NEIGHBORHOOD FORECLOSURES

AND

RESIDENTIAL MOBILITY

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Ryan Gabriel
Department of Sociology
University of Washington

Kyle Crowder
Department of Sociology
University of Washington

Matthew Hall
Department of Policy Analysis and Management
Cornell University

Amy Spring
Department of Sociology
Georgia State University
ABSTRACT

In this paper, we draw from longitudinal data from the Panel Study of Income Dynamics linked with data on virtually all foreclosure events between 2005 and 2011 to investigate the effects of neighborhood foreclosure concentrations on residential mobility for blacks and whites during the period of the Great Recession. Using logistic regression, we observe that blacks, as compared to whites, encounter substantial difficulties in exiting neighborhoods with increasing foreclosures. These findings remain significant to racial differences in home equity, personal foreclosure, and other socioeconomic and demographic factors that are known to influence mobility patterns. Our findings have implications for understanding racial and ethnic variations in mobility responses to foreclosure, processes of neighborhood change and, more importantly, stratification in exposure to structural decline that has tended to coincide with high foreclosure concentrations.
**INTRODUCTION**

The global recession of the late-2000s was arguably the most profound and consequential economic development in over a generation. Some roughly 16 million homes were foreclosed on during the Great Recession, leading many families to migrate under substantial duress, and fundamentally altering residential dynamics in ways that likely motivated others to relocate. In fact, in terms of overall magnitude, the migration explosion during the recession rivaled many other major migration flows that dramatically reshaped social and economic conditions in the country (Hall, Crowder, and Spring 2015a; Stoll 2013).

Despite the vast geographic breadth and immense economic depth of the housing crisis, we lack a fundamental understanding of the processes and repercussions of the crisis. For example, while we have some evidence that the foreclosure crisis helped to slow the decline of residential segregation (Hall et al. 2015a), existing research provides almost no information about the underlying mechanisms. We know little about how mounting concentrations of housing foreclosures shifted residential decision-making for individual householders during the recession, or how these migration effects differed for members of different racial groups. As a result, we have only a limited picture of how the housing crisis shifted patterns of racial-residential stratification.

In part, this lack of understanding is due to an absence of high-quality national data on household foreclosures which has stifled efforts to assess the impact of the housing crisis on residential mobility processes. Some studies have focused on the effect of the foreclosure crisis on neighborhood processes, but these studies have been limited in geographic and temporal scope, often focusing on dynamics within specific counties or metropolitan areas over a relatively short amount of time (Batson and Monnat 2014; Katz, Wallace, and Hedberg 2011;
Moreover, because they are based on aggregate data, these studies have provided few clues about the individual-level mobility reactions to foreclosure concentrations. The shortage of research on the individual-level repercussions of the housing crisis is problematic given evidence that concentrations of foreclosures have profound impacts on neighborhood distress and instability (Kingsley, Smith, and Price 2009) and increase the likelihood of neighborhood racial transition leading to greater ethnoracial segregation (Hall et al. 2015a). Moreover, consistent with general patterns of racial residential segregation, housing foreclosures were not dispersed evenly across racial groups, but were particularly concentrated in black communities, leaving them vulnerable to the vicissitudes that accompany distressed neighborhoods.

In this paper we begin to redress this gap in existing literature by investigating the influence of neighborhood foreclosure concentrations on residential mobility for blacks and whites during the period of the Great Recession. We draw from individual-level restricted access longitudinal data from the Panel Study of Income Dynamics (PSID) linked to unique address-level data from RealtyTrac that represents virtually all foreclosure events occurring from 2005 to 2011 to develop measures of foreclosure concentrations in the neighborhoods to which the PSID respondents were exposed. These data allow us to offer the first national-level and temporally inclusive assessment on the effects of the housing crisis on residential mobility processes that influence emerging patterns of neighborhood racial stratification.

BACKGROUND AND THEORY

Prior to the U.S. foreclosure crisis hitting in 2007 a multitude of complex factors contributed to its creation and widespread devastation. Scholars have highlighted that risky and predatory lending strategies (Bocian, Li, and Ernst 2010), active and passive government legislation
Immergluck 2015), irresponsible borrowing, and increasing housing prices coalesced to create
the most severe economic downturn since the Great Depression (Been, Chan, et al. 2011). Of all
of these contributing factors leading to the foreclosure crisis, a shift from traditional lending
strategies to more exotic lending mechanisms was central (Martin and Niedt 2015:8-15).
Traditionally, lenders generated profits on mortgages from a consistent flow of interest payments
made by borrowers. Because of the risk associated with extending loans, lenders were strongly
invested in screening potential borrowers’ credit histories and requiring relatively low loan-to-
value ratios to ensure sufficient equity in case of defaults.

