



WORKING PAPER

# Why Do Higher Income Households Choose Low Income Neighborhoods? Pioneering or Thrift?

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We are grateful for comments from two anonymous reviewers, Dan O'Flaherty, Jeffrey Zabel, our colleagues at NYU's Furman Center, and seminar participants at the Lusk Center at USC and at the Harvard Inequality and Social Policy Seminar Series.

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## **Why Do Higher Income Households Choose Low Income Neighborhoods?**

### **Pioneering or Thrift?**

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The research in this paper was conducted while the authors were Special Sworn Status researchers of the U.S. Census Bureau at the New York Census Research Data Center (Baruch). Any opinions and conclusions expressed herein are those of the authors and do not necessarily represent the views of the U.S. Census Bureau. All results have been reviewed to ensure that no confidential information is disclosed. We are grateful for comments from two anonymous reviewers, Dan O'Flaherty, Jeffrey Zabel, our colleagues at NYU's Furman Center, and seminar participants at the Lusk Center at USC and at the Harvard Inequality and Social Policy Seminar Series.

## Abstract

This paper offers several hypotheses about which higher income households choose to move into low income neighborhoods and why. We first explore whether the probability that a household moves into a relatively low income neighborhood (an RLIN move) varies with predicted household and metropolitan area characteristics. Second, we estimate a residential choice model to examine the housing and neighborhood preferences of the households making such moves. Third, we explore responses to survey questions about residential choices. We find evidence that households who place less value on neighborhood services and those who face greater constraints on their choices are more likely to make an RLIN move. We find no evidence that households making RLIN moves are choosing neighborhoods that are more accessible to employment. Rather, we find households making RLIN moves appear to place less weight on neighborhood amenities than other households and more weight on housing costs.

Standard economic theories of household sorting across neighborhoods and jurisdictions predict that sorting should lead to communities that are fairly homogeneous with respect to income (Tiebout, 1956; Schelling, 1969). Whether driven by like preferences for local public services, a comparable ability to pay for housing at a given location, or a desire to live among homogenous neighbors, households are expected to choose neighborhoods occupied by households of similar incomes. Yet there is considerable empirical evidence of income diversity within neighborhoods (Krupka, 2008; Galster, Booz and Cutsinger, 2008).

The question we explore here is why some higher income households choose to move into low income neighborhoods, to live among neighbors who earn less than they do. Such moves may be key drivers of economic gains in low income neighborhoods (McKinnish, Walsh and White, 2010; Ellen and O'Regan, 2011); they may also contribute to the emergence of more economically diverse neighborhoods (McKinnish and White, 2011). Yet we know little about who makes these moves and what motivates them.

Drawing from a simple residential-choice framework, we offer some hypotheses about which higher income households might be most likely to choose lower income neighborhoods and why they make these decisions. For ease, we term these as moves into *relatively* low income neighborhoods (or RLIN moves) to emphasize that these neighborhoods are not only low income, but also have a mean income that is low relative to that of the mover. We then use three empirical strategies to test which of these hypotheses (if any) are borne out in practice. First, we explore whether the probability that a household makes an RLIN move varies with predicted household and metropolitan area characteristics. Second, we estimate a residential choice model to examine whether the revealed housing and neighborhood preferences of the households making RLIN moves differ from those of other movers in predicted ways. Finally we explore

whether responses to a collection of survey questions suggest motives for making RLIN moves that are consistent with theoretical predictions.

We rely on the American Housing Survey (AHS), which samples a nationally representative group of housing units and the households who live in them. We use the internal version of the dataset, which identifies the census tract in which each housing unit is located, allowing us to link each unit to the characteristics of its neighborhood along with the attributes of its metropolitan area (MSA). We define RLIN moves as those in which a household moves into a neighborhood with a median income below both its own income and the MSA median. We examine who makes these moves and where they occur during two time periods: a relatively weak market period, 1989-1993; and a period of rapidly rising house prices, 1999-2003.

In brief, we find evidence that households who place less value on neighborhood services (such as renters and childless households) and those who face greater constraints on their choices (such as first-time homeowners and minority households) are more likely than other households to make RLIN moves. We find no evidence that households making RLIN moves are choosing neighborhoods that are more accessible to employment. Rather, the stated motivations and preferences of households making RLIN moves suggest that they place less weight on neighborhood amenities than other households and more weight on minimizing housing costs.

## 1. Literature and Theoretical Framework

The reasons *why* some households move to neighborhoods that are relatively (and absolutely) low income have not been addressed empirically. While there is considerable work documenting that income mixing within neighborhoods is more common than assumed (Galster,

Booza and Cutsinger, 2008; Krupka, 2008), none of these studies examines either the characteristics of the households who move into neighborhoods with incomes lower than their own, or why they choose to make these moves.

There is some work that examines the characteristics of households entering low income neighborhoods that are undergoing neighborhood economic change or gentrification. Researchers typically find that in-movers to low-income neighborhoods experiencing income gains are more likely to be college-educated, childless, and white than households who choose to move into other low-income neighborhoods (Ellen and O'Regan, 2011; McKinnish, Walsh, White, 2010; Freeman and Braconi, 2004).

This body of literature, however, is focused on a related but different question than we ask. These papers study how households entering low income neighborhoods that gentrify differ from those entering low income neighborhoods that do not gentrify. We are interested instead in understanding the characteristics and motivations of the full set of moderate- and higher-income movers who opt for absolutely and relatively low income neighborhoods (regardless of whether those neighborhoods subsequently improve), and how they compare to other movers with similar incomes. We think this question is critical given that the majority of households who make RLIN moves choose neighborhoods that do not subsequently experience a gain in income. Moreover, the in-movement of higher income households into low income areas that do not gentrify may lead to more sustained economic diversity.

We present a simple economic model to motivate our empirical analysis. Building on Quigley (1985), we assume a consumer chooses a unit  $j$  from a set of units  $K$ .<sup>1</sup> This choice includes housing characteristics ( $H_j$ ), neighborhood characteristics ( $N_j$ ) which include both a

bundle of public services and social/economic characteristics of neighbors, a level of accessibility to work, shopping, and cultural activities ( $A_j$ ), and a price ( $R_j$ ) which indicates annual cost of renting or owning. We can then specify the utility of household  $i$  of income  $Y$  as follows:

$$U_{ij}[H_j, N_j, A_j, Y_i - R_j] = V(ij) + \varepsilon_{ij} \quad (1)$$

where  $V$  consists of the systematic component of the household's utility and  $\varepsilon$  is the stochastic component.

