variables modeling out-migration

Mobility out of a neighborhood will be measured as a binary variable taking on a value of 1 if the person was living in a different tract at time $t+1$ than he or she was at time t, and 0 otherwise. The independent variables of interest are the development of new AHDs. Developments already in place in a neighborhood would not be expected to exert much of an effect on mobility decisions. Therefore, the focus is on new AHDs, defined as developments constructed after 1980. Admittedly, this is an arbitrary cutoff. The presence of pre-1980 AHDs are included in the statistical models, however, as control variables to allow us to discern whether they still have any effects on mobility decisions even though, theoretically, they would not be expected to.

Conceptually, AHDs can be measured in a number of different ways. The mere presence of such housing may have an effect on class-selective migration into or out of neighborhoods. This calls for measuring the independent variable as a dummy equal to 1 if the neighborhood has AHDs and 0 otherwise. If AHDs cause class-selective migration, then the coefficient for this variable should be positive for nonpoor individuals.

Rather than a case of the mere presence of assisted housing causing class-selective migration, it may be that the number of units determines how assisted housing affects neighborhood migration. Moreover, the relationship between the number of units and neighborhood migration may not be linear. To test for these possible relationships, the presence of AHDs in a neighborhood was also operationalized by the following categorical variables representing varying numbers of assisted housing units: 1 unit to 50 units, 51 units to 99 units, 100 units to 250 units, and more than 250 units. Neighborhoods with no developments serve as the reference category.

Theory also suggests that the characteristics of the AHDs may be crucial in determining neighborhood migration. More specifically, the spillover thesis posits that it is developments occupied by residents perceived as part of the undeserving poor (able-bodied adults) and not developments for the elderly that are likely to cause class-selective

migration away from a neighborhood. As noted earlier, people of color are more likely to be viewed as deserving of their disadvantaged status. Thus, one might suspect that the spillover hypothesis, to the extent that it is true, manifests itself most forcefully when the occupants of the AHDs are black or Latino.

Another characteristic of the occupants of assisted housing that might affect the applicability of the spillover thesis is their age. Many of these developments are for the elderly, who are considered to be part of the deserving poor. Moreover, few people link the elderly with the increased crime, loitering, or unruly behavior often stereotypically associated with AHDs. Finally, elderly residents are much more likely to be white. More than half of the elderly residents in public housing are white, whereas only approximately 30 percent of all public housing residents are white (Goering, Kamely, and Richardson 1997). Thus, not much of a spillover effect is to be expected from elderly assisted housing, since developments are more likely to be occupied by whites and other tenants who are perceived to be part of the deserving poor.

The discussion in the preceding paragraphs suggests that the racial composition and age profile of the units should be taken into account in the analysis. Although the PSH contains information on the demographic composition of AHDs, using these data poses three problems. First, the PSH is based on 1997 occupancy data, while the period being analyzed extends only to 1993 and starts as early as 1986. Therefore, using demographic characteristics based on the PSH requires one to assume that these characteristics stayed relatively constant between 1986 and 1997. If the concern is whether the assisted housing is primarily for the elderly, this may be a reasonable approach. But with respect to racial composition, the assumption of stability between 1986 and 1997 seems less certain.

A second potential problem is that the PSH does not contain demographic information for LIHTC housing, which makes up a substantial portion of the AHDs in the PSH database. Using the demographic characteristics of the PSH would therefore require that many of the developments be ignored.

Finally, since many public housing authorities fail to report their tenant characteristics, there is a problem with missing data in the PSH, which becomes more acute when the characteristics of the AHDs are used.

For these reasons, an alternative approach based on the knowledge of a strong correlation between the demographic composition of the units and the demographic characteristics of the surrounding neighborhood (Goering, Kamely, and Richardson 1997) was used to address the

intriguing question of how the demographic characteristics of assisted housing might affect neighborhood out-migration. It is likely, for example, that the residents of assisted housing in neighborhoods with high concentrations of blacks are also likely to be black. In addition, Rohe and Freeman (2001) have shown that AHDs for elderly residents are much more likely to be located in predominantly white neighborhoods.

For the purposes of estimating the effect of assisted housing on neighborhood migration, this means that the effect may vary depending on the racial composition of the housing or the neighborhood. In other words, the racial composition of a neighborhood moderates the effect of assisted housing on migration. To test for this possibility, an interaction term, or the presence of assisted housing units multiplied by the percentage of black or Latino residents, was employed. Theoretically, the interaction term suggests that the effect of assisted housing on migration might vary depending on the racial composition of the neighborhood. Practically, because of the high correlation between the racial composition of the assisted housing units and surrounding neighborhoods, this interaction term can also be used to infer that the effect of assisted housing on neighborhood migration varies depending on the racial composition of the housing. Moreover, this interaction would also suggest whether family AHDs are more likely to cause neighborhood migration. Two different types of interactions were attempted, one with a dummy variable indicating any AHDs in the neighborhood and a second using four dummy variables representing 1 to 49, 50 to 99, 100 to 249, and 250 or more units in a neighborhood, respectively. Consequently, several interactions will be attempted to discern whether or not the likely characteristics of the AHDs affect the relationship between its presence in a neighborhood and out-migration.

