Who Is Forced to Move?

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Abstract.

Forced residential mobility has recently seen an uptick in scholarly work and public attention with the aftermath of the 2008 foreclosure crisis. Lately, much political debate has been centered around the lack of affordable housing in American cities. Research on the foreclosure crisis have highlighted disparities in rates of forced moves between whites and minorities, however these are only specific types of forced moves. The purpose of this paper is to investigate, under a broad definition of forced moves, including eviction, foreclosure, private displacement, government displacement, and disaster caused displacement, the household level predictors that influence the likelihood a person will be forced to move. I use the 2013 American Housing Survey, administered by the United States Census Bureau, to test four explanations for being forced to move and highlight differences in predictors between homeowners and renters with a nationally representative sample. I find homeownership and higher income increase residential stability, while the presence of a disabled person, or a child increase the likelihood a household will be forced to move. Homeowners are more likely to move if they have a disabled person in the household, and renters are more likely to move if they have children. Across racial groups I do not find differences in overall forced moves, however black and mixed race renters are more likely to be evicted than white renters. Presence of a disabled person is a significant predictor of both eviction and foreclosure.

Introduction.

Scholars have analyzed residential mobility for several decades in the United States, though there has been relatively little research identifying why some households are more likely to be forced to move (Vogel, Porter, and McCuddy 2017). Recent research on residential instability has focused on the occurrence and consequences of evictions, foreclosures, and disaster related moves (Desmond 2012; Hall, Crowder and Spring 2013; Elliot 2015). However, these analyses have largely not been nationally representative and are not inclusive of all types of forced moves. In this paper I examine the risk of experiencing many kinds of forced moves on a nationally representative scale.

Research has shown a litany of negative impacts of forced residential mobility. Desmond, along with co-investigators have studied the consequences of being evicted and found, for example, that mothers who are evicted experience higher rates of material hardship and depression than their peers for at least two years after being evicted (Desmond and Kimbro 2015). An analysis after the foreclosure crisis saw an increase in suicides among middle-aged adults (Houle 2014). People who are forced to move undergo stress due to their dire circumstances. Stress not only impacts the householder's mental health, but also their ability to maintain safe living conditions. Renters who do not move voluntarily are more likely to accept substandard housing in order to maintain shelter for their families (Desmond, Gershenson, and Kiviat 2015). Additionally, the likelihood for low-income renters who experience a forced move to be laid off from their job is eleven to twenty-two percent higher than workers who remained housing stable (Desmond and Gershenson 2016). One of the most serious consequence that can occur as a result of residential instability is being without shelter, or homeless. The prevalence of homelessness in a region is largely due to local rent levels (Lee, Price-Spratlen, and Kanan

2016). The presence of a homeless population highlights the interconnectedness of housing and labor markets with health and stability. Losing a job or moving into a low-quality housing unit has immediate and long-term effects that do not help a household achieve their housing preferences, and can hinder their ability to lead a healthy, stable life.

The American Housing Survey (AHS), administered by the United States Census Bureau, defines forced moves as including eviction, foreclosure, disaster loss, private displacement and government displacement. These events can be defined as follows: an eviction is when a landlord removes a tenant who is delinquent in rent. A bank that holds the mortgage on a home can take back ownership due to delinquent payments resulting in a foreclosure. Private displacement can occur when a landlord decides not to renew a lease with a tenant, forcing them to leave the unit, providing them with a legal notice. The government holds the power to purchase property through eminent domain, but also it regulates housing to ensure it is safe for habitation. If the government decides the unit is not fit for people to live in, it can close the unit for occupation, forcing the tenant to move. Similarly, a disaster or flood may leave a unit uninhabitable, forcing the resident to leave.

Using the 2013 National Sample of the AHS I estimate several logistic regression models to test theories of residential instability in order to analyze the likelihood of experiencing a forced move. In my analysis I introduce and test four explanations of why households make forced moves, including: factors related to race, socioeconomic factors, household vulnerability, and a locational risk model. The logistic regression analyses will test the factors of these models against the dependent variable of forced move to answer the following research questions:

1) Are households headed by a racial/ethnic minority more likely than a non-Hispanic white individual to experience a forced move?

2) Are households with lower socioeconomic status, defined by educational attainment and yearly income, more likely than households of higher status to experience a forced move?
3) Are households with higher vulnerability, defined as a household with children, a household member with a physical or mental disability, a head of household under 65, or a non-married head of household, more likely than households without to experience a forced move?
4) Are households located in a certain region of the United States more likely than people in other regions to experience a forced move?
5) Are homeowners less likely to experience a forced move than renters? Are the factors that predict a forced move the same for homeowners and renters?
6) Are different types of forced moves predicted by the same household factors?