However, beginning in the 1970s, and gaining traction in the 1980s and 1990s, the
financial instrument of securitization allowed mortgage loans to be separated from their
originators and sold as investment products (Immergluck 2015). Known as mortgage-backed
securities, these investment products provided lenders greater profits than the traditional method
of originating and servicing loans (Sowell 2009). And, due to increased investor demand for
mortgage-backed securities, subprime and other exotic loans were created and used to finance
housing for less qualified buyers who were historically blocked from homeownership (Howell
2006). These exotic loans obfuscated high prices through adjustable rate mortgages, interest-
only, and negative-amortization loans with low monthly payments (Engel and McCoy 2011).
Deceptive in nature, these loan practices increased the pool of buyers to fund a broader
investment banking structure dependent on high volumes of new mortgage loans.

Subprime and other exotic loans situated numerous buyers in an extremely precarious
position when home prices began to fall precipitously in 2007. Coupled with the overall slowing
of the economy and increasing unemployment, millions of homeowners who had bet on rising
home prices or mortgage refinancing were left with negative equity (i.e., borrowers owed more
than the value of their homes) and unable to recover (Been, Chan, et al. 2011). The relative number of borrowers with negative equity in their homes during the foreclosure crisis was staggering. Approximately 23 percent of all U.S. homeowners had negative equity in 2010, totaling over $750 billion dollars in negative equity (CoreLogic 2011). Although some households with negative equity weathered the economic downturn, the sharp increase in the number of foreclosures during crisis confirms that many were not so fortunate. This is evidenced that between 2007 and 2010, the estimated number of annual foreclosures increased by more than fourfold, from about 650,000 to 2.9 million (RealtyTrac 2011).

Despite the massive scope of the foreclosure crisis, it was not evenly or randomly distributed across racial groups. Predominantly black neighborhoods were frequently targeted by subprime lenders (Engel and McCoy 2011; Rugh and Massey 2010; Squires 2003) leading to blacks’ greater likelihood of experiencing a residential foreclosure (Bayer, Ferreira, and Ross 2013). In early work investigating subprime loans in Chicago, Immergluck and Wiles (1999) found that between 1993 and 1998 the number of subprime products increased thirty-fold in neighborhoods with large black shares, while similar lending practices grew only two-fold in white neighborhoods. More recent research focusing on the pinnacle of subprime lending activity in 2006 observed that 53 percent of blacks who obtained home loans received subprime products compared to 17 percent of whites (Avery, Brevoort, and Canner 2007). Moreover, in a national study observing home loans originated in 2006, Faber (2013) determined that after controlling for socioeconomic and demographic characteristics, black borrowers were 2.4 times more likely than comparable white borrowers to receive a subprime loan. The increased likelihood of black neighborhoods receiving a subprime loan was also found to be significantly associated with their level of segregation from whites. In their 2015 study, Hwang, Harkinson,
and Brown highlighted that minority neighborhoods in metropolitan areas with higher levels of racial segregation had higher rates of subprime lending than metropolitan areas with lower levels of segregation.

Beyond blacks being much more likely than whites to receive a subprime loan, there is clear evidence that they were at greater risk of experiencing a residential foreclosure than whites. For instance, nearly 8 percent of home loans for blacks originated between 2005 and 2008 were foreclosed on between 2007 and 2009. Conversely, white home purchasers had a 4.6 percent foreclosure rate during the same period (Bocian et al. 2010). On the whole, these factors led to predominantly black neighborhoods having some of the highest foreclosure rates in the country, while contrary to media coverage, many white suburban neighborhoods were largely protected from the brunt of the foreclosure crisis (Hall, Crowder, and Spring 2015b).