If households have full information when they choose to move into lower income neighborhoods, presumably they are gaining utility from some attributes of this bundled choice. Past researchers of neighborhood change (gentrification) have emphasized expectations of future neighborhood improvement as a motivation and/or preferences for historically unique or large homes that are often located in older, lower income neighborhoods (Brueckner and Rosenthal, 2009; Schill and Nathan, 1983). It may also be true that households making RLIN moves are simply trying to save money for non-housing purchases.

Whatever the particular trade-offs, we would expect them to be most attractive to those who place relatively less weight on the quality of neighborhood services and conditions and relatively more weight on housing itself, accessibility or savings. Simplifying  $H_j$ ,  $N_j$  and  $A_j$  into a single vector of housing characteristics  $X_j$  (which includes structural characteristics of the housing unit plus location-specific features such as access and neighborhood characteristics), and following Vigdor (2010), we can then express the utility that household  $i$  receives when living in housing unit  $j$  as follows:

$$U_{ij} = \alpha (Y_i - R_j) + \beta_i X_j + \varepsilon_{ij} \quad (3)$$

The likelihood of household  $i$  selecting unit  $j$  can then be expressed as:

$$P(U_{ij} = \max(U_{i1} \dots U_{ij} \dots U_{ik})) = \frac{e^{\alpha(Y_i - R_j) + \beta_i X_j}}{\sum_{n=1}^k e^{\alpha(Y_i - R_n) + \beta_i X_n}} \quad (4)$$

Simply put, households are maximizing their utility over a set of housing options that provide a range of utilities ( $U_{i1}, \dots, U_{ik}$ ). Note that the utilities associated with these housing options should vary across households—specifically, with the household characteristics that are relevant for residential choices. In other words,  $\beta$  is presumed to vary across household types. In addition, the set of available housing options, and the magnitude of tradeoffs they represent, will vary across housing markets and may also vary across households, assuming a segmented market in which different types of households face different options. Of course, another possibility is that households making RLIN moves may not in fact be making optimal choices at all, perhaps because of search costs or imperfect information.

Drawing on this simple framework, as well as the existing literature, we generate a series of empirical predictions about RLIN moves.

### *Predictions from Pioneering/Gentrification Theories*

In making RLIN moves, households may be revealing a preference for one set of neighborhood or housing attributes (perhaps accessibility or historic character) over another. Literature on neighborhood change has emphasized three motivations that might draw higher income households to low income neighborhoods: prospecting, or expectations of future appreciation; taste for access to employment or amenities; and preference for unique housing stocks. We review these and other possible motivations below.



*Prospecting.* If households are motivated by an interest in future appreciation, we would expect homeowners making RLIN moves to opt for neighborhoods that are expected to improve, perhaps because they have demonstrated a recent trajectory of improvement. Similarly, we would expect to see more homeowners opting for relatively low income neighborhoods when those neighborhoods have older housing stocks and thus are prime for redevelopment (Berry, 1985; Brueckner and Rosenthal, 2009).

*Taste for Downtown Living.* The choice to make an RLIN move may also be driven by the location of the neighborhood itself, which could offer shorter commutes and proximity to cultural amenities. There is considerable evidence that neighborhoods with locational advantages are more likely to experience gentrification (London and Palen, 1984; Brueckner, Thisse and Zenou, 1999). To the extent that accessibility is a motive, we expect households to prefer low income neighborhoods that are closer to jobs and amenities.

*Prioritizing Housing Above Neighborhoods.* Households making RLIN moves may place relatively less weight on neighborhood quality and more on housing than do other households. If true, then we would expect to see households who consume fewer neighborhood-based services, such as households without children (Bayer, Ferreira and McMillan, 2007), disproportionately making RLIN moves.

We also expect renters to be more likely than homeowners to make RLIN moves. Renters face lower risks and transactions costs in ‘trying out’ a neighborhood; when homeowners make residential choices, they are investing in an asset whose expected future value depends on perceived neighborhood quality (Ellen, 2000). Some empirical evidence bears this out; higher levels of neighborhood externality risks (such as crime, litter, and noise) have been

shown to decrease the likelihood of an owner (vs. a renter) moving into a unit (Hilber, 2005). Annual fluctuations in market rent pose a greater risk to renters (Sinai and Souleles, 2005), which might push them to neighborhoods with lower rents and lower expected appreciation.

Finally, to the extent that RLIN moves are motivated by an interest in trading off neighborhood quality for more housing, we should observe that households who make RLIN moves consume more housing relative to otherwise similar households who do not make RLIN moves.

### *Additional Hypotheses*

In addition to these hypotheses emerging from the literature on gentrification and neighborhood change, we suggest two hypotheses about what drives these moves: thrift, or a desire to save for non-housing consumption; and constraints.

*Thrift.* The literature on gentrification has focused on tradeoffs within the neighborhood/housing bundle. But, as highlighted in the model, some households may also choose to spend less on the entire neighborhood/housing bundle in order to spend more on non-housing consumption. To the extent this occurs, we would expect to see households making RLIN moves spending less on housing altogether.

*Constraints on Choice Sets.* Housing decisions are not only shaped by preferences but also by the opportunity set available. Some households face (or perceive) greater constraints, which shape their feasible alternatives. First-time homeowners, for example, could face greater financial constraints than existing homeowners, who are typically able to fund the down payment

on their new home from the sale of their previous home. As a result, first-time homeowners may be pushed to lower cost neighborhoods, which are likely to be lower income as well.

Cost constraints for first-time homebuyers should be especially significant in rapidly appreciating MSAs. Until the recent housing market crash, housing prices rose steadily over a ten-year period in much of the country, especially in coastal areas. Such steady appreciation, at least if it outstrips income gains, can constrain the set of homes affordable to potential homebuyers to those located in lower income neighborhoods.<sup>ii</sup> This suggests that RLIN moves should be more likely in ‘hot housing markets,’ or those experiencing the greatest price pressure. Such pressure would affect new homeowners and renters in particular, as continuing homeowners (at least those moving within the same housing market) likely gained equity from the appreciation of their previous home (Sinai and Souleles, 2005).