Background.

The government actively intervenes in the housing market to provide benefits to homeowners, real estate developers, and low-income renters. It provides support to homeowners and real estate developers through tax deductions and credits and helps low-income renters in two ways: the government rents apartments at affordable rates and provides housing vouchers to cover all or a portion of rent on the private market. Many local governments provide emergency services to tenants to help them stay in their apartments. In addition to the government, there are many not-for-profit, and for-profit real estate companies that utilize government subsidies, through grants and tax credits, to build affordable housing.

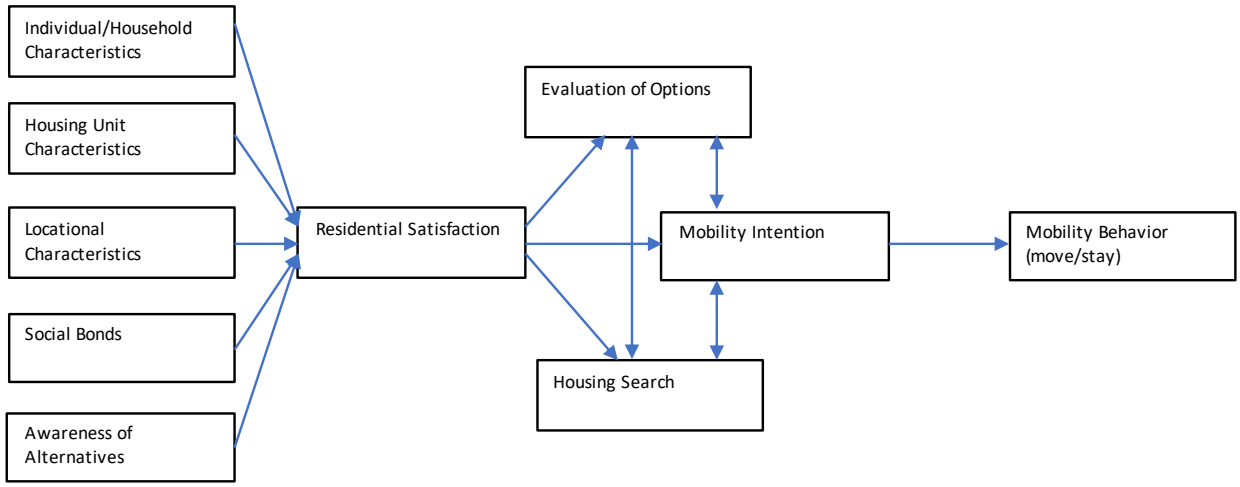
Even with this government intervention in the housing market, in many highly-populated areas there are insufficient amounts of affordable housing, as housing costs have drastically risen

with population growth. Meanwhile in areas of economic disinvestment, households experiencing income precarity have experienced residential instability. Recent data show that much of America is housing burdened, as rents and home values have skyrocketed since the end of the housing crisis (Desmond 2018). The supply of housing in many coastal cities has been artificially held down by local government zoning regulations limiting the number of units that can be built through a variety of rules (Rothwell and Massey 2010). At the same time income inequality has been rising dramatically in the United States, as the top 1% have seen large gains in their income since 1980, and the bottom 50% has seen their wages remain mostly stagnant (Piketty, Saez, and Zucman 2016). These conditions suggest that the United States may have a high risk of another housing crisis. Some data suggest that the country is currently ignoring an ongoing one. For the first time a national database has been created to keep track of formal evictions by state. The Eviction Lab founded by Matthew Desmond has found that nearly 1 million households are evicted yearly, not including evictions not completed in court, otherwise known as informal evictions (2018). In contrast, 379,000 homeowners lost their homes to foreclosure in 2016, a low point from a peak of over a million during the recent foreclosure crisis (Bernstein 2017). The numbers do not indicate a crisis, but they do show a persistent problem of residential instability. Another factor increasing the risk of forced moves is through flooding, forest fires, and other natural disasters that destroy homes. These events have increased in recent years and are expected to increase due to global climate change. Coastal cities, like Boston, expect sea-level rise to dramatically change the areas impacted by reoccurring floods (Strauss et al. 2012). We can expect that with the current trends forced moves will not be going away.

Models of Forced Moves.

One of the first comprehensive analysis of residential mobility culminated in the book *Why Families Move?* (1955) by Peter Rossi. In the years passing, another comprehensive analysis was conducted by Alden Speare, Sydney Goldstein, and William Frey (1976) detailed in the book *Residential Mobility, Migration, and Metropolitan Change*. The work of these scholars and others in the residential mobility field can be examined through the conceptual model below

Figure 1. Conventional Model of Residential Mobility.