The racial patterning of the foreclosure crisis is especially pernicious due the inimical effects foreclosures had on families and broader communities. What is readily apparent is that the foreclosure crisis further stratified the black/white gap in wealth. Rugh, Albright, and Massey (2014) found in their case study of the effects for subprime lending on the loss of wealth for blacks in Baltimore, Maryland that black borrowers paid an additional 5 to 11 percent in monthly payments. Those black households who foreclosed lost in excess of $2 million in home equity. Rugh and colleagues also observed that these total losses were highly concentrated in predominantly black neighborhoods. On the national level, Pfeffer and colleagues (2013) found that between 2007 and 2011 more than half of U.S. households lost at least 25 percent of their total wealth. These losses were strongly concentrated among low-income, less educated, and minority populations. Additionally, foreclosures have been found to be associated with school change (Been, Ellen, et al. 2011), which can negatively affect mobile students’ academic
performance (Taylor and Edwards 2012; Ziol-Guest and Mckenna 2014), especially among black populations (Hanushek, Kain, and Rivkin 2004). In addition to the negative effects on children, home foreclosures were related to detrimental health outcomes. Available research indicates that sharp increases in neighborhood foreclosures were associated with a surge in unscheduled hospital visits (Currie and Teken 2013). Particularly startling is the fact that foreclosure concentrations were found to be associated with increasing suicide rates, independent of other economic characteristics related to the Great Recession (Houle and Light 2014).

The foreclosure crisis also imposed a number of other significant costs to communities. In conjunction with decreasing property values (Frame 2010; Immergluck and Smith 2006), in some scenarios foreclosures led to vacant housing and neglected properties (Kingsley, Smith, and Price 2009) that contributed to heightened neighborhood disorder (Wallace, Hedberg, and Katz 2012) and crime (Katz et al. 2011; Williams, Galster, and Verma 2013). For instance, Katz, Wallace, and Hedberg (2011) found in Glendale, Arizona that rates of property crime and violent crime were positively associated with foreclosure concentrations at the neighborhood-level.

While foreclosures impacted crime and other neighborhood conditions, increasing concentrations of foreclosures have also been shown to influence individual perceptions of neighborhoods. In their 2014 study, Batson and Monnat observed that pronounced concentrations of foreclosures during the crisis were related to a perceived lowering of neighborhood quality of life. Given that residential dissatisfaction can provide the impetus to move (Speare 1974; Speare, Goldstein, and Frey 1975), those households with sufficient social and economic capital to flee increasing foreclosures within their neighborhoods might have made such attempts.

Past research has confirmed a high level of residential mobility among families experiencing foreclosure (Molloy and Shan 2011). Less clear is the extent to which families—
including those not experiencing foreclosure—responded to foreclosures concentrations among their neighbors. High concentrations of neighborhood foreclosure might have elevated residential mobility among households seeking to circumvent continued losses to home equity caused by the spillover effects of foreclosure and to escape heightened levels of neighborhood disorder. But the likelihood of escaping such areas may have differed substantially by race. In relation to this, there is some evidence that foreclosure concentrations during the Great Recession were strongly associated with changes in neighborhood racial composition with large decreases in white population shares occurring in areas in which foreclosures were most heavily concentrated (Hall et al. 2015a). Such evidence not only suggests that the foreclosure crisis likely helped to alter broad patterns of neighborhood change, but that the ability of families to avoid the negative neighborhood consequences of concentrated foreclosures may have been stratified by race.

However, because evidence on this topic comes mainly from aggregate-level data, it is not known whether racial differences in residential mobility in the face of neighborhood-level foreclosure concentrations were prevalent at the individual-level. In other words, we do not know how responsive black and white homeowners were to increasing foreclosure concentrations. Given past research, we would expect to observe differential racial responses to foreclosures due to blacks’ lower capital and status positions compared to whites. For instance, in 2009 the median net wealth for black households was $5,677, while white households was $113,149 (Kochhar, Fry, and Taylor 2011). Furthermore, according to the U.S. Census, between 2000 and 2011 the ratio of median net wealth for blacks and whites sharply increased from 10.6 to 17.5 (Vornovitsky, Gottschalck, and Smith 2011). Additionally, using data from the American Housing Survey, Krivo and Kaufman (2004) observed that blacks earned substantially less equity in their homes over time than whites. They detailed that for whites residing in the same
home for at least 10 years was associated with an average gain of $31,750 in home equity, but blacks earned half that amount at $15,830. Beyond racial differences in wealth and home equity, whites may have possessed a significant advantage in selling their homes during the foreclosure crisis. This is partially supported by the fact that whites occupy neighborhoods that have greater levels of attraction across the ethnoracial spectrum (Bader and Krysan 2015), possibly expanding their pool of potential homebuyers. Overall, these racial differences could have left many blacks few options to sell their homes in the face of increasing shares of foreclosures, rendering them stuck in distressed neighborhoods, while whites’ enhanced capital and status positions might have better situated them to flee areas with burgeoning foreclosure concentrations.