Minority households may also face constrained choices. Minority households’ more limited wealth and greater reliance on informal networks in their housing search (Newburger, 1995) may limit the neighborhoods they consider and lead them to make more RLIN moves. These racial differences may be particularly pronounced in highly segregated metropolitan areas, as segregation may constrain the movement of higher income black households into higher income neighborhoods (Bostic and Martin, 2003; Wilson, 1987). Moreover, racial discrimination is likely to be higher in more segregated areas.

## 2. Data

We rely on two primary sources of data for this work: housing unit/household level data from the national American Housing Survey (AHS) and census tract data from the decennial

census. We link these two data sets using the census tract identifiers included in the confidential internal version of the AHS. (The publicly available AHS only identifies the metropolitan area in which a housing unit is located.)

The AHS is a longitudinal, biennial survey that tracks a nationally representative sample of approximately 55,000 housing units. The AHS provides detailed data on the housing unit, its occupants, and their stated reasons for choosing their home and neighborhood. Our unit of analysis is a household who moved into a sampled unit at some point during the two years between the previous survey year and the current survey year. As we rely on neighborhood data from the decennial census, we limit our analysis to moves into housing units between 1989-1991, 1991-1993, 1999-2001 and 2001-2003. We link moves in the first two periods to census tract data from the 1990 decennial census and we link the later moves to census tract data from the 2000 decennial census.<sup>iii</sup> We draw our decennial census data from the Neighborhood Change Database. Constructed by Geolytics, in partnership with the Urban Institute, the Neighborhood Change Database provides both 1990 and 2000 census tract data for census tracts as they were defined in the 2000 Census. This dataset allows us to link 1990 and 2000 neighborhood characteristics to all housing units in the AHS through the 2000 census tract identifier.

### 3. Who moves into relatively low income neighborhoods?

We identify RLIN moves as those in which households buy or rent homes in neighborhoods with median incomes that are below both their own income and the median of the metropolitan area. Specifically, we identify a household as an RLIN mover if its income is at least ten percent higher than both the median income of the neighborhood and the income of the

previous occupant of the specific unit into which they move, adjusting for inflation.<sup>iv</sup> (We include the income of the previous resident as a proxy for the income of the micro-neighborhood around the housing unit.<sup>v</sup>) In addition, the neighborhood must have a median income below that of the MSA, in order to exclude moves by very high income households into high income neighborhoods. We have chosen to base our definition on differences in income and not human capital, as we are specifically interested in households who have the financial means to live in higher income neighborhoods at the time that they make their residential choice.<sup>vi</sup>

We remove from our sample households with very low incomes (below 60 percent of area median income) as we want to identify households who would have had the resources to move into a higher income neighborhood instead. Finally, since our interest is in identifying new entrants that have significantly higher incomes than existing residents, we also aim to exclude residential moves into newly urbanizing, exurban communities. Specifically, we exclude from our definition households entering suburban neighborhoods with both densities below 200 people per kilometer and in which the majority of homes have been built in the past decade. (This last restriction removed less than one percent of our sample, and results held without restriction too.)<sup>vii</sup>

Table 1 provides a description of the households that we define as making RLIN moves, in comparison to the other recent movers in our sample with incomes above 60 percent of area median income that do not make such choices.<sup>viii</sup> In contrast to these other recent movers, whose incomes are roughly equal to that of the surrounding tract, the average RLIN mover has an income nearly twice that of the neighborhood. While households making RLIN moves are predominantly white, minorities comprise a significantly larger share of our RLIN mover sample than of our other mover sample. In addition, a larger share of RLIN movers are renters, and

among homeowners, new owners.<sup>ix</sup> Finally, a smaller proportion of RLIN movers have children and a larger share live in the central city.

While the comparisons of means shown in Table 1 are generally consistent with our theoretical predictions, we also estimate a regression to identify the independent relationship between household characteristics and the likelihood of making an RLIN move:

$$Y_{it} = \beta HH_{it} + \lambda_t + \eta MSA_t + \gamma HH_{it} * MSA_t + \varepsilon_{it} \quad (5)$$

where  $Y_{it}$  represents the decision to make an RLIN move, by household  $i$  in time  $t$ .  $HH_{it}$  includes the same household characteristics described in Table 1. We include a series of year dummies,  $\lambda_t$ , and MSA characteristics, such as housing appreciation, segregation and crime<sup>x</sup>, as well as interactions with key household characteristics. (We also estimate a version of this model with MSA fixed effects.) The time  $t$  identifies the cross section in which the household's decision is observed. A housing unit will be included in our sample if it experiences turnover in the two years before one of four survey years: 1991, 1993, 2001, and 2003.<sup>xi</sup>

Table 2 shows the results of our regressions, estimated for all households (columns 1-2) and then separately for homeowners (columns 3-4) and renters (columns 5-6).<sup>xii</sup> We first estimate these models with MSA fixed effects (odd numbered columns) then remove the fixed effects and include metropolitan characteristics that may shape residential decisions. The patterns revealed in Table 1 generally hold up. Consistent with our prediction that households who place less weight on neighborhood services are more likely to make RLIN moves, renters and childless households are more likely to make moves into low income neighborhoods. Further, older homeowners (over sixty years old) are more likely to make RLIN moves than

younger homeowners, perhaps because they also place less weight on future conditions in the neighborhood.

In addition, consistent with our prediction that households who face a more constrained set of choices (financial and otherwise) are more likely to make RLIN moves, first-time homeowners and minority households are more likely to make such moves. These results, which hold with and without MSA fixed effects, paint a somewhat different portrait of RLIN movers than one might intuit from the literature on gentrification.

As for magnitudes, the race variables have the largest coefficients among the dummy variables. For example, black homeowners are 18.8 percentage points more likely to make RLIN moves compared to white homeowners, all else constant. Being black has a much larger association with RLIN moves than the lack of children (more than seven times as large) or a college degree (more than three times as large).