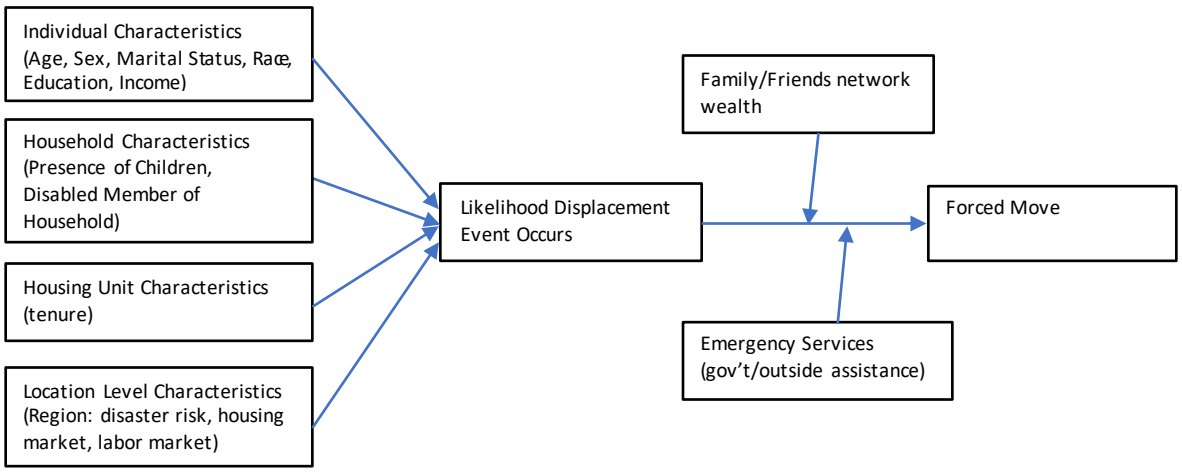


The findings in this field of research describe how households became dissatisfied with their current residence. Examples of these factors, shown on the left side of the model, include adding another child to the family, a decline in the quality of the housing unit, changing locational preferences, the location where families and friends live, and the awareness of alternative accommodations through marketing. Such factors indicate why a household may wish to change residence to better meet their needs or preferences. The right side of the model describes how a household evaluates options to determine if a more favorable housing situation is possible. However, early scholars in the field also noted that not all households moved in this way. Rossi (1955) estimated as many as 40% of moves were considered involuntary, another estimate by

W.A.V. Clark (1986), estimated 5-10% of all moves were involuntary. Yet the factors that predicted these moves were largely unexamined, except for analyses done in the early 1980s when Lee and Hodge recognized the emerging need for a new theoretical model of forced residential mobility. Lee and Hodge (1984) and Sell (1983) investigated the topic of forced mobility using Annual Housing Survey data. Lee and Hodge analyzed spatial differentials in the prevalence of forced moves from 1975-1979. Sell's analysis focused on the varying "volitional type" (forced, induced, or voluntary) of moves. He also described the characteristics of populations that were forced to move from 1973-1977, however, these were not conducted using multivariate regression analysis.

As mentioned previously, contemporary research on forced moves has examined disparities in the characteristics of households who experience a forced move. However, the research has focused only on specific types of forced mobility, most notably eviction and foreclosure, along with some research on disaster and hazard related moves. The innovation of this study is in its examination of these forced moves together, in addition to private displacement and government displacement, which have largely been unstudied. I created a model conceptualizing forced residential mobility based on the residential mobility model.

Figure 2. Conceptual Model of Forced Residential Mobility for Homeowners and Renters.



Instead of hinging on the residential satisfaction of the household, as the residential mobility does, this model hinges on the likelihood of an event occurring that displaces a household. A displacement event could be an eviction notice, a foreclosure notice, a notice of non-renewal from the landlord, a notice from the government stating the unit is no longer suitable for habitation, or a natural disaster of varying degrees. The probability that one of these events occurs is impacted by the characteristics of the individual householder, the rest of the household, whether the householder owns or rents the unit, and the location of the residence. Then if a displacement event does occur, the household may be able to remain in their household, depending on if it is still fit for habitation, by receiving assistance from friends and family, or from local government or not-for-profits that focus on housing stability. If they are unable to receive this assistance, they will then be forced to move.

In my analysis, I explicitly test the left side of the model, and implicitly test the right side of it in the process by analyzing race and regional differences. I also test differences in the likelihood of a forced move between owners and renters, in addition to examining differences between renters who are forced to move versus renters who are not forced to move, and the same for homeowners. Overall renters are four times more likely to move than homeowners and have lower levels of wealth that may help them achieve residential stability (Fischer 2002; Winkler 2011).