To measure AHD effects on in-migration, neighborhoods were stratified into three groups of five strata based on their propensity of having received a public housing, LIHTC, or Other HUD development. Three groups corresponded to each of the different types of AHDs, respectively. Table 2 illustrates the characteristics of each of five strata based on a propensity model for all types of AHDs. For the purposes of brevity, the results are not illustrated for the respective propensity models for each of the three types of AHDs. But the results are very similar and available upon request. Overall, the models accurately predict whether an AHD was built in a neighborhood about 70 percent of the time. Almost uniformly, as the propensity scores decrease, the average socioeconomic status of the neighborhoods increases. This pattern underscores the fact that AHDs were historically targeted toward poor minority communities (Hirsch 1983; Newman and Schnare 1997; Rohe and Freeman 2001).

Table 2. **Characteristics of Neighborhoods by Probability of Having an AHD**

Probability of Having an AHD	Percent Black	Percent Latino	Poverty Rate (%)	Average Year Housing Was Built	Vacancy Rate in the Metropolitan Area (%)
Very low	4.59	9.4	5.97	1962	8.16
Low	9.28	11.90	9.90	1961	8.03
Medium	20.3	15.4	14.8	1960	7.88
High	46.03	17.12	22.8	1955	8.07
Very high	62.48	16.35	33.70	1952	7.58

To ascertain the relationship between poverty status and mobility into AHD neighborhoods, a logistic regression model was estimated for all household heads making interneighborhood moves, with the dependent variable taking a value of 1 if the person moved into a neighborhood with an AHD and 0 otherwise. Separate models were estimated for each of the propensity strata within the three groups representing public housing, LIHTC, and Other HUD housing, respectively. Individuals' poverty status is the independent variable of interest and is measured using a dummy variable with a value of 1 if the household's income was below the poverty threshold in a given year. If AHDs deter the nonpoor from moving into certain neighborhoods, this variable should be statistically significant and positive. The "person-year" format described earlier, in which each observation represents the characteristics of an individual and that individual's environment in a specific year, was again used in this analysis. Descriptive statistics for the variables used in the analysis are presented in table 3.

Results

For ease of interpretation, the results of the logistic regression models were presented as odds ratios. A number greater than 1 indicates a positive relationship between the likelihood of moving and the independent variable. Conversely, a number less than 1 means a negative relationship between the independent variable and the likelihood of moving. The first question addressed is whether AHDs have any impact on neighborhood out-migration among the nonpoor. Table 4 presents the results of a bivariate logistic regression model with categorical variables indicating the presence of different types of assisted housing as independent variables. The second column of table 4 suggests that new (post-1980) Other HUD developments, LIHTC developments, and old (pre-1980) public housing developments do indeed have statistically significant effects, at the 90 percent confidence level for Other HUD developments and 95 percent confidence levels for the other two. Nonpoor

Table 3. **Means of Variables Used in Regression Analysis**

Variable	Mean	Standard Deviation
Dependent variable		
Moved to a different tract	0.16	
Control variables		
Individual socioeconomic status		
Household income (median)	$42,478	$40,299
College graduate (not high school graduate is the reference category)	0.25	
Some college (not high school graduate is the reference category)	0.22	
High school graduate (not high school graduate is the reference category)	0.37	
Homeowner	0.64	
Life-cycle characteristics		
Age	44	17
Has children	0.47	
Age 25 to 34	0.31	
Age 35 to 44	0.27	
Age 45 to 54	0.13	
Age 55 to 64	0.12	
Age 65 or over	0.12	
Single (married is the reference category)	0.14	
Divorced, separated, or widowed (married is the reference category)	0.23	
Female	0.25	
Years in the neighborhood	6	4.2
Individual demographic characteristics		
Black (white is the reference category)	0.30	
Latino (white is the reference category)	0.24	
Other race (white is the reference category)	0.01	
Neighborhood characteristics		
Percent black in the tract	0.24	0.34
Percent Latino in the tract	0.04	0.09
Percent in poverty in the tract	0.13	0.14
Median year housing was built	1961	
Metropolitan area characteristics		
Vacancy Rate	0.08	0.03
Percentage of housing in the metropolitan area built in the 1980s	0.29	0.09
Northeast	0.20	
Midwest	0.28	
West	0.07	
Other variables		
Moved in 1987 (1986 is the reference category)	0.13	
Moved in 1988	0.14	
Moved in 1989	0.15	
Moved in 1990	0.15	
Moved in 1991	0.16	
Moved in 1992	0.16	
Sample size	19,159	

Note: Frequencies are based on unweighted observations.

households were more likely to leave neighborhoods with these types of developments than neighborhoods without them. The next three columns in table 4 illustrate results separately by race. Nonpoor whites are leaving neighborhoods with LIHTC developments and neighborhoods with Other HUD developments more quickly than other neighborhoods, but no relationship is apparent for older public housing developments. Blacks exhibit higher exit rates only from neighborhoods with older public housing developments, while Latinos have higher exit rates from neighborhoods with old public housing and lower exit rates from neighborhoods with old Other HUD housing.

Table 4. **Relationship between AHDs and Neighborhood Out-Migration**

	Dependent Variable: Moved to a Different Tract			
Independent Variable	Total	White	Black	Latino
New public housing	1.07	1.04	1.11	1.92
New Other HUD	1.13*	1.30***	0.89	1.29
LIHTC	1.16**	1.20*	1.06	0.97
Old public housing	1.21**	1.05	1.31**	7.23**
Old Other HUD	1.08	1.06	1.03	0.07**
Sample size	19,043	12,919	5,884	460

*$p \leq 0.10$. **$p \leq 0.05$. ***$p \leq 0.01$.