Moving to metropolitan characteristics, we find that more rapid house price appreciation is associated with a greater likelihood of making RLIN moves, but as expected, this relationship only holds among renters and first-time homeowners (and not among repeat homeowners, who can finance the larger required down payment through the sale of their previous home). Specifically, a one standard deviation increase in house price appreciation (or 5 percentage points) leads to a 1 percentage point increase in the probability that a renter makes an RLIN move and a 3 percentage point increase in the probability that a first-time homeowner makes an RLIN move.<sup>xiii</sup> As for segregation, we find white households are somewhat less likely to make RLIN moves in more segregated metropolitan areas.<sup>xiv</sup> But as predicted, minority households are

*more* likely to make RLIN moves in metropolitan areas in which their particular group is more segregated.

In short, we find evidence that differences in both preferences and choice sets could be driving decisions to make RLIN moves. Households who place less weight on local public services (households without children) or future appreciation (renters and older homeowners) are more likely to make RLIN moves. In addition, households facing a more constrained set of choices (such as minorities and first-time homebuyers) more commonly make RLIN moves. These effects are particularly pronounced in metropolitan areas that have experienced rapid house price appreciation and that are highly segregated by race.

#### 4. Choices of RLIN Movers: Evidence from Revealed Preferences

Our theoretical predictions suggest that as compared to other movers, RLIN movers should differentially weight housing or neighborhood attributes. We examine these hypotheses by estimating a residential choice model, expressed in model (4). As established by McFadden (1978), we can use the conditional logit estimation to identify the weights that different households place on unit and neighborhood characteristics.<sup>xv</sup> Intuitively, this model tests for differences in how these attributes affect the selection of a housing unit for those making RLIN moves as compared to those making other moves.

We again begin with all households that move into a new unit in a given cross section, who have incomes above 60 percent of AMI. To estimate the model, we assume that households were choosing among the unit they currently live in and ten randomly selected units within the group of housing units in a given cross section that were vacant and available, within the same



metropolitan area, and of the same tenure class. We separately estimate models for owners and renters.

We control for a set of unit characteristics (the cost of each housing unit, its age, and its number of bedrooms) and a set of neighborhood characteristics (the share of the census tract's population that is minority, the share of the population that has attended college, the share of units that are owner occupied, the share of units built before 1940, and distance to the nearest job node).<sup>xvi</sup> Through a series of interactions, the model controls for the degree to which households with different characteristics make different choices about specific attributes. We interact each of our unit and neighborhood characteristics with household income, race, presence of children and most critically, whether the household made an RLIN move. For brevity, Table 3 simply reports the marginal effects evaluated at the means of each unit and neighborhood characteristic for the interactions that identify the preference parameters of households making RLIN moves relative to those not making such moves. For example, the .083 coefficient on the interaction of RLIN moves with the share of units in a neighborhood built before 1940, means a one percentage point increase in the share of old housing increases the likelihood that a household making an RLIN move will choose a neighborhood (relative to other movers) by 8.3 percentage points.

We report results for owners and renters separately, for models focused solely on unit characteristics (odd-numbered columns) and models with both unit and neighborhood characteristics (even numbered). Focusing first on unit models, the results suggest that compared to similar movers not making RLIN moves, RLIN movers are choosing *smaller* and less expensive units.<sup>xvii</sup> RLIN movers are thus picking units that require less total spending on housing. After controlling for neighborhood characteristics however, price differences disappear

and unit size is now positively associated with RLIN moves. Within a given type of neighborhood, in other words, households making RLIN moves are not choosing less expensive units (or smaller units). Rather, RLIN movers acquire their lower cost housing by choosing units that are lower priced because they are located in less expensive neighborhoods.

The results also suggest that households making RLIN moves are making different choices about neighborhood characteristics. (We are more cautious in interpreting neighborhood differences, as our definitions of RLIN moves may drive some of the differences.)<sup>xviii</sup> Specifically, households making RLIN moves select neighborhoods with larger shares of old housing, perhaps because these neighborhoods are perceived as ripe for redevelopment. However, the neighborhoods they choose also have lower rates of new construction, suggesting little new investment. Further, RLIN renters tend to select neighborhoods with fewer college-educated residents, suggesting that they are not choosing the neighborhoods expected to improve. As for accessibility, we find no evidence that RLIN movers are choosing neighborhoods that are more accessible to jobs. The coefficient on RLIN moves interacted with distance to job node is weakly significant and *positive* in the model for owners (column 2) and insignificant for renters. When using distance to the central business district as our measure of access instead, we again find no evidence that RLIN movers are aiming to live in more accessible neighborhoods. Similarly, public transit use in the tract does not appear to be a significant driver of the neighborhood choice.

To explore whether RLIN movers are selecting neighborhoods that they expect to improve based on past trends, we include several variables that capture changes that occurred over the past decade (the change in income, the change in percentage of residents with college educations, and the change in minority composition). We see few significant coefficients on the

change variables, which could indicate that households are not selecting neighborhoods they expect to improve, or simply reflect the fact that past changes may not be a strong proxy for expectations for the future. We do find slight evidence that homeowners making RLIN moves (though not renters) are selecting neighborhoods where incomes have been growing, but these results are not robust to alternative specifications.

Because prior trends may not capture household expectations of future changes, we also examine what happens to the majority of neighborhoods selected by RLIN movers, and we find that they don't experience income gains in the next decade, even when we focus on homeowners.<sup>xix</sup> If RLIN homeowners are trying to choose rising neighborhoods, they are not doing a very good job.<sup>xx</sup>

In sum, we find that RLIN movers tend to choose smaller and less expensive units than other similar movers (thrift), but they do not appear to be choosing neighborhoods that are trending up or that are more accessible to employment centers.

One explanation for the weak results on job access may be our imperfect measures and data. Our measure of distance to the nearest job node and the central business district are clearly crude proxies for job accessibility, as jobs are now typically distributed throughout a metropolitan area, rather than being concentrated in particular job nodes (Redfearn, 2007). Thus, households may be choosing neighborhoods that are closer to their own jobs, but we are not able to capture their proximity using the measures available to us.

Yet even when we look directly at the commute times reported by household heads, we find little evidence that households making RLIN moves are moving closer to their jobs.