**DATA AND METHODS**

To investigate whether there are racial group differences in the ability to flee neighborhood foreclosures, we have developed unique multi-level data set from several data sources, including the Panel Study of Income Dynamics and public foreclosure records. The PSID is a longitudinal survey of U.S. residents and their families that began in 1968 with approximately 5,000 families. Members of panel families were interviewed annually between 1968 and 1997 and every two years thereafter; new families are added to the panel as children and other members of original panel families form their own households. The PSID is particularly useful for our purposes because it utilizes a geographically-dispersed, nationally-representative sample, includes a wide array of micro-level factors that influence housing and migration outcomes, and contains detailed information on home foreclosure proceedings. We focus on the observation years between 2005 and 2013, which covers the full duration of the foreclosure crisis, from the beginning, to the time widely viewed as the recovery period.
We focus on homeowners living in a census-defined metropolitan area at both the beginning and the end of an observation period. We also follow much of the prior work in this area (e.g., Crowder et al. 2012; Massey et al. 1994; Quillian 2002) by using census tracts to represent neighborhoods. Additionally, during the PSID interview respondents are asked if they have moved since the last interview and, if so, what month and year did their most recent move occur. This interview question allows us to create a series of person-quarter observations that tracks residential out-mobility across quarters. Thus, our sample segments each individual data record into a series of person-quarter observations for household heads, with each observation referring to a one-quarter interval between biennial PSID interviews. By choosing to utilize person-quarters, our investigation into the relationship between cumulative foreclosures and residential out-mobility has greater precision. Our total sample of person-quarters consists of 69,210 observations, with non-Hispanic whites making up the largest proportion of observations (N=54,769), followed by non-Hispanic blacks (N=14,441).

Additionally, we attach concentrations of neighborhood foreclosures to PSID respondents through data provided by RealtyTrac. RealtyTrac gathers local foreclosure listings and documents from county assessor’s offices across the U.S. The database includes all pre-foreclosure filings, public auction notices, and bank repossessions for the 2005 to 2011 period, which provide the universe of foreclosure filings for every metropolitan county. These data include the physical addresses of all properties in the foreclosure process and the timing of the filings. With these data, we create a panel file of unique foreclosure events that tracks individual properties through the foreclosure process. To do so, we use a rule-based ‘fuzzy’ matching algorithm (Elmagarmid, Ipeirotis, and Verykios 2007) based on multiple fields—including address, tax parcel number, transaction and judicial case IDs—that identify unique properties,
remove potential sources of redundancy, and to impute any incomplete information (e.g., property type recorded on the *lis pendens* but not on the Notice of Trustee Sale). Using our algorithm, we find that “fuzzy” matches—records that do not match on address but match on the other criteria and likely represent the same property and foreclosure process—represent 1.82% of the original data.\(^1\) Since we are interested in the concentration of foreclosures impacts on residential mobility, we exclude non-residential properties from the file. Although our panel file includes all events in the foreclosure process, we restrict our analyses to cases representing the first visible sign of housing distress—a listing for public auction (i.e., Notice of Trustee Sale, Notice of Foreclosure Sale) or repossession by a bank (Real Estate Owned). Doing so serves multiple purposes: (1) it prevents counting the same property multiple times in calculating foreclosure rates; (2) it normalizes the foreclosure process across states since all states require public filings for such events; and (3) it follows from our theoretical interest in the broader individual responses to foreclosure events that are likely to be visible by neighbors.

Geographic longitude and latitude of each record are determined using Bings Maps REST Services API, which resolves coordinates to the center of parcels. With these geocodes, we use GIS tools to assign each observation its census tract (using 2000 TIGER/Line files) and calculate the total number of foreclosures within each tract for each month. Using the geographic information provided by RealtyTrac, we then create tract measures of the cumulative foreclosure rate as of each quarter between 2005 and 2011 by dividing the number of foreclosed properties

\(^{1}\) We estimate that our algorithm matches records that do not match on address alone at an accuracy rate of about 78%. Without adjustment, these records would be counted as separate foreclosures, producing an overcount of foreclosures in the unadjusted original data of approximately 1.21%. In contrast, our algorithm produces an undercount of approximately 0.4%, and in the interest of producing more conservative estimates of foreclosures we opt for a small undercount rather than a larger overcount. Because multiple unique foreclosures can occur at the same property, we compare the time between two foreclosure events against the minimum processing time reported by each state to distinguish whether the event represents the continuation of a foreclosure process or the beginning of a new foreclosure process.
since the start of the data collection period in January 2005 by the total number of residential units represented in the census data in 2005 and multiplying by 100.