As was noted earlier, AHDs are not randomly distributed and may be located in neighborhoods likely to experience nonpoor out-migration anyway. The multivariate logistic regression models presented in table 5 control for this possibility. The second column of table 5 illustrates the relationship between the presence of different types of AHDs in a neighborhood and neighborhood out-migration, controlling for individual socioeconomic status, life-cycle characteristics, race/ethnicity, neighborhood characteristics, and housing market characteristics. These results show that whites were more likely to leave neighborhoods with new Other HUD developments and Latinos were more likely to leave neighborhoods with old public housing units. All of the other relationships between neighborhood out-migration and the presence of AHDs that were observed for the entire sample were spurious.

The rest of the variables in the models suggest that life-cycle factors were consistently strong predictors of whether someone left a neighborhood with an AHD. The older people were, the less likely they were to move, as would be expected given that older people are less mobile. Single adults were more likely to move, and female-headed households were less likely. Renters are also consistently more likely to move, a

Table 5. **Relationship between AHDs and Neighborhood Out-Migration with Statistical Controls**

	Dependent Variable: Moved to a Different Tract			
Independent Variable	Total	White	Black	Latino
New public housing	0.90	0.93	0.94	0.49
New Other HUD	1.07	1.19*	0.92	1.61
LIHTC	1.05	1.06	1.08	0.47
Old public housing	0.99	0.91	0.99	5.09**
Old Other HUD	1.01	0.88	1.09	0.17
1987	0.63***	0.63***	0.58***	1.06
1988	0.75***	0.75**	0.72**	0.84
1989	0.85	0.83*	0.85	0.62
1990	0.89	0.89	0.86	0.57
1991	1.09	1.17	0.88	1.30
1992	0.72***	0.69***	0.76*	0.57
Years in the neighborhood	0.90***	0.91***	0.88***	0.95
Northeast	0.80**	0.71***	1.01	3.15
Midwest	1.08	1.03	1.17	1.67
West	1.05	0.98	2.45*	4.70*
Renter	4.04***	3.95***	4.32***	4.62***
Black	0.70***			
Other	1.86**			
Latino	0.83			
Aged 25 to 34	0.73***	0.74***	0.72*	0.42*
Aged 35 to 44	0.55***	0.56***	0.54***	0.27**
Aged 45 to 54	0.38***	0.38***	0.36***	0.22
Aged 55 to 64	0.28***	0.24***	0.34***	
Aged 65 or over	0.22***	0.21***	0.23***	0.07
Female	0.80***	0.85	0.70***	0.60
Divorced	1.50***	1.28**	1.98***	2.29*
Single	1.39***	1.27**	1.75***	1.59
Has a child	0.98	0.95	1.07	1.27
Income	1.07	0.93	1.01	1.08
Immigrant	0.89	0.88	Dropped due to collinearity	1.01
High school graduate	0.81**	0.75**	0.84	0.83
Some college	0.90	0.83	0.96	0.52
College graduate	1.01	0.91	1.12	0.42
Receives rental assistance	0.99	1.21	0.88	1.01
Vacancy rate	3.50	4.06	6.63	0.90**
Percentage of housing built in the 1980s	2.18*	1.77	2.05	0.15
Percent black in the neighborhood	1.14	1.52	0.95	5.01*
Percent Latino in the neighborhood	0.84	0.94	0.56	0.94
Poverty rate	1.36	1.35	1.47	0.22
Median year housing was built	1.01	1.01	1.01	1.03
Sample size	15,294	10,536	5,884	460

*$p \leq 0.10$. **$p \leq 0.05$. ***$p \leq 0.01$.

finding that is congruent with what theory would predict. Perhaps because of stronger ties, the number of years a person has been residing in a neighborhood has a depressive effect on the likelihood of moving out, except for Latinos. The other control variables do not exhibit any consistent patterns. In the remaining tables, only the independent variables will be illustrated, since the parameters for the control variables are very consistent across the various model specifications.

If the control variables are held constant, AHDs typically do not exert any influence on the probability of a nonpoor householder's leaving a neighborhood. This evidence shows that the mere presence of an AHD usually does not contribute to concentrating poverty in a neighborhood through the out-migration of nonpoor householders.

Also tested were whether the effects of AHDs on neighborhood out-migration begin to manifest themselves beyond a certain threshold. Householders who might not mind living in a neighborhood with 5 or 10 assisted housing units might think twice about living in the same neighborhood if it had 50 or 100 assisted units. To capture the possibility of a nonlinear relationship, the number of new (post-1980) assisted housing units was categorized using five dummy variables representing 0 to 49, 50 to 99, 100 to 249, and 250 or more units.

Presented in table 6 are the results of a logistic regression model using the categorical variables indicating the number of assisted housing units in a neighborhood as the independent variables and the control variables described earlier. While the full and white-only sample models provided no evidence of a relationship between different numbers of AHDs and neighborhood out-migration, the black and Latino samples did exhibit several statistically significant results. Among blacks, neighborhoods with more than 250 new public housing units experienced higher exit rates, while neighborhoods with between 100 and 250 new Other HUD units actually had *lower* exit rates. Lower exit rates were also associated with the presence of AHDs for Latinos residing in neighborhoods with less than 50 LIHTC units and more than 250 LIHTC units. Higher exit rates were found for Latinos residing in neighborhoods with less than 50 units of new Other HUD housing, between 50 and 99 units of new Other HUD housing, between 50 and 99 units of new Other HUD housing, new public housing between 50 and 99 units and between 50 and 99 LIHTC units. These last results are more consistent with the spillover thesis, which suggests that the nonpoor would flee neighborhoods with AHDs.