Racial Stratification.

Racial and ethnic minorities (i.e. Hispanics and blacks) have lower rates of homeownership and have owned homes in segregated neighborhoods that have lower values than predominantly white neighborhoods. The ability of minority households, especially African-American households, to move up the housing ladder, as outlined by the residential mobility

model, has been limited by explicit policies of the United States government to racially segregate neighborhoods prior to the passing of the 1960s Civil Rights Acts (Rothstein 2017). The impact of racial segregation is felt to this day because the wealth of an American household is largely based on the value of their home, as when homeowners pass away, their heirs inherit this value. The result of this unequal inheritance has contributed to the wealth gap, where the average white family has ten times the wealth of an average black family, and a similar gap for Hispanic families (Shapiro, Meschede, and Osoro 2014). The residential attainment literature has studied the continued impacts of racial segregation on where people choose to live. However, wealth and homeownership disparities between races also impacts the likelihood a household will experience forced residential mobility.

Research on eviction, foreclosure, and homeownership exit (a transition from homeowner to renter) has tested the racial stratification explanation of forced mobility. There has been evidence found to support the racially stratified explanation in specific types of forced moves. Most notably, Desmond (and co-authors) have studied evictions in the United States through first an extensive qualitative analysis, recorded in his Pulitzer Prize winning book *Evicted* (2016), and in a series of quantitative examinations. He suggests through his analysis that eviction reproduces urban poverty. The mark of an eviction decreases the ability of people to improve their living conditions. He finds this is most prominent among black and Hispanic women, although, he finds a stronger effect on black women, extending the theory of an urban underclass formulated by William Julius Wilson (1987; Desmond 2012). Research on the foreclosure crisis has shown its disproportionate impact on Hispanic and Black majority neighborhoods (Hall, Crowder, and Spring 2015). Sharp and Hall found that blacks are much more likely than whites to experience a transition from homeowner to renter (2014). Additionally, black and Hispanic

women are seen to have a higher risk of being forced to move due to disasters and hazard-related damages to the property they inhabit (Elliot and Howell 2017). The disparity in homeownership stability shows how differences in wealth cause and perpetuate racial disparities in not only the ability to improve housing conditions, but also the likelihood a household will be forcibly removed from their home. I can expect mixed race individuals and Native American people will experience similar differences, however I expect Asians to be more similar with whites, due to their higher overall socioeconomic status (Pew Research 2013). I will control for citizenship status to ensure recent immigration differences are considered.

Socioeconomic Stratification.

There is an abundance of literature showing households with lower socioeconomic status are more likely to experience a forced move than those with higher status (Desmond, Gershenson and Kiviat 2015; Webb and Brown 2017). People with higher levels of education and income are more likely to be able to handle shocks, such as unexpected bills or change in income, than those with lower socioeconomic resources (McLeod and Kessler 1990).

Economic security is a constant struggle for many households. Households fall in and out of poverty year by year. Huff Stevens finds that a black family in poverty has a fifty percent chance of having income below the poverty line in five or more of the next ten years, while white families have a thirty percent chance (1999). Loss of employment and overall educational attainment impact the likelihood a household will enter or exit poverty (McKernan and Ratcliffe 2005). I expect, as Desmond finds for eviction, that lower income households will be more likely to experience a forced move.

Household Vulnerability.

A household is considered more vulnerable for a myriad of reasons. The presence of children is a known risk factor in being evicted and for transitioning out of homeownership (Desmond, An, Winkler, and Ferris 2013; Sharp and Hall 2014). Another known risk factor is the householder becoming disabled or having a person with a disability living in the household (Sharp and Hall 2014). An additional vulnerability is the marital status of the householder, and if the head of the household is female. If the householder is unmarried, there may be only a single income supporting the household (or have unstable sources of income). If this single income decreases, the household is at a high risk of instability (Desmond and Perkins 2016). The combination of these factors increases the likelihood a household is in an economically precarious situation. The presence of children and a member of the household being disabled may increase the likelihood for unexpected bills, i.e. medical bills, that force the household into a difficult financial situation that may hinder their ability to pay their rent or mortgage. Householders over the age of 65 may be more economically secure due to retirement pay, Social Security, and Medicare. I expect households headed by an individual under the age 65 to have a higher vulnerability of being forced to move.

Locational Risk.