The dependent variable in our analysis is a dichotomous outcome indicating whether the respondent conducted a inter-tract move between PSID person-quarters (a value of 1 for those who moved during the mobility interval, and 0 for those who remained in the same tract). Our focal independent variable is a 9 quarter lag of the cumulative foreclosure rate for each respondent. Assessing the effect of cumulative foreclosures on residential mobility necessitates the use of a lagged measure for one distinct reason: the actuation of a residential mobility intention is a temporally dependent process. According to theories that consider the actuation of mobility intentions, an individual has a mismatch with their current residence and their needs, selects an alternative destination, and then chooses whether to move or remain (Landale and Guest 1985; Speare, Goldstein, and Frey 1975). Situations of household crowding, distance from employment, and other neighborhood contextual factors can trigger the intention to move. In our case, the cumulative concentration of neighborhood foreclosures represents the primary impetus for generating a mobility intention. However, residential mobility reactions to neighborhood conditions are not likely to be immediate and, given this, it is unclear how long the lag of cumulative foreclosure rate should be. In the absence of theoretical guidance on the matter we tested lags at various distances while attempting to balance three factors: (1) size of the lagged cumulative foreclosure rate coefficient; (2) coefficient efficiency; and (3) sample size. Our investigation—using the aforementioned guidelines—determined that an 9 quarter lag was optimal.

We also consider the effects of a number of theoretically relevant micro-level and contextual characteristics that may account for racial group differences in residential location and
mobility. Key demographic predictors include marital status, taking a value of 1 for married, age (in years) of the household head and the number of children in the family. Financial resources are indicated by the total family taxable income, measured in thousands of constant 2010 dollars. Other measures of socioeconomic conditions include (1) the education (in completed years) of the household head; (2) employment status of the household head, coded as 1 for those employed at least part-time; and (3) the amount of home equity for the household head. To control for the association between residential mobility and personal foreclosure, we include a dummy variable taking a value of 1 for those whose lenders had started foreclosure proceedings. We also control for household crowding, measured by the number of persons per room, as well as length of residence, indicated with a dummy variable taking a value of 1 for those respondents who had lived in their home for at least three years at the beginning of the observation period. Finally, to explore arguments that neighborhood socioeconomic status is associated with the concentrations of foreclosures and residential mobility we include a control for average neighborhood family income. Additionally, we include an indicator for the year-quarter of observation in order to account for trends in neighborhood context and mobility.

We utilize logistic regression to estimate the effects of an eight-quarter lagged neighborhood cumulative foreclosure rate on the likelihood of carrying out a residential move during a particular person-quarter for black and white homeowners. The lagged neighborhood cumulative foreclosure rate is expressed as a second-order polynomial to address the nonlinearity in the relationship with residential mobility. These pooled models utilize an interaction term between the eighth-quarter lagged neighborhood cumulative foreclosure rate and racial status to assess whether blacks and whites are significantly different from each other in their residential mobility responses. In all models we account for the non-independence of multiple observations
related to the same individual using the *vce(cluster)* procedure available in Stata to compute robust standard errors (StataCorp 2013).

**RESULTS**

Table 1 provides an initial description of racial differences in the exposure to cumulative foreclosures and the likelihood of moving throughout the Great Recession. During the Great Recession, black homeowners were less likely to change neighborhoods than whites. Additionally, blacks homeowners were in neighborhoods with substantially higher concentrations of foreclosures across all temporal lags investigated in our study. Table 1 demonstrates that for blacks the cumulative foreclosure rate in their neighborhoods from time $t$ to $t - 9$ is approximately double the level of whites. The combination of these two observations suggests that there may have been large racial differences in the persistence of exposure to neighborhood foreclosure and related structural problems.

*[Table 1 about here]*

There are other important racial differences that may help to shape these racial differences in levels of residential mobility and possible mobility reactions to foreclosure concentrations: black homeowners are less likely to be married or permanently cohabiting, have slightly larger families, and are more likely to have lived in their home for at least three years. There are also substantial racial differences in socioeconomic resources that may affect residential mobility and the likelihood of escaping high-foreclosure neighborhoods. For instance, black homeowners have a markedly lower average family income than whites, have slightly less education and are less likely to be employed. Moreover, the typical white household possesses $100,000 more equity in their homes than black homeowners, potentially increasing whites’ abilities’ to sell their homes in the face of increasing foreclosure concentrations. And, consistent
with past research, black households were twice as likely as whites to experience a foreclosure which, all else being equal, should tend to increase their relative likelihood of residential mobility.