It is not clear why AHDs were associated with lower exit rates among nonpoor blacks and Latinos in some instances. Perhaps there are cases where AHDs serve to stabilize deteriorating neighborhoods. Moreover,

Table 6. **Relationship between AHDs Measured Nonlinearly and Neighborhood Out-Migration with Statistical Controls**

	Dependent Variable: Moved to a Different Tract			
Independent Variable	Total	White	Black	Latino
LIHTC > 249	0.90	1.21	0.89	0.09***
LIHTC 100 to 249	1.10	1.11	1.11	6.14
LIHTC 50 to 99	0.92	0.87	1.01	11.99**
LIHTC 1 to 49	1.10	1.11	1.12	0.21*
New public housing > 249	2.05		2.75*	Dropped due to collinearity
New public housing 100 to 249	0.85	0.97	0.69	Dropped due to collinearity
New public housing 50 to 99	0.89	0.83	1.04	9.29*
New public housing 1 to 49	0.96	0.99	1.01	0.36
New Other HUD housing > 249	1.41	1.16	1.66	0.74
New Other HUD housing 100 to 249	0.81	1.16	0.62***	0.99
New Other HUD housing 50 to 99	1.16	1.13	1.24	4.05**
New Other HUD housing 1 to 49	1.19	1.22	1.08	5.27**
Old public housing	0.99	0.91	0.97	Dropped due to collinearity
Old Other HUD housing	1.01	0.87	1.11	Dropped due to collinearity
Sample size	15,294	10,536	5,884	460

*$p \leq 0.10$. **$p \leq 0.05$. ***$p \leq 0.01$.

the sample sizes, especially for Latinos, are relatively small, thus raising the possibility that a few anomalous instances could skew the results. Whatever the reason, they are hardly consistent with the notion that AHDs usually foster concentration of poverty in surrounding neighborhoods through the flight of those who are better-off.

The next set of analyses are for the interactions between the presence of an AHD in a neighborhood and the minority composition of that neighborhood. In the case of interactions, an odds ratio of greater than 1 means that as the percentage of nonwhites in a neighborhood increases, the likelihood of people moving because of an AHD in the neighborhood increases at an increasing or nonlinear rate. Put another way, as the percentage of nonwhites increases, the spillover effect of AHDs becomes that much more pronounced and pushes the nonpoor out even more. Likewise, an interactive term with an odds ratio of less than 1 means that the likelihood that someone will move because of an AHD in the neighborhood decreases in a nonlinear fashion. Also, the interpretation of the main effect of AHD variables changes in the presence of an interaction term. The odds ratio for an AHD variable when there is an interactive term represents the effect of an AHD on exit rates when the percent nonwhite is zero (Jaccard 2001).

Table 7 presents the results of the interaction between the presence of AHDs in a neighborhood and the percentage of blacks and Latinos there. In this case, there are several interaction terms, each one indicating whether the effect of the different types of AHD units on out-migration varies depending on the neighborhood's racial/ethnic composition. Columns 2 and 3 of table 7 show that there are no significant relationships between out-migration and AHDs or the interaction terms in the full sample or white-only models. For the population as a whole or for whites separately, the relationship between the presence of AHDs and nonpoor out-migration is not moderated by the racial composition of the neighborhood. The next two columns illustrate the results for blacks and Latinos, respectively. For blacks, the only statistically significant interaction term is for new public housing. According to this evidence, as the percentage of nonwhites increases, the impact of new public housing on nonpoor exit rates increases. For Latinos, the interactive term for old Other HUD units was statistically significant, but negative.

Table 7. **Relationship between AHDs and Neighborhood Out-Migration with Statistical Controls and Interaction with Percent Nonwhite**

	Dependent Variable: Moved to a Different Tract			
Independent Variable	Total	White	Black	Latino
New public housing	0.87	1.09	0.38*	0.06
New Other HUD	1.11	1.20	0.69	1.01
LIHTC	0.95	0.96	0.74	1.09
Old public housing	1.09	1.03	1.78	53.47**
Old Other HUD	1.05	1.01	1.51	3.24
Percent nonwhite	1.07	1.35	.83	1.51
New public housing × Percent nonwhite	1.08	0.35	3.64*	43.13
New Other HUD × Percent nonwhite	0.89	0.91	1.61	2.47
LIHTC × Percent nonwhite	1.27	2.07	1.67	0.22
Old public housing × Percent nonwhite	0.86	0.60	0.49	0.54
Old Other HUD × Percent nonwhite	0.90	0.41	0.63	0.10***

*$p \leq 0.10$. **$p \leq 0.05$. ***$p \leq 0.01$.

Interactions for the nonlinear specifications were attempted and are presented in table 8. Once again, for the full and white-only samples, there were no statistically significant interactions. For blacks, however, there were statistically significant interactions for LIHTC developments with more than 250 units and new public housing between 50

Table 8. **Relationship between AHDs Measured Nonlinearly and Neighborhood Out-Migration with Statistical Controls and Interaction with Percent Nonwhite**