Specifically, we estimate the following descriptive regression:

$$Y_{it} = \text{RLIN}_{it} + \text{HH}_{it} + \varepsilon_{it} \quad (6)$$

where  $Y_{it}$  represents the commute time of the head of household. Our key independent variable,  $\text{RLIN}_{it}$ , identifies whether the household made an RLIN move. Additionally we control for a number of household characteristics,  $\text{HH}_{it}$ , including race, income, the presence of children and tenure status.<sup>xxi</sup>

As shown in Table 4, commute times are greater for those with higher income, for homeowners, and for minorities. However, we find no difference in commute times between households that make RLIN moves and those of other households. This provides further evidence that households are not deciding to make an RLIN move in order to increase accessibility to work.

## 5. Motivations for RLIN Moves: Evidence from Stated Preferences

The AHS includes several questions that ask households about the motivations underlying their residential choices. We use responses to these questions to run a series of simple regressions, testing for differences between households making RLIN moves and other movers in the reasons they state for their choice, after controlling for differences in household characteristics.

### *Stated Reasons for Choosing Neighborhoods*

We start by adapting equation (6) to let  $Y_{it}$  represent a set of dichotomous dependent variables, each indicating the primary reason a household chose their neighborhood. Again, our

key independent variable,  $RLIN_{it}$ , identifies whether the household made an RLIN move, and we control for the same set of household characteristics.

Results are presented in Table 5.<sup>xxii</sup> Consistent with findings above, households making RLIN moves are slightly less likely than other movers to report having chosen their neighborhood for its convenience to work or leisure. This provides further support for our findings that RLIN households are not choosing neighborhoods because they are more convenient to employment. Surprisingly, households making RLIN moves are more likely to have selected a neighborhood for its convenience to family and friends. Such a preference may indicate an additional constraint some households face on remaining proximate to needed family support. Alternatively, it is possible that households making RLIN moves may simply place greater weight on proximity to family and friends than on many neighborhood amenities.

Additionally households making RLIN moves are less likely to report selecting a neighborhood because of school quality or for aesthetic reasons. This is consistent with our predictions, suggesting that they weight aspects of the ‘residential bundle’ differently from other movers, and specifically, that they place less weight on neighborhood service quality and conditions.

#### *Stated Reasons for Choosing a Housing Unit*

The second half of Table 5 provides additional evidence on why a household chose its particular housing unit. Here we again estimate regression model (6), but our dependent variables are now a) whether the household reports that it chose its unit primarily for financial reasons and b) whether a household reports that it selected its unit primarily for its size. We find that households making RLIN moves are more likely to have chosen their unit for financial

reasons but less likely to have chosen their unit because of its size. Consistent with results from our residential choice model, they appear to be choosing their housing units, at least in part, because they are more affordable, and thus leave them with more money to spend on other goods.

### *Comparison of New and Previous Housing Units*

As a check on whether the actual behavior of households match their stated desire to save money, we examine responses to a series of questions about how current housing units compare to previous housing units with respect to housing cost, unit quality and neighborhood quality. If these households are motivated by cost savings, and are therefore more willing to sacrifice housing or neighborhood quality than other households, there should be evidence of these tradeoffs ex-post.<sup>xxiii</sup> Controlling for income, tenure, race and the presence of children, we find that households making RLIN moves are significantly more likely than other movers to have experienced a reduction in housing costs after their recent move. So, relative to other movers with similar characteristics (income, tenure status and presence of children), RLIN movers experience reductions in their housing expenses after moving. These savings seem to come from reductions in the quality of both housing units and neighborhoods, as households making RLIN moves are also more likely than other movers to report entering a unit of lower quality than their previous unit and a neighborhood of lower quality than their previous neighborhood.

## 6. Conclusion

Our primary objective was to place the decision to move into a relatively low income neighborhood in a broader empirical and theoretical context. Our results reveal a somewhat

different profile of which higher income households make moves into relatively lower income neighborhoods than might be suggested by research on gentrification. Most notably, renters, first-time homebuyers, minority households, and those without a college education disproportionately make such moves. These findings may provide some guidance for policy makers and urban officials wishing to foster diversity within low income neighborhoods.

As to *why* higher income households move into relatively low income neighborhoods, we find that households who place less value on neighborhood services (such as renters and childless households) are more likely to make RLIN moves. Further we find that many households who make RLIN moves do so for financial reasons -- these moves save households money.<sup>xxiv</sup> Counter to conventional wisdom, then, at least on average, households making RLIN moves do not seem to be selecting unique Victorian homes or opting for neighborhoods that are hipper, more accessible or expected to improve. Rather, they are choosing these neighborhoods because they are cheaper, and these households are willing to give up neighborhood quality for such savings. An important caveat is that such moves appear to be more common when residential choices are more limited, for example among minorities in more racially segregated areas and among renters and first-time homebuyers in areas that have experienced greater house price appreciation. So some of these households may have made different choices had they faced (or believed they faced) a broader set of possibilities.

Of course, there are other motivations that are also consistent with these moves. For example, higher income minority households may be affirmatively choosing low income neighborhoods out of a preference for living with other minorities; or RLIN movers more generally may wish to live in economically diverse environments. Such additional rationales should be addressed in future research on this topic.

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<sup>i</sup>We focus only on mover households, households who have already decided that the benefits from moving outweigh the costs.

<sup>ii</sup> Admittedly, credit standards may loosen in rapidly appreciating markets, but until the recent subprime boom, down payment requirements continued to pose a real constraint for new homebuyers.

<sup>iii</sup> We do not include the 1995, 1997, 1999, 2005, 2007 or 2009 cross sections as we do not feel that the 1990 and 2000 Decennial Census data can accurately describe these neighborhoods.

<sup>iv</sup> Note, this is a minimum income difference requirement. Based on this definition about half of the RLIN movers have incomes that are twice the neighborhood median income.

<sup>v</sup> Where income of the previous occupant is missing (including newly constructed units) we require the incoming household to have an income at least 15 percent above that of the neighborhood.

<sup>vi</sup> Income at one point in time will be subject to error. Specifically, we may misclassify a move as RLIN for households with a temporary positive shock. We are also looking at gross income, rather than disposable resources. To the extent that some households differentially experience other costs (i.e., medical) or have fewer assets, they too will be classified as making RLIN moves.