Table 2 presents the results of a series of logistic regression analyses predicting the log-odds of leaving the census tract as a function of the 9 quarter lag of local foreclosure concentrations and individual- and family-level characteristics. Model 1 demonstrates that, among white homeowners, larger concentrations of foreclosures are associated with an elevated risk of mobility \( (b = 0.0838, p < 0.05) \), but this effect is nonlinear with the slope becoming less pronounced at the highest concentrations of foreclosures \( (b = -0.0024, p < 0.05) \). This pattern is illustrated in Figure 1 which graphs the predicted probability of residential mobility by race and the 9 quarter lag of the cumulative foreclosure rate.

This mobility pattern in Model 1 differs markedly for black homeowners. In comparison to whites, black homeowners are less likely to move. More importantly, among blacks, their likelihood of out-mobility appears to be less responsive to the concentration of foreclosures in their neighborhoods as compared to whites. And while the interaction between race and neighborhood foreclosures is not significant, the combination of this interaction coefficient \( (b = -0.0486) \) with the coefficient for foreclosure concentrations \( (b = 0.0838) \) produces a less pronounced slope for black homeowners. Moreover, the interaction involving foreclosure-squared and race \( (b = 0.0023, p = 0.053) \) suggests that the threshold between foreclosures and mobility that appears for whites is minimally present among blacks. Overall, black homeowners are less likely than white homeowners to move and their mobility appears to be less clearly tied to neighborhood foreclosures. The repercussion, as Figure 1 highlights, is that black homeowners are less likely than whites to leave areas with high foreclosure concentrations.
Model 2 adds a series of controls to assess the extent to which these racial differences reflect the influence of other sociodemographic characteristics that shape residential mobility. Model 2 shows a significant negative association between mobility and martial status, indicating that those who are married or have a long term cohabitor are less likely to move. Those who are older are also significantly less likely to change tracts across quarters, and living in the same house for at least three years significantly decreases the likelihood of residential mobility. Nevertheless, the addition of these measures does little to alter racial differences in mobility reactions to neighborhood foreclosure concentrations. Similarly, controlling for substantial racial differences in economic characteristics in Model 3 does little to alter the central findings. Thus, even among those with similar economic and demographic characteristics, black homeowners are less likely than whites to have moved during the Great Recession and their mobility was less responsive to the concentration of foreclosures in their neighborhoods.

Finally, Model 4 considers the possibility that higher rates of mobility out of areas with high foreclosure concentrations reflects the fact that residents of such areas are themselves more likely to have experienced a foreclosure during the mobility interval. The results indicate that foreclosure is an important predictor of mobility (\( b = 1.0732, p < .001 \)) and this effect helps to explain part of the positive link between neighborhood foreclosure concentrations and out-mobility among whites.\(^2\) However, despite the fact that black homeowners are substantially more likely to have experienced foreclosure (see Table 1), the racial stratification in mobility dynamics is not substantially altered by controlling for individual foreclosure. As displayed in Figure 2,

\(^2\) Supplemental models reveal that the effect of household foreclosure in Model 4 is primarily responsible for attenuating the positive association between 9 quarter lagged cumulative foreclosures and residential mobility for whites.
black homeowners had much lower rates of out-mobility during the recession than did similarly-positioned whites, and this racial difference persisted across all levels of neighborhood foreclosure, net of controls.

[Figure 2 about here]

CONCLUSION

The U.S. foreclosure crisis of the late-2000s led to the most acute economic downturn since the Great Depression. Millions of households who faced foreclosure were forced out of their homes under extreme financial difficulty, leading to a sharp increase in residential mobility. In spite of the profound impact that the foreclosure crisis had on household migration, our understanding is limited concerning the effects of escalating foreclosure concentrations on individual households’ residential mobility behaviors. And arguably of even greater importance, how foreclosure concentrations influenced race specific migration patterns, potentially altering emerging frameworks of residential stratification. Therefore, in this analysis, we utilized individual-level restricted access longitudinal data from the Panel Study of Income Dynamics (PSID) linked to unique address-level data from RealtyTrac that represents nearly all foreclosure events from 2005 to 2011 to develop measures of foreclosure concentrations in the neighborhoods to which black and white PSID homeowners were exposed. Using these data we investigated the effects of mounting foreclosure concentrations on the residential mobility behaviors of black and white homeowners.