	Dependent Variable: Moved to a Different Tract		
Independent Variable	Total	White	Black
LIHTC > 249	0.65	1.31	0.20**
LIHTC 100 to 249	1.11	0.94	1.23
LIHTC 50 to 99	0.87	0.84	0.98
LIHTC 1 to 49	0.98	0.97	0.74
New public housing > 100	0.99	0.90	0.95
New public housing 50 to 99	0.72	1.27	0.25
New public housing 1 to 49	1.04	1.10	1.05
New Other HUD housing > 249	0.82	1.32	0.19
New Other HUD housing 100 to 249	0.97	1.03	0.51
New Other HUD housing 50 to 99	1.03	1.10	0.80
New Other HUD housing 1 to 49	1.21	1.30	0.79
Old public housing	1.09	1.03	1.81
Old Other HUD housing	1.05	0.99	1.55
Percent nonwhite	1.06	1.39	0.89
LIHTC > 249 × Percent nonwhite	1.32	0.93	8.14**
LIHTC 100 to 249 × Percent nonwhite	0.76	2.39	0.92
LIHTC 50 to 99 × Percent nonwhite	1.72	1.18	1.15
LIHTC 1 to 49 × Percent nonwhite	0.75	2.41	1.68
New public housing >100 × Percent nonwhite	0.69	1.27	0.72
New public housing 50 to 99 × Percent nonwhite	1.46	0.04	10.02**
New public housing 1 to 49 × Percent nonwhite	0.97	0.62	0.96
New Other HUD housing > 249 × Percent nonwhite	2.49	0.52	15.96
New Other HUD housing 100 to 249 × Percent nonwhite	0.68	1.59	1.37
New Other HUD housing 50 to 99 × Percent nonwhite	1.46	0.94	2.04
New Other HUD housing 1 to 49 × Percent nonwhite	0.97	0.64	1.88
Old public housing × Percent nonwhite	0.84	0.56	0.46
Old Other HUD housing × Percent nonwhite	0.92	0.49	0.61
Sample size	15,294	10,495	4,635

*$p \leq 0.10$. **$p \leq 0.05$. ***$p \leq 0.01$.

and 99 units. In both of these instances, as the percentage of nonwhites in a neighborhood increases, the likelihood that a nonpoor individual will leave that neighborhood also increases. Attempts were made to test for nonlinear interactions for Latinos, but the small sample size and a high degree of multicollinearity precluded the estimation of a satisfactory model.

Overall, while there were a few instances of significant interaction terms, for the most part, the effect of AHDs on nonpoor out-migration is independent of the percentage of black and Latino residents there. These results suggest that the relationship, or lack thereof, between the number of AHD units and neighborhood out-migration is not moderated by the racial/ethnic composition of the neighborhood. Because of the high correlation between the racial composition and age profile of AHDs and the demographic characteristics of the surrounding neighborhood, this result suggests that the demographic characteristics of the AHDs probably play little, if any, role in shaping class-selective out-migration away from the surrounding neighborhoods. Because of the lack of good data on the racial composition of tenants in AHDs, however, this conclusion should be interpreted cautiously.

AHDs and nonpoor out-migration

The results presented in the preceding section suggest that in some instances, there is a relationship between assisted housing and neighborhood out-migration, but that for the most part, it is a spurious one. Once the relevant control variables are added to the models, typically no relationship can be discerned. In the multivariate models, AHDs were associated with higher exit rates in a couple of instances, but typically there was no relationship. Nor was there any systematic pattern where AHDs of a particular type appeared to cause higher exit rates. Thus, a fair assessment would be to acknowledge that AHDs are sometimes associated with middle-class flight, but that more typically they are not.

The models address one manner by which assisted housing units might affect concentration of poverty, by hastening the pace at which nonpoor individuals leave the neighborhood where such units are found. That still leaves the possibility that assisted housing might influence who moves *into* a neighborhood and affect concentrated poverty that way.

Neighborhood in-migration

The first set of analyses considers the relationship between neighborhood in-migration and AHDs without using propensity-derived control neighborhoods. Here the sample is further limited to those who made an interneighborhood move. Thus, we can think of the sample as including all those who made an interneighborhood move, with the dependent variable being whether they moved to a neighborhood with an AHD. The results of these analyses, which are presented in tables 9,

10, and 11 for public housing, LIHTC developments, and Other HUD developments, respectively, show that migration into neighborhoods with AHDs is indeed typically class selective. Poor people are more likely than people who are not poor to move into a neighborhood with new public housing units, LIHTC units, and new Other HUD units. It is important to note that this analysis excludes those who moved into an AHD, since they were excluded from the PSID sample.

Table 9. **Relationship between New Public Housing and Class-Selective Neighborhood In-Migration**

	Dependent Variable: Moved to a Tract with New Public Housing			
Independent Variable	Total	White	Black	Latino
If poor, poverty status = 1	2.01***	1.45	1.52**	2.19
Sample size	6,898	4,040	2,735	244

*$p \leq 0.10$. **$p \leq 0.05$. ***$p \leq 0.01$.

Table 10. **Relationship between LIHTC Developments and Class-Selective Neighborhood In-Migration**

	Dependent Variable: Moved to a Tract with LIHTC			
Independent Variable	Total	White	Black	Latino
If poor, poverty status = 1	2.19***	1.06	1.56***	0.85
Sample size	6,898	4,040	2,735	244

*$p \leq 0.10$. **$p \leq 0.05$. ***$p \leq 0.01$.

Table 11. **Relationship between New Other HUD Developments and Class-Selective Neighborhood In-Migration**

	Dependent Variable: Moved to a Tract with New Other HUD Development			
Independent Variable	Total	White	Black	Latino
If poor, poverty status = 1	1.29***	1.31	0.96	1.98*
Sample size	6,898	4,040	2,735	244

*$p \leq 0.10$. **$p \leq 0.05$. ***$p \leq 0.01$.

However, these relationships are not statistically significant in the white-only sample, which is illustrated in the third columns of tables 9, 10, and 11. The results of the black-only sample presented in the fourth column of tables 9, 10, and 11 suggest that poor blacks are being drawn to neighborhoods with new public housing and LIHTC units. As shown in the fifth column of tables 9, 10, and 11, poor Latinos were more likely to move to neighborhoods only with new Other HUD units, but the relatively small Latino sample could also be responsible for the lack of statistically significant results for this group.