<sup>vii</sup> Tables 1, 2 and 5 include the full sample described here. Tables 3 and 4 include sub-samples of this primary sample which are limited by missing data.

<sup>viii</sup> RLIN movers make up between 25 and 30 percent of movers in any given cross section.

<sup>ix</sup> Note this is in contrast to households moving into ‘gentrifying’ neighborhoods, who are more commonly white homeowners than those who move into other low income neighborhoods (see e.g., McKinnish, Walsh, White, 2010).

<sup>x</sup> Households may be unwilling to make RLIN moves in areas where the tradeoffs are perceived to be too large in terms of critical neighborhood attributes, such as safety. Since census tract crime rates are not available for the bulk of our sample, we proxy with central city crime rates.

<sup>xi</sup> About 75 percent of the housing units in our sample appear once, about 20 percent appear twice and the remainder of the housing units appear three or four times. Standard errors are clustered at the unit level.

<sup>xii</sup> We have estimated both OLS and logistic regressions with very similar results; we present the OLS results to ease comparison of the relative magnitude of coefficients within and across models.

<sup>xiii</sup> Our measure of house price appreciation is drawn from the Federal Housing Finance Agency metropolitan house price indices and measured as one year house price appreciation, one year prior to the given survey year.

<sup>xiv</sup> We use the dissimilarity index, a commonly used measure of segregation. See James and Tauber (1985) for a more detailed discussion.

<sup>xv</sup> The underlying assumptions associated with the use of this model are that the error terms are independent and identically distributed across the households choices (following an extreme value distribution) and that households select the residential choice that maximizes their utility.

<sup>xvi</sup> We identify a job node as a census tract that contains more than 5 percent of the jobs in a metropolitan area. For metropolitan areas with no census tracts that contain over 5 percent of the total jobs, distance to job node takes a value of zero. We rely on the Longitudinal Employer-Household Dynamics OnTheMap dataset (<http://lehd.did.census.gov/led/onthemap/>) as our measure of metropolitan jobs. We then compute the Euclidean distance between the centroid of each tract to the nearest job node.

<sup>xvii</sup> RLIN homeowners, but not renters, are also more likely to select newer housing.

<sup>xviii</sup> While we control for neighborhood income, there may remain a correlation between other neighborhood characteristics and the share of units in a neighborhood that would meet our RLIN definition for a given mover. Hence, some differences may be driven by our definition of RLIN moves.

<sup>xix</sup> We define neighborhood income gain through a comparison of the 1990 tract mean income to the 2000 tract mean income, relying on the Neighborhood Change Database for normalized tract boundaries.

<sup>xx</sup> We do find that homeowners (who have more to benefit from entering neighborhoods that improve) are somewhat more likely to pick gaining neighborhoods than renters, though this is only true for existing homeowners. However, given that existing homeowners also have higher incomes than other households, these gains in neighborhood income may well be endogenous.

<sup>xxi</sup> We present results for estimation using OLS, but logistic regressions yield similar results.

<sup>xxii</sup> Again we run these models using OLS, but have also estimated these models using logistic regressions and find similar results. This is true for all models in this section.

<sup>xxiii</sup> Of course, if a household’s previous housing decision was also an RLIN move, the current move may be motivated by cost savings and yet, *ex post*, housing costs may well not decline.

<sup>xxiv</sup> We cannot explore here what drives the desire for costs savings, which may arise from unobserved constraints or costs (i.e. high debt, high medical costs).



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**Table 1** Sample Characteristics

|                                  | RLIN Movers | Other Movers <sup>†</sup> | Differences Significant |
|----------------------------------|-------------|---------------------------|-------------------------|
| Median Household Income          | \$58,058    | \$47,940                  | ***                     |
| Median Person/Tract Income Ratio | 1.94        | 1.04                      | ***                     |
| <i>Race</i>                      |             |                           |                         |
| % Nonhispanic White              | 67.9%       | 76.8%                     | ***                     |
| % Nonhispanic Black              | 13.2%       | 8.0%                      | ***                     |
| % Hispanic                       | 13.5%       | 9.8%                      | ***                     |
| % Other                          | 5.5%        | 5.4%                      | NS                      |
| <i>Education</i>                 |             |                           |                         |
| % No High School Diploma         | 8.8%        | 6.0%                      | ***                     |
| % Entered 12th Grade             | 26.8%       | 23.1%                     | ***                     |
| % 1-3 Years College              | 27.9%       | 28.6%                     | NS                      |
| % 4 Years College or more        | 36.4%       | 42.3%                     | ***                     |
| <i>Age Distribution</i>          |             |                           |                         |
| Under 40                         | 60.4%       | 62.0%                     | **                      |
| % 40 to 60                       | 29.8%       | 29.4%                     | NS                      |
| % Over 60                        | 9.8%        | 8.6%                      | ***                     |
| <i>Household Composition</i>     |             |                           |                         |
| Have Kids                        | 34.6%       | 37.4%                     | ***                     |
| In Private School                | 14.3%       | 14.8%                     | NS                      |
| In Public School                 | 85.7%       | 85.2%                     | NS                      |
| Married                          | 50.1%       | 51.4%                     | NS                      |
| <i>Tenure</i>                    |             |                           |                         |
| Own                              | 40.0%       | 46.9%                     | ***                     |
| First-Time Homeowners            | 54.2%       | 49.3%                     | ***                     |
| Repeat Homeowners                | 45.8%       | 50.7%                     | ***                     |
| Rent                             | 60.0%       | 53.1%                     | ***                     |
| <i>Destination of Move</i>       |             |                           |                         |
| Suburbs                          | 44.7%       | 58.3%                     | ***                     |
| Central City                     | 55.3%       | 41.7%                     | ***                     |
| Sample Size                      | 6,563       | 16,272                    |                         |

<sup>†</sup> All movers whose income is above 60 percent of AMI but did not make RLIN moves.

<sup>‡</sup> Income adjusted for inflation, reported in 1999 dollars.