Regions across the United States have different levels of risk for being forced to move (Ericson, Burgess and Marsh 2011). One of the most obvious is the risk of disasters, such as hurricanes, forest fires, tornadoes, and flooding that can destroy homes. These events are not equally distributed across the United States, as certain regions are more likely to experience these types of events. Also, regions have varying labor and housing markets. A housing market with rapidly rising costs may create a larger housing cost burdened population, which will

increase the risk that they will be forced to move. Alternatively, a regional labor market may be hit hard by job loss, creating a negative economic shock for many households that may make them more likely to be evicted or foreclosed on (Dwyer and Lassus 2015). Examining the spatial contexts where households are located is important to appropriately identify differential risk between different parts of the United States.

Contribution.

The residential mobility literature has not addressed the household level predictors of experiencing a forced move. While prior research has focused on homeownership exit, and eviction, moving past those specific types of moves into a broadly defined forced move allows for a more complete analysis of the population at-risk to experience a forced move. Through this analysis I am able to examine all types of forced moves that renters and homeowners may experience, on a nationally representative scale. Testing theories on racial and socioeconomic stratification, household vulnerability, and location variant risk create a more inclusive model to focus attention at the problem nationally, instead of regionally.

Sample.

The data for my analysis come from the American Housing Survey, administered by the United States Census Bureau. The survey is longitudinal, and interviewers ask the same housing unit questions every other year to produce biannual surveys. Interviewers may visit or telephone the occupant of the housing unit. I will be using the 2013 national sample of the survey. The 2015 survey underwent a significant redesign that does not include the specificity of forced moves I analyze. The 2013 National sample totals 84,400 housing units, with approximately 5,300 housing units that are an oversampled representation of subsidized housing units. This sample was selected from 394 primary sampling units (PSUs). The AHS data may provide

conservative estimates of forced moves. Desmond believes it undercounts the prevalence of eviction, due to 'informal evictions,' which he observed in his ethnographic research and survey analysis (Desmond and Schollenberger 2015). Another possible explanation for an undercount is simply that people may not wish to disclose they were evicted or foreclosed on.

Variables.

The dependent variable is a dichotomous indicator of whether or not a household was forced to move. The household would have responded that they were evicted, foreclosed on, lost their home due to disaster, displaced by a private landlord (through non-renewal of the lease), or displaced by the government in the past year. I test four multi-factor explanations on the dependent variable. I also test these explanations against each type of forced move.

The first set of explanatory variables I test are race/ethnicity. Race is separated into Black, White, Hispanic, Asian, Native American, and mixed race. These independent variables test for differences in the racial stratification model for experiencing a forced move. I also control for citizenship status in this explanation.

The next set of explanatory variables are socioeconomic variables. Yearly household income measured in 2013 US dollars is logged. Educational attainment is separated into categories: less than high school, high school diploma, some college (inclusive of associates degree, certifications, and some college courses), bachelor's degree, and graduate degree. It is expected that those with higher socioeconomic status will be less likely to experience a forced move in the socioeconomic status model. I control for if the mover previously owned their home in the models, however I leave this out of the socioeconomic explanation.

The third set of independent variables test the household vulnerability model. Vulnerability is determined by the presence of children, a member of the household having a

mental or physical disability, female head of household and marital status. These factors may increase the risk a renter is forced to move, indicate increased risk of income loss, or an increased risk for unexpected bills, including medical bills. The presence of the first factors, along with the head of household being unmarried may increase the likelihood the household is forced to move. Age is separated into three categories: under twenty-five, twenty-five to sixty-four, and sixty-five plus. Older aged householders tend to have higher status than younger ones, due to a lifetime of wealth accumulation.

The final model tested is locational risk; it is examined through the region variable separated into Northeast, Midwest, West and South. Regions in the United States can vary in key ways that impact the likelihood a household is forced to move. For one, the risk of hurricanes, tornadoes and other disasters that can destroy homes are not evenly distributed across the United States. This can be seen more regularly in the daily risk of flooding in coastal areas or living near reoccurring forest fires. Regions also have different labor and housing markets. A hot housing market may create home costs that are less affordable, or certain markets may be more apt to form a bubble, as seen in the recent housing crisis. Labor markets also vary region to region, and a less healthy labor market may mean more people are precariously housed. However, the use of region in the United States as location indicator is broad and imperfect as a measure of actual risk.

Analytical Strategy.

To test the four explanations for whether a household was forced to move or not I use logistic regression analysis. First, I test each explanation individually, without controlling for the others. A population that is residentially insecure will most likely also be economically insecure. To test the mediating impact of some impacts (e.g. SES) I will pool all of the main independent

variables in a second model to assess the relationship between the other explanations and forced moves. Through the creation of one model I test these explanations simultaneously. I also produce separate models for householders who previously rented and those who previously owned their home to test differences in predictors of experiencing a forced move. As mentioned earlier, homeowners are less mobile and wealthier than renters, therefore I expect that the predictors influencing a forced move may be different. In addition to these models, I also test each type of forced move as an individual outcome across all explanations and controls.