The finding that poverty status makes no difference for whites as far as moving into neighborhoods with AHDs could be interpreted as meaning that regardless of their socioeconomic status, whites can avoid AHD neighborhoods, while blacks and Latinos must have a higher socioeconomic status to do so. This interpretation is consistent with other studies finding that whites of all socioeconomic strata can usually avoid poor minority neighborhoods—the type of neighborhoods where AHDs are concentrated (Jargowsky 1997; Massey and Denton 1993).

This analysis provides evidence suggesting that migration into neighborhoods surrounding AHDs is class selective, especially for blacks and Latinos. Those who are poor are much more likely to move into an AHD neighborhood than those who are not. But is it the AHDs that are causing this pattern or the characteristics of the neighborhoods where AHDs happen to be? The propensity-stratified analysis will shed light on this question. Because the only observable difference between AHD neighborhoods and control neighborhoods is the presence of an AHD, they would make likely candidates for explaining any migration differential by poverty status.

Table 12 shows the effect of poverty status on the likelihood of someone's moving into a neighborhood with public housing for each of the five classes of neighborhoods stratified by the likelihood of public housing being built there after 1980. There is some evidence of a class-selective effect in certain neighborhoods. In neighborhoods with a very low, a medium, and a very high probability of receiving public housing, poor people are significantly more likely than nonpoor people to move into a neighborhood with new public housing than otherwise similar neighborhoods. In the other strata, the relationships are not statistically significant.

Table 13 illustrates the relationship between moving into a neighborhood and the presence of a LIHTC development, stratifying the neighborhoods based on their likelihood of having one. In neighborhoods with a medium or a high probability of having had a LIHTC development built there, evidence of class-selective in-migration does manifest

Table 12. **Relationship between New Public Housing and Class-Selective Neighborhood In-Migration by Neighborhood Type**

Independent Variable	Dependent Variable: Moved to a Tract with New Public Housing				
	Likelihood of Having New Public Housing in the Neighborhood				
	Very High	High	Medium	Low	Very Low
If poor, poverty status = 1	2.57***	0.87	2.32*	1.61	3.85**
Sample size	829	1,090	814	843	619

*$p \leq 0.10$. **$p \leq 0.05$. ***$p \leq 0.01$.

Table 13. **Relationship between LIHTC Developments and Class-Selective Neighborhood In-Migration by Neighborhood Type**

Independent Variable	Dependent Variable: Moved to a Tract with LIHTC				
	Likelihood of Having LIHTC in the Neighborhood				
	Very High	High	Medium	Low	Very Low
If poor, poverty status = 1	1.14	1.90***	2.93**	0.81	1.04
Sample size	1,080	926	785	789	617

*$p \leq 0.10$. **$p \leq 0.05$. ***$p \leq 0.01$.

itself. In these two strata, poor households were more likely to move into neighborhoods with a LIHTC development than otherwise similar neighborhoods without one.

The estimates of the effects of new Other HUD units on in-migration are shown in table 14. In contrast to public housing and LIHTC developments, new Other HUD units do not have any discernible effect on in-migration rates.

Taken together, the results presented in tables 9 through 14 imply that migration into AHD neighborhoods is indeed class selective in many instances. Moreover, in some types of neighborhoods, namely those with a very low, a medium, or very high probability of new public housing or a medium or a high probability of having a LIHTC development, the greater likelihood for the poor rather than the nonpoor to move into an AHD neighborhood persists even when observable differences between AHD and non-AHD neighborhoods are controlled for.

Table 14. **Relationship between New Other HUD Housing and Class-Selective Neighborhood In-Migration by Neighborhood Type**

Independent Variable	Dependent Variable: Moved to Tract with New Other HUD Housing				
	Likelihood of Having New Other HUD Housing in Neighborhood				
	Very High	High	Medium	Low	Very Low
If poor, poverty status = 1	0.83	1.24	0.89	0.83	0.91
Sample size	501	906	913	826	744

The smaller sample size used for the in-migration analysis and the further reduction in sample sizes used for strata-specific models precluded testing for interactions or nonlinear relationships between the presence of an AHD and in-migration. Therefore, fewer conclusions can be drawn about the specific circumstances under which AHDs affect nonpoor in-migration.

AHDs and neighborhood migration dynamics

Previous studies all implied that AHDs did indeed cause concentration of poverty, in part by altering the flow of residents into and out of surrounding neighborhoods. The results presented here tell a somewhat different story. Although AHDs are located in the types of neighborhoods that the nonpoor are more likely to leave or avoid, in most instances this appears to be due to the other characteristics of those neighborhoods. Once statistical controls are added to the analyses, there is typically no relationship between the presence of an AHD in a neighborhood and class-selective out-migration. In-migration does appear to be more sensitive to the presence of an AHD. There were several instances of class-selective in-migration even after including propensity-generated control neighborhoods. But even here, the relationship between an AHD and class-selective in-migration was not significant in most cases.

Why might AHDs be more likely to be related to class-selective in-migration than class-selective out-migration? On the one hand, it may be that among people who are already in a particular neighborhood, the costs of moving might outweigh any negative externalities associated with an AHD. Moving is costly in terms of time, money, and other intangible factors such as familiarity and social ties. This may be

enough to preclude most people from moving solely because an AHD is nearby.

On the other hand, once people have decided to move, they may be more selective about where they choose to go. Moving costs have already been taken into account, so neighborhood characteristics, including the presence of an AHD, might be enough to influence their choices. This might be the case in the several instances where the presence of an AHD did appear to have a class-selective effect on who moves into a neighborhood.