\* Significant at 1 percent level, \*\* Significant at 5 percent level, \*\*\* Significant at 10 percent level

**Table 2** Probability Household Makes RLIN Move

|                                  | Pooled    |           | Owners    |           | Renters   |           |
|----------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
|                                  | (1)       | (2)       | (3)       | (4)       | (5)       | (6)       |
| <b>Household characteristics</b> |           |           |           |           |           |           |
| Owner                            | -0.101*** | -0.096*** |           |           |           |           |
|                                  | 0.01      | 0.008     |           |           |           |           |
| Income                           | 0.194***  | 0.188***  | 0.106***  | 0.103***  | 0.357***  | 0.342***  |
|                                  | 0.014     | 0.009     | 0.013     | 0.011     | 0.037     | 0.018     |
| Income Squared                   | -0.021*** | -0.020*** | -0.012*** | -0.012*** | -0.037*** | -0.035*** |
|                                  | 0.002     | 0.001     | 0.002     | 0.001     | 0.004     | 0.003     |
| Black                            | 0.161***  | -0.135**  | 0.188***  | -0.063    | 0.151***  | -0.155**  |
|                                  | 0.016     | 0.054     | 0.023     | 0.099     | 0.018     | 0.064     |
| Hispanic                         | 0.109***  | -0.045    | 0.106***  | -0.068    | 0.114***  | -0.023    |
|                                  | 0.011     | 0.048     | 0.021     | 0.079     | 0.012     | 0.061     |
| College or More                  | -0.053*** | -0.055*** | -0.055*** | -0.056*** | -0.050*** | -0.054*** |
|                                  | 0.007     | 0.006     | 0.01      | 0.009     | 0.01      | 0.009     |
| Under 40                         | -0.005    | -0.007    | 0.006     | 0.000     | -0.014    | -0.015    |
|                                  | 0.006     | 0.007     | 0.009     | 0.010     | 0.010     | 0.010     |
| Over 60                          | 0.034**   | 0.037***  | 0.041**   | 0.046***  | 0.023     | 0.019     |
|                                  | 0.013     | 0.012     | 0.017     | 0.015     | 0.019     | 0.019     |
| Kids                             | -0.029*** | -0.030*** | -0.025*** | -0.029*** | -0.028**  | -0.029*** |
|                                  | 0.008     | 0.007     | 0.009     | 0.010     | 0.012     | 0.010     |
| Married                          | -0.002    | -0.002    | -0.01     | -0.007    | 0.004     | 0.003     |
|                                  | 0.006     | 0.007     | 0.01      | 0.01      | 0.009     | 0.009     |
| New Homeowner                    | 0.053***  | 0.048***  | 0.040***  | 0.015     |           |           |
|                                  | 0.011     | 0.011     | 0.011     | 0.013     |           |           |

**Table 2** Probability Household Makes RLIN Move (continued)

| <b>MSA Characteristics</b>                             |           |          |          |           |          |           |
|--|-----------|----------|----------|-----------|----------|-----------|
| MSA House Price Appreciation                           | 0.166**   |          |          | -0.069    |          | 0.195*    |
|  | 0.08      |          |          | 0.132     |          | 0.101     |
| Interaction New Homeowner/<br>House Price Appreciation | 0.101     |          |          | 0.565***  |          |           |
|  | 0.152     |          |          | 0.180     |          |           |
| Black/White Dissimilarity                              | -0.085*** |          |          | -0.097*** |          | -0.074*   |
|  | 0.027     |          |          | 0.037     |          | 0.038     |
| Interaction Black/<br>Black/White Dissimilarity        | 0.462***  |          |          | 0.382**   |          | 0.486***  |
|  | 0.088     |          |          | 0.159     |          | 0.105     |
| Hispanic/White Dissimilarity                           | -0.235*** |          |          | -0.234*** |          | -0.230*** |
|  | 0.037     |          |          | 0.051     |          | 0.051     |
| Interaction Hispanic/<br>Hispanic/White Dissimilarity  | 0.358***  |          |          | 0.412**   |          | 0.313**   |
|  | 0.107     |          |          | 0.175     |          | 0.136     |
| Central City Crime                                     | -0.109    |          |          | -0.212    |          | 0.114     |
|  | 0.143     |          |          | 0.203     |          | 0.200     |
| Constant   | 0.255***  | 0.412*** | 0.247*** | 0.427***  | 0.163*** | 0.302***  |
|  | 0.011     | 0.022    | 0.015    | 0.031     | 0.018    | 0.031     |
| MSA FE   | X         |          | X        |           | X        |           |
| Sample Size  | 22,835    | 22,835   | 10,261   | 10,261    | 12,574   | 12,574    |

\* Significant at 1 percent level, \*\* Significant at 5 percent level, \*\*\* Significant at 10 percent level

Regressions of probability that a household makes an RLIN move on household and metropolitan level characteristics. Robust standard errors are reported.

**Table 3 Residential Choice**

|   | Owners    |           | Renters   |           |
|---|-----------|-----------|-----------|-----------|
|   | (1)       | (2)       | (3)       | (4)       |
| <b>Interactions of RLIN Moves with:</b> |           |           |           |           |
| <i>Unit Characteristics</i>             |           |           |           |           |
| Price/Bedroom                           | -0.034*** | 0.001     |           |           |
|   | 0.003     | 0.005     |           |           |
| Rent/Bedroom                            |           |           | -0.090*** | 0.058***  |
|   |           |           | 0.025     | 0.020     |
| Bedrooms                                | -0.018*** | 0.013***  | -0.023*** | 0.017***  |
|   | 0.004     | 0.005     | 0.006     | 0.005     |
| Built Pre 1940                          | 0.084***  | 0.013     | 0.135***  | 0.022*    |
|   | 0.012     | 0.013     | 0.013     | 0.012     |
| Built Post 1980                         | 0.034***  | 0.034***  | -0.030**  | 0.008     |
|   | 0.009     | 0.01      | 0.013     | 0.011     |
| <i>Neighborhood Chars</i>               |           |           |           |           |
| Median Income Ratio                     |           | -0.440*** |           | -0.501*** |
|   |           | 0.028     |           | 0.018     |
| % Minority                              |           | 0.064**   |           | 0.062**   |
|   |           | 0.029     |           | 0.026     |
| % College Educated                      |           | -0.01     |           | -0.181*** |
|   |           | 0.042     |           | 0.039     |
| % Homeowners                            |           | -0.064**  |           | -0.164*** |
|   |           | 0.028     |           | 0.024     |
| % Old Housing                           |           | 0.083**   |           | 0.065**   |
|   |           | 0.034     |           | 0.030     |
| Distance to Job Node                    |           | 0.001*    |           | 0.001     |
|   |           | 0.001     |           | 0.001     |
| % Use Public Transportation             |           | -0.041    |           | -0.001    |
|   |           | 0.083     |           | 0.061     |
| Change in Income                        |           | 0.004*    |           | 0.003     |
|   |           | 0.003     |           | 0.003     |
| Change in Minority Composition          |           | 0.010     |           | -0.052    |
|   |           | 0.054     |           | 0.047     |
| Change in College Educated              |           | 0.109     |           | -0.001    |
|   |           | 0.085     |           | 0.082     |
| Share New Construction                  |           | -0.119*** |           | -0.091**  |
|   |           | 0.035     |           | 0.039     |
| Full Interactions                       | X         | X         | X         | X         |
| Sample Size                             | 63,613    | 63,613    | 104,291   | 104,291   |