Results.

Table 1 presents the descriptive statistics, including the mean and standard deviations, for the variables used in this analysis of the AHS data. Nearly 1% of households are forced to move in a given year, according to this survey. I also include columns separately for respondents who have owned their home within the past 12 months, and for those who rented within this time period. We can immediately see that those who are currently renters were forced to move much more than those who are currently owners. Also, we can see homeowners are much more white than renters, they generally have higher incomes, and a larger portion of them have attained bachelor's and graduate degrees. Income is logged for the purposes of this analysis. The regression models will be weighted and thus the sample will be representative of the national population.

Table 2 reports the rate of forced moves by household characteristics. Respondents who owned their previous residence are much less likely to experience a forced move. Those with higher levels of education experience forced moves at a lower rate. We can also see that government displacement is much more rare than other types of forced moves. Householders aged twenty-five to sixty-four are also seen to be at higher risk of experiencing a displacement

event. This may represent socioeconomic status differences of householders under twenty-five, and economic security programs aimed at the sixty-five and older population. Regionally, the West shows a higher rate of forced moves than the others.

In Table 3, I present a logistic regression analysis of forced moves for each explanation. The first explanation examined is the racial stratification model. I test race/ethnicity including, black, Hispanic, Asian, mixed race, and Native Americans, against the reference category of whites. The results are significant for blacks, and for those of mixed race and Native American heritage. These findings support the racial stratification hypothesis, except for Hispanics. I expected to not find differences in forced moves between Asians and whites. However, as noted earlier socioeconomic or other factors may mediate the effects of race on the likelihood of experiencing a forced move (this is tested in Table 4 below). The next model presents the socioeconomic stratification model. The impact of income is highly significant, which indicates that lower incomes are much more likely to experience forced moves. The effect of income may mediate the impact of education; however, the results still support the socioeconomic explanation. The third explanatory model is the household vulnerability hypothesis. The results indicate strong support for this explanation. Presence of a child and member of the household who is disabled are both positively associated with the likelihood of experiencing a forced move, while married householders and those over the age of 65 are much less likely do so. The model of locational risk shows significant results, as there is a higher likelihood of experiencing a forced move for those living in the Midwest and West regions. This may indicate something about the local environment of these regions, as there could be higher housing costs, or higher risk of disaster related moves than the other regions.

The combined models are presented in Table 4 with a model for all respondents of the AHS, and two others broken out by homeowners and renters. Homeowners in this model either previously owned their home or owned their home throughout the past 12 months. Renters either previously rented or rented their residence throughout the past 12 months. For all households, homeowners are much less likely to experience a forced move than renters. Also, those with higher incomes, and householders either over age sixty-four or under twenty-five are more likely to be residentially stable. Households with children or a member of the household who is disabled are more likely to be forced to move. Household residing in the Northeast and South regions are less likely to experience a forced move than households in the West and Midwest. For homeowners, higher income and being over sixty-four is strongly associated with lower likelihood of experiencing a forced move. Those who have attained some college coursework, or a bachelor's degree are also less likely to experience this event. Homeowners in the West region are more likely to experience a forced move than those in the Northeast, Midwest, and South. Renters with higher incomes and householders under the age of twenty-five are less likely to be forced to move. Renters with children are more likely to be forced to move than those without. These findings support my hypotheses that household vulnerability, socioeconomic stratification, and different regional locations increase the likelihood of being forced to move, while homeownership decreases it. Also, the characteristics that increase the likelihood homeowners and renters are forced to move differ, except households with lower income are at higher risk in both. The racial stratification hypothesis is refuted.

Table 5 presents results of analyses estimated with the five specific types of forced moves. Homeowners with graduate degrees, those who are under twenty-five, or above sixty-four are less likely than other homeowners to experience a foreclosure. Homeowners in the

Northeast and South are less likely to be foreclosed on than those in the West and Midwest. Households with a disabled member are more likely to be foreclosed on than those without. These findings support the socioeconomic stratification, locational risk, and household vulnerability hypotheses. Renters who black, mixed race, and have someone in their household who has a disability are more likely to be evicted. In contrast, renters with higher incomes and over the age of sixty-four are less likely to be evicted. Households who are privately displaced are unlikely to be homeowners, black, or live in the Midwest. The racial stratification hypothesis is supported, as well as the three other explanations. Households that are displaced by the government are unlikely to be Hispanic or live in the Northeast. Disaster related forced moves are less likely for those with higher incomes, and more likely to occur outside of the West region (Midwest, Northeast, and South). The factors that predict forced moves by type vary, but in both renters in eviction and owners in the presence of a disabled person increase the likelihood of experiencing the displacement event.