But even in the case of in-migration, AHDs do not always appear to have an effect. Of the 15 strata illustrated in tables 12, 13, and 14, 10 show no discernible difference in in-migration between the poor and nonpoor due to the presence of AHDs in certain neighborhoods. Taken together, one would have to conclude that the notion that AHDs concentrate poverty in surrounding neighborhoods by altering residential mobility patterns must be qualified. Under most circumstances AHDs do not have this effect.

Policy implications

In recent years, one of the overarching themes in affordable housing policy has been to avoid or reduce concentration of poverty. Clearly, recent federal housing policy and some local initiatives bear the imprint of this deconcentration paradigm, as evidenced by several housing policies, including the following: (1) the Moving to Opportunity (MTO) program, which provides public housing residents with vouchers to move to low-poverty neighborhoods; (2) HUD's prohibition on developing assisted housing in neighborhoods with concentrated poverty; (3) public housing revitalization strategies that attempt to incorporate mixed-income households; and (4) local initiatives, such as the Nehemiah program in Brooklyn, that bring working and middle-class families into poor neighborhoods. The research presented here, which examines how AHDs affect concentration of poverty in surrounding neighborhoods, is thus pertinent to one of the major thrusts in affordable housing policy.

First and foremost, these findings are important because they dispel the notion that AHDs automatically contribute indirectly to concentration of poverty. Previous researchers found that AHDs did contribute and implied that this was due in part to the effect they had on surrounding neighborhoods. The implications of these findings were that AHDs were somewhat deserving of their status as LULUs because they contributed to an increase in concentration of poverty in the surrounding neighborhood. Given the host of other neighborhood effects that

have been attributed to AHDs, including declining property values, increased crime, and increased racial segregation, the notion that AHDs help concentrate poverty would serve to cement their reputation as LULUs and invoke more vociferous NIMBYism at the prospect of their being placed in a neighborhood.

In contrast to the findings of prior studies, the results presented here found that an AHD typically does not exert an independent effect on the dynamics associated with concentration of poverty in a neighborhood. The inconsistency between the earlier findings and the results presented here suggests that the previous studies are not generalizable beyond those specific settings or were misleading because they could not distinguish between changes occurring within the AHDs and those occurring in the surrounding neighborhoods. In general, neighborhoods with AHDs may have higher poverty rates, but this is due to the types of neighborhoods where AHDs are built and to the higher poverty rates of the residents themselves, not to any effects AHDs have on surrounding neighborhoods. This is not to suggest that in specific instances an AHD could not alter the migratory patterns and/or poverty dynamics in a surrounding neighborhood. This is certainly possible and was found to be the case in a small minority of the analyses presented in this article. Rather, the results imply that this will not typically be the case.

In most circumstances, the lack of a causal relationship between the presence of an AHD in a neighborhood and concentration of poverty is consistent with a recent review of the evidence, which found that the development of AHDs does not automatically lead to neighborhood change in terms of property values, racial transition, or crime (Freeman and Botein 2002). Moreover, this suggests that AHDs' pariah-like status in American communities may be undeserved, a case of some highly visible bad apples spoiling the reputation of many developments. In addition to providing information to policy makers who have to consider how their plans may affect surrounding neighborhoods, the results of this study and of others that failed to find deleterious neighborhood impacts linked to AHDs should perhaps be used as part of a public education campaign. One of the thorniest problems facing AHDs is NIMBYism based on the notion that this type of housing will negatively affect the surrounding neighborhood. But this study, along with a growing body of evidence suggesting that the negative impacts of AHDs are idiosyncratic and limited to a few specific circumstances, could be used to alleviate the fears of some opponents in certain neighborhoods. To be sure, some opponents are motivated by racism or other emotions and are unlikely to be swayed by empirical analyses that show the lack of a relationship between AHDs and neighborhood impacts. Nevertheless, if the conventional wisdom at least reflected the empirical reality, opponents would have less ammunition to combat an AHD. As it stands

now, AHDs are generally viewed negatively and are often still relegated to disadvantaged neighborhoods (Rohe and Freeman 2001).

Despite the lack of a causal connection between AHDs and concentration of poverty in many instances, the finding that neighborhoods where AHDs are located were more likely to witness the nonpoor leaving and are more likely to be the destination of the poor has important ramifications for housing policy. This means that AHD residents experience not only the concentration of poverty due to regulatory guidelines that target admission to poor households, but also the concentration due to migration patterns and dynamics that contribute to poverty in surrounding neighborhoods. This finding is consistent with the work of Newman and Schnare (1997), who found AHDs to be overrepresented in poor, disadvantaged communities.

As noted earlier, a key theme of affordable housing policy in recent years has been to alleviate concentrations of poverty. Since the patterns that cause concentration in surrounding neighborhoods are only in a few specific circumstances possibly due to the presence of AHDs themselves, this suggests that, to the extent that policy makers care about the environment of AHD residents, attention must be paid to the neighborhoods surrounding developments, in addition to the AHDs themselves. Surely, development-specific reforms that focus on admissions criteria or work requirements can affect the environment of AHDs. But the impact of these reforms may be dampened if surrounding communities remain mired in poverty.