\* Significant at 1 percent level, \*\* Significant at 5 percent level, \*\*\* Significant at 10 percent level  
 Regressions of probability a household selects a given unit on unit and neighborhood characteristics.  
 Coefficients reported are on the interactions between an indicator variable that the household made an RLIN move interacted with the unit and neighborhood characteristics. Coefficients represent Marginal Effects. Robust standard errors are reported.

**Table 4** Commute to Work

|                              | Pooled    | Owners    | Renters   |
|------------------------------|-----------|-----------|-----------|
|                              | (1)       | (2)       | (3)       |
| RLIN Move                    | -0.005    | 0.582     | -0.473    |
|                              | 0.389     | 0.623     | 0.494     |
| Income                       | 1.229***  | 1.047***  | 1.664***  |
|                              | 0.269     | 0.323     | 0.484     |
| Owner                        | 2.846***  |           |           |
|                              | 0.301     |           |           |
| Minority                     | 2.025***  | 1.966***  | 2.024***  |
|                              | 0.385     | 0.648     | 0.474     |
| Kids Present                 | 1.072***  | 0.687     | 1.465***  |
|                              | 0.293     | 0.443     | 0.388     |
| Interaction Minority/Pioneer | -1.078    | -2.247*   | -0.363    |
|                              | 0.675     | 1.208     | 0.813     |
| Constant                     | 19.239*** | 22.055*** | 19.130*** |
|                              | 0.36      | 0.584     | 0.462     |
| Year Dummies                 | X         | X         | X         |
| Sample Size                  | 19,240    | 8,509     | 10,731    |

\* Significant at 1 percent level, \*\* Significant at 5 percent level, \*\*\* Significant at 10 percent level  
 Regressions of length of commute to work on household characteristics.



**Table 5** Primary Reasons for Choosing Neighborhood and Unit

|              | Primary Reasons for Choosing Neighborhood |                       |                        |                       |           |                |                       |           | Primary Reasons for Choosing Unit |           |
|--------------|---|-----------------------|------------------------|-----------------------|-----------|----------------|-----------------------|-----------|-----------------------------------|-----------|
|              | (1)                                       | (2)                   | (3)                    | (4)                   | (5)       | (6)            | (7)                   | (8)       | (1)                               | (2)       |
|              | Convenience to Job                        | Convenience to People | Convenience to Leisure | Public Transportation | Schools   | Other Services | Looks of Neighborhood | Unit      | Financial                         | Size      |
| RLIN Move    | -0.010*                                   | 0.013***              | 0.001                  | -0.001                | -0.017*** | 0.002**        | -0.021***             | 0.008     | 0.025***                          | -0.009**  |
|              | 0.005                                     | 0.004                 | 0.002                  | 0.001                 | 0.003     | 0.001          | 0.005                 | 0.005     | 0.006                             | 0.004     |
| Income       | -0.003                                    | -0.011***             | 0.003**                | 0                     | 0.004*    | 0              | 0.011***              | -0.009*** | -0.044***                         | 0.007**   |
|              | 0.003                                     | 0.002                 | 0.001                  | 0                     | 0.002     | 0              | 0.003                 | 0.003     | 0.003                             | 0.003     |
| Owner        | -0.120***                                 | -0.034***             | -0.007***              | -0.007***             | -0.001    | -0.002*        | 0.035***              | 0.084***  | -0.015**                          | -0.048*** |
|              | 0.005                                     | 0.004                 | 0.002                  | 0.001                 | 0.003     | 0.001          | 0.005                 | 0.005     | 0.006                             | 0.004     |
| Minority     | 0.006                                     | 0.006                 | -0.010***              | 0.006***              | -0.015*** | 0.003**        | 0.005                 | -0.004    | -0.007                            | 0.013**   |
|              | 0.006                                     | 0.005                 | 0.002                  | 0.002                 | 0.003     | 0.001          | 0.005                 | 0.005     | 0.007                             | 0.005     |
| Kids Present | -0.067***                                 | -0.003                | -0.012***              | -0.004***             | 0.107***  | 0              | -0.005                | 0.019***  | -0.008                            | 0.053***  |
|              | 0.005                                     | 0.004                 | 0.001                  | 0.001                 | 0.004     | 0.001          | 0.005                 | 0.005     | 0.006                             | 0.004     |
| Constant     | 0.230***                                  | 0.096***              | 0.019***               | 0.011***              | 0.019***  | 0.005***       | 0.107***              | 0.144***  | 0.310***                          | 0.076***  |
|              | 0.006                                     | 0.005                 | 0.002                  | 0.002                 | 0.003     | 0.001          | 0.005                 | 0.006     | 0.007                             | 0.005     |
| Year Dummies | X   | X                     | X                      | X                     | X         | X              | X                     | X         | X                                 | X         |
| Sample Size  | 22,835                                    | 22,835                | 22,835                 | 22,835                | 22,835    | 22,835         | 22,835                | 22,835    | 22,835                            | 22,835    |

\* Significant at 1 percent level, \*\* Significant at 5 percent level, \*\*\* Significant at 10 percent level  
 Regressions of primary reason for choosing a neighborhood and unit on household characteristics.