Our findings show that the effect of neighborhood foreclosure concentrations were strongly differentiated along racial lines. On the whole, black homeowners were less likely than white homeowners to move during the foreclosure crisis, and the effect of escalating foreclosure concentrations appears to be more strongly linked to the out-mobility behaviors of whites than
blacks. Particularly striking is that we find that after controlling for racial differences in personal foreclosure that the modest ability of black families to exit neighborhoods marked by increasing foreclosures is attenuated to almost non-existence. While past research has outlined blacks’ higher rates of exposure to foreclosure concentrations through predatory lending in predominantly black communities (Immergluck and Wiles 1999), our study highlights black homeowners’ relative inability to flee neighborhoods that were under the strain of foreclosures. The inability of black families to escape areas of high foreclosure suggests that they were especially exposed to the structural decline (e.g., crime, vacant properties, etc.) associated with those spaces. These findings are even more stark when supplementary analysis (not shown) failed to reveal a significant effect of income for blacks and whites in escaping neighborhoods with increasing foreclosure concentrations. Thus, it appears that highly resourced black households could not translate their economic standing to move out of areas with rising numbers of foreclosures and circumvent losses in home equity, while a measurable portion of whites relocated no matter the level of their economic resources.

The results we have presented here also have implications for racial differences in wealth. Rugh, Albright, and Massey (2015) observed that predominately black neighborhoods encountered acute financial losses associated with the foreclosure crisis in Baltimore, Maryland. Our study suggests that financial losses for black homeowners residing in neighborhoods with substantial concentrations of foreclosures may have been widespread. Given that neighborhood foreclosures are known to influence property values, and declining property values lead to losses in home equity, blacks’ seeming difficulty to escape neighborhoods with high foreclosure concentrations could have led to decreases in their home equity. Further contributing to an
already significant wealth gap between blacks and whites (Hall and Crowder 2011; Pager and Shepherd 2008).

Although our study offers new insights on the individual-level mobility behaviors of black and white homeowners during the foreclosure crisis, future research would do well to investigate the neighborhood destinations of those who experience personal foreclosure. At present, it is unclear whether those who foreclose migrate to significantly different neighborhoods than those who do not experience a foreclosure, and whether racial differences exist in that process. Investigating this would provide insight on emerging patterns of residential stratification influenced by the foreclosure crisis.
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Currie, Janet and Erdal Teken. 2013. *Is There a Link Between Foreclosure and Health?*


Table 1. Descriptive Statistics for the Analyses of Blacks and Whites from the Panel Study of Income Dynamics; 2005-2013

<table>
<thead>
<tr>
<th></th>
<th>Black mean</th>
<th>Black sd</th>
<th>White mean</th>
<th>White sd</th>
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<tr>
<td>CFR</td>
<td>6.99</td>
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<td>Employed (1 = yes)</td>
<td>.69</td>
<td>.46</td>
<td>.72</td>
<td>.44</td>
</tr>
<tr>
<td>Education (in years)</td>
<td>13.06</td>
<td>2.60</td>
<td>14.29</td>
<td>2.83</td>
</tr>
<tr>
<td>Family income (in $1000s)</td>
<td>66.42</td>
<td>45.92</td>
<td>108.77</td>
<td>143.10</td>
</tr>
<tr>
<td>Home equity (in $1000s)</td>
<td>67.60</td>
<td>86.80</td>
<td>166.21</td>
<td>247.00</td>
</tr>
<tr>
<td>Foreclosure start</td>
<td>.02</td>
<td>.15</td>
<td>.01</td>
<td>.09</td>
</tr>
<tr>
<td>Year-quarter</td>
<td>200902</td>
<td>1.09</td>
<td>200902</td>
<td>1.09</td>
</tr>
<tr>
<td>N of person-quarter observations</td>
<td>14441</td>
<td></td>
<td>54769</td>
<td></td>
</tr>
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</table>

*Note: CFR = cumulative foreclosure rate*
Table 1. Logistic Regression of Migration Out of Neighborhoods for Blacks and Whites from the Panel Study of Income Dynamics; 2005-2013