Discussion.

The four explanations tested individually show strong support for each of them. However, a complete model indicates a mediating effect of income, region and household vulnerability predictors on the influence of race on the likelihood of experiencing a forced move. However, when the types of forced moves are split apart, we do see that black and mixed race renters are more likely to be forced to move than white renters. This finding is supported by Desmond's (2012) work, and indicates this disparity exists throughout income levels. The results provide strong support for the positive impact of homeownership on residential stability. It also shows strong support for the household vulnerability model. Notably the impacts of having a disabled member of the household and having children are significant, even controlling for

homeownership, with disability proving to be a strong predictor of foreclosure and eviction more specifically. These findings leave a question about the conditions and additional costs involved with providing the proper care for a member of the family who is vulnerable. This is an area for residential mobility scholars to look further into. The study contributes findings that emphasize the positive impact of homeownership and economic security on residential stability, along with illuminating the residential instability of all types of households with children, or with a disabled person.

The analysis I present is not without limitations. Using the 2013 version of the AHS is simply a point in time and does not reflect changing market conditions. The current labor market trends, along with increasing rents and home prices continue to change the number and composition of households in precarious housing situations. The AHS does not include a variable that indicates the wealth of household, which would help understand the role of wealth in maintaining residential stability. Additionally, the locational risk explanation could have improved precision by including metropolitan, county, or tract level variables to measure variation across space. Differences in local government policies to improve housing stability, or differences in wealth of a household's network remain unmeasured in this analysis.

Conclusion.

The government already intervenes in the housing market to improve affordability, but it is clearly inadequate. In many regions, local governments are limiting housing supply through the overregulation of housing by creating restrictions on new development. Zoning laws enforce height restrictions, parking minimums, and include other rules that limit the ability of developers to build new housing. The lack of supply is leading to skyrocketing housing costs: some estimates say that the United States needs 4.6 million new units by 2030 to keep up with demand

(Hoyt Advisory Services 2017). Removing restrictions in the housing market should allow for the affordability crisis to subside, however it will not be enough in the short-term. Recognizing the scope of the problem and the composition of households impacted may help to provide policymakers insight on targeted interventions.

The findings in my analysis may indicate a need for interventions at the family level. The presence of children and a disabled member of the household all increase the likelihood someone is forced to move. Providing family focused interventions may be most effective and most popular for political purposes (Badger and Cain Miller 2018). An intervention to increase assistance to households with a disabled member, or children to either reduce their costs (e.g. healthcare coverage) or increase their income could help reduce housing instability. The relatively small occurrence of forced moves proves fiscally feasible for the national government to improve efforts to stop forced moves. By identifying the risk factors of experiencing a forced move, I provide reason as to how a family policy focus may improve housing security.

However, improving housing stability may not be the most effective goal of policy. I would be remiss to mention that forced moves are not inherently bad. Corina Graif finds that households forced to move after Hurricane Katrina moved into less disadvantaged neighborhoods (2016). Also, in the Moving to Opportunity (MTO) experiment households are not necessarily forced to move, but given resources to move into better neighborhoods, or better local contexts. The findings from those studies conclude that children in the households who moved into low-poverty neighborhoods have better socioeconomic outcomes than those who do not (Chetty, Hendren, and Katz 2016). Keeping households stable in their current neighborhoods may limit the positive impact reducing forced moves will have. Policymakers may or may not be

able to influence the decisions households make with the resources providing by housing interventions, but they should consider all the costs and benefits of such policy.

Appendix.

Table 1. Descriptive statistics of variables in models by household tenure.