The finding that migration dynamics in neighborhoods surrounding AHDs work to further concentrate poverty suggests a couple of possible alternatives to alleviate the detrimental impacts of concentration of poverty on AHDs. One approach would be to target assisted housing toward neighborhoods with less concentrated poverty. HUD policy is already consistent with this approach. The MTO program and other residential mobility programs are designed to foster more socioeconomic integration among assisted housing residents by giving them the opportunity to reside in more affluent neighborhoods (Turner 1998). Moreover, to the extent that AHDs are still being built by HUD, current guidelines direct their development away from high concentrations of poverty (Rohe and Freeman 2001). The major impediment to this approach, of course, is the NIMBYism that AHDs often encounter. As noted earlier, the results of this and other studies that fail to find a causal relationship between AHDs and neighborhood decline might help counter some of this.

The LIHTC, the other major AHD-based housing assistance program, has no such guidelines that would direct it to low-poverty neighborhoods.

Indeed, preference is given to projects targeted toward distressed neighborhoods. To date, however, the LIHTC has avoided the notoriety of the public housing program, perhaps because of its somewhat less disadvantaged clientele. Nevertheless, evidence suggests that LIHTC developments, although not as concentrated in poverty-stricken neighborhoods as public housing, are still disproportionately sited in low-income neighborhoods (Newman and Schnare 1997; Rohe and Freeman 2001). Given the role that LIHTC developments play in the revitalization of distressed neighborhoods, it would probably be a mistake to prohibit their development in low-income neighborhoods. Moreover, LIHTC developments are often part of mixed-income developments, thus lessening the possibility that these developments will find themselves surrounded by seas of poverty. It might make sense, however, for policy makers to encourage that LIHTC developments be part of mixed-income initiatives or be linked to larger neighborhood revitalization strategies. That way, the concentration of poverty that might be likely to occur in neighborhoods surrounding these developments could be somewhat reduced.

This would also be consistent with the second major alternative for alleviating the concentration of poverty likely to occur in neighborhoods surrounding AHDs: attracting middle-income households to these neighborhoods. Again, HUD policy makers have already moved in this direction. Notably, one of the goals of HUD's HOPE VI program for revitalizing public housing is to improve conditions in surrounding neighborhoods: A key tactic is the development of market-rate housing in neighborhoods surrounding public housing (Salama 1999). Since the evidence presented here suggests that neighborhoods surrounding AHDs, including public housing, are likely to continue to attract the poor, such interventions are probably necessary to counter the trend of concentration of poverty likely to occur in neighborhoods surrounding AHDs, especially in the case of public housing. Although project-based housing assistance has fallen out of favor among policy makers, affordable housing programs, such as the LIHTC, still produce thousands of units a year. As noted on HUD's website, "The Low-Income Housing Tax Credit is the most important resource for creating affordable housing in the United States today" (1997b). Moreover, although project-based assisted housing is not fashionable, future changes in the housing market, the economy, and the political climate may one day return it to the forefront of our nation's low-income housing policy. Consequently, the findings presented here should also be of interest to policy makers and developers of project-based housing assistance.

This article sheds light on whether project-based housing assistance, designed to ameliorate one of the consequences of poverty—inadequate housing—actually contributes to it by concentrating poverty geographically. The results presented here imply that this is typically not the

case. Nevertheless, the findings do echo those of other researchers who have found AHDs to be concentrated in poorer neighborhoods. For assisted housing to be perceived as something that fosters opportunity for its recipients, this shameful legacy will have to be addressed. Fortunately, the finding that AHDs do not typically contribute to the concentration of poverty in surrounding neighborhoods may make this task somewhat easier.

Table A1. **Characteristics of Neighborhoods by Public Housing HUD Propensity Scores**

Probability of Having New Public Housing	Has New Public Housing			Does Not Have New Public Housing		
	Percent Black	Poverty Rate (%)	Median Year Housing Was Built	Percent Black	Poverty Rate (%)	Median Year Housing Was Built
Very low	10.4	8.1	1969	4.1	5.0	1962
Low	9.6	12.1	1959	13.7	9.7	1959
Medium	31.0	15.6	1962	28.0	14.8	1956
High	60.1**	24.4	1955	49.4	20.9	1957
Very high	62.0	31.3	1959	57.0	28.0	1959

Note: One-tailed test.
*$p \leq 0.10$. **$p \leq 0.05$. ***$p \leq 0.01$.

Table A2. **Characteristics of Neighborhoods by LIHTC HUD Propensity Scores**

Probability of Having New LIHTC	Has LIHTC			Does Not Have LIHTC		
	Percent Black	Poverty Rate (%)	Median Year Housing Was Built	Percent Black	Poverty Rate (%)	Median Year Housing Was Built
Very low	15.1**	9.1	1966**	4.2	4.5	1963
Low	8.1	7.6	1962	11.3	12.9	1963
Medium	12.2	10.5	1959	13.7	12.0	1959
High	55.9**	24.7**	1957	36.5	18.7	1956
Very high	75.5	29.7	1949	74.0	28.7	1950

Note: One-tailed test.
*$p \leq 0.10$. **$p \leq 0.05$. ***$p \leq 0.01$.

Table A3. **Characteristics of Neighborhoods by Other HUD Propensity Scores**

Probability of Having New Other HUD Housing	Has Other HUD Housing			Does Not Have Other HUD Housing		
	Percent Black	Poverty Rate (%)	Median Year Housing Was Built	Percent Black	Poverty Rate (%)	Median Year Housing Was Built
Very low	14.8	10.3	1958	18.0	10.9	1960
Low	22.3	12.4	1964	26.7	14.0	1957
Medium	44.7	20.2	1958	44.4	20.4	1956
High	61.0	26.9	1955	63.1	30.4	1957
Very high	57.8**	27.1	1957	50.7	22.0	1958

Note: One-tailed test.

*$p \leq 0.10$. **$p \leq 0.05$. ***$p \leq 0.01$.

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