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFR</td>
<td>.0838***</td>
<td>.0744**</td>
<td>.0712**</td>
<td>.0636*</td>
</tr>
<tr>
<td></td>
<td>(.0243)</td>
<td>(.0271)</td>
<td>(.0269)</td>
<td>(.0271)</td>
</tr>
<tr>
<td>CFR X CFR</td>
<td>-.0024*</td>
<td>-.0022*</td>
<td>-.0021*</td>
<td>-.0020*</td>
</tr>
<tr>
<td></td>
<td>(.0010)</td>
<td>(.0010)</td>
<td>(.0010)</td>
<td>(.0010)</td>
</tr>
<tr>
<td>Black</td>
<td>-.5320**</td>
<td>-.6354***</td>
<td>-.6282***</td>
<td>-.6574***</td>
</tr>
<tr>
<td></td>
<td>(.1682)</td>
<td>(.1689)</td>
<td>(.1698)</td>
<td>(.1693)</td>
</tr>
<tr>
<td>Black X CFR</td>
<td>-.0486</td>
<td>-.0454</td>
<td>-.0428</td>
<td>-.0500</td>
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<tr>
<td></td>
<td>(.0383)</td>
<td>(.0378)</td>
<td>(.0377)</td>
<td>(.0377)</td>
</tr>
<tr>
<td>Black X CFR X CFR</td>
<td>.0023</td>
<td>.0022</td>
<td>.0021</td>
<td>.0023*</td>
</tr>
<tr>
<td></td>
<td>(.0012)</td>
<td>(.0012)</td>
<td>(.0011)</td>
<td>(.0011)</td>
</tr>
<tr>
<td>Married (1 = yes)</td>
<td>-.3663**</td>
<td>-.3293**</td>
<td>-.3067**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.1118)</td>
<td>(.1145)</td>
<td>(.1142)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
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<td>-.0262***</td>
<td>-.0235***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.0046)</td>
<td>(.0048)</td>
<td>(.0050)</td>
<td></td>
</tr>
<tr>
<td>Number of children</td>
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<td>-.0477</td>
<td>-.0487</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.0487)</td>
<td>(.0484)</td>
<td>(.0485)</td>
<td></td>
</tr>
<tr>
<td>Persons in family per room</td>
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<td>.3041</td>
<td>.2496</td>
<td></td>
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<tr>
<td></td>
<td>(.1809)</td>
<td>(.1786)</td>
<td>(.1871)</td>
<td></td>
</tr>
<tr>
<td>Same house 3 + years (1 = yes)</td>
<td>-.6201***</td>
<td>-.5879***</td>
<td>-.5653***</td>
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<tr>
<td></td>
<td>(.1029)</td>
<td>(.1035)</td>
<td>(.1037)</td>
<td></td>
</tr>
<tr>
<td>Employed (1 = yes)</td>
<td>-.3179**</td>
<td>-.3070*</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(.1190)</td>
<td>(.1199)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education (in years)</td>
<td>.0419*</td>
<td>.0489**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.0167)</td>
<td>(.0166)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family income (in $1000s)</td>
<td>-.0004</td>
<td>.0000</td>
<td></td>
<td>-.0007*</td>
</tr>
<tr>
<td></td>
<td>(.0005)</td>
<td>(.0004)</td>
<td></td>
<td>(.0004)</td>
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<tr>
<td>Home equity (in $1000s)</td>
<td></td>
<td></td>
<td></td>
<td>1.0732***</td>
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<td></td>
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<td>(.2250)</td>
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<tr>
<td>Year-quarter</td>
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<td>.0002</td>
<td>.0001</td>
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<td>(.0003)</td>
<td>(.0003)</td>
<td>(.0003)</td>
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<tr>
<td>Constant</td>
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<td>-60.5838</td>
<td>-47.1366</td>
<td>-33.0200</td>
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<td>(.0593)</td>
<td>(66.7088)</td>
<td>(66.3947)</td>
<td>(66.8312)</td>
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<td>BIC</td>
<td>5566.0405</td>
<td>5505.8845</td>
<td>5528.6070</td>
<td>5529.0635</td>
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</tbody>
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Note: N of observations = 69,210; CFR = cumulative foreclosure rate, 9 quarter lag
*p < .05; ** p < .01; *** p < .001

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Figure 1. Predicted Probability of Residential Mobility by Race and Nine Quarter Lag of Cumulative Foreclosure Rate, No Controls
Figure 2. Predicted Probability of Residential Mobility by Race and Nine Quarter Lag of Cumulative Foreclosure Rate, With Controls