	All		Owner		Renter	
Householder Attributes	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Forced Move	0.80	8.92	0.48	6.88	1.46	12.01
Foreclosure	0.21	4.54	0.31	5.60	0.00	0.00
Eviction	0.17	4.09	0.00	0.00	0.50	7.08
Private Displacement	0.23	4.83	0.05	2.26	0.60	7.73
Government Displacement	0.03	1.86	0.01	1.20	0.08	2.74
Disaster Loss	0.16	3.98	0.10	3.11	0.29	5.33
Race						
White	68.91	46.29	77.05	42.05	52.92	49.92
Black	12.45	33.02	8.83	28.37	19.58	39.68
Asian	4.29	20.25	3.65	18.75	5.52	22.85
Mixed	1.05	10.21	0.83	9.09	1.43	11.85
Native Americans	0.63	7.90	0.49	7.00	0.88	9.36
Hispanic	12.67	33.26	9.14	28.82	19.66	39.74
Presence of Disabled Person	17.85	38.30	18.20	38.58	17.83	37.72
Female	47.11	49.92	44.62	49.71	51.98	49.96
Presence of Child	28.55	45.17	26.56	44.16	32.56	46.86
Age						
under 25	5.79	23.36	2.51	15.65	11.87	32.35
25-64	71.07	45.36	68.72	46.37	75.78	42.84
65+	23.14	42.17	28.77	45.37	12.35	32.90
Education						
Less than HS	12.79	33.40	10.52	36.80	17.25	37.87
High School	25.79	43.75	25.42	43.54	26.60	44.19
Some College	29.75	45.72	29.31	45.52	30.45	46.02
Bachelors	20.03	40.02	21.39	41.01	17.37	37.89
Graduate	11.64	32.07	13.35	34.02	8.21	27.46
Income (logged)	1067.43	112.72	1087.13	106.49	1038.68	141.70
Married	49.90	50.00	59.32	49.12	26.02	43.88
Region						
West	22.29	41.62	20.30	40.23	26.02	43.88
Midwest	22.39	41.68	23.95	42.68	19.26	39.34
Northeast	18.24	38.62	17.79	38.25	19.26	39.34
South	37.08	48.30	37.96	48.53	35.45	47.84
Previous Tenure						
Renter	33.31	47.13				
Owner	65.84	47.43				
Observations (N)	58,519		36,005		22,059	

*Owner and Renter represent prevous tenure for those who did moved, and current tenure for non-movers.

*All values multiplied by 100.

*Source: American Housing Survey National Sample 2013

Table 2. Characteristics of households forced to move.		
Householder Attributes	Occurrence	Rate
Previous Tenure		
Renter	293	1.46%
Owner	188	0.48%
Racial Stratification Model		
Race		
White	293	0.71%
Black	80	1.07%
Hispanic	72	0.95%
Asian	18	0.70%
Mixed Race	11	1.74%
Native Americans	7	1.85%
Not US Citizen (Not Mutually Excl.)	39	0.93%
Socioeconomic Stratification Model		
Educational Attainment		
Less than HS	92	1.20%
High School	142	0.92%
Some College	136	0.76%
Bachelor's Degree	72	0.60%
Graduate Degree	39	0.56%
Household Vulnerabilty Model		
Age		
Under 25	26	0.75%
25 to 64	400	0.94%
65 and Older	55	0.40%
Presence of Child	182	1.06%
Married	181	0.60%
Female	247	0.87%
Disabled Member of Household	117	1.09%
Locational Risk Model		
Region		
West	140	1.05%
Midwest	106	0.79%
Northeast	65	0.59%
South	171	0.77%
Total	481	0.81%

*All values are weighted

*Source: American Housing Survey National Sample 2013

Table 3. Odds ratios for forced moves by explanation.

Householder Attributes	Racial Stratification	Socioeconomic Stratification	Household Vulnerability	Locational Risk
Previous Owner				
Race				
(reference White)				
Black	1.517**			
Hispanic	1.298			
Asian	.9683			
Mixed	2.551*			
Native Americans	2.834*			
Not US Citizen	1.097			
Income		.799***		
Educational Attainment				
(reference Less than HS)				
High School		.860		
Some College		.764		
Bachelor's Degree		.658		
Graduate Degree		.654		
Presence of Child			1.558**	
Female Head of Household			1.006	
Married			.531***	
Presence of Disabled Person			1.876***	
Age				
(reference 25-64)				
Under 25			.742	
65 and Older			.392***	
Region				
(reference West)				
Midwest				.749
Northeast				.565**
South				.723

*All analyses are weighted.

*$p < .05$ **$p < .01$ ***$p < .001$

*Source: American Housing Survey National Sample 2013

Table 4. Odds ratios for analyses of forced moves by household tenure.			
Householder Attributes	All Households	Owner	Renter
Previous Owner	.418***		
Racial Stratification Model			
Race			
(reference White)			
Black	.888	1.511	.697
Hispanic	.801	.890	.699
Asian	.790	1.103	.551
Mixed	1.724	1.419	1.863
Native Americans	1.525	1.746	1.460
Not US Citizen	.845	1.175	.744
Socioeconomic Stratification Model			
Income	.844***	.769***	.892*
Educational Attainment			
(reference Less than HS)			
High School	.880	.690	.973
Some College	.716	.490*	.856
Bachelor's Degree	.661	.404*	.863
Graduate Degree	.707	.461	.918
Houshold Vulnerabilty Model			
Female	.996	1.098	.925
Age			
(reference 25-64)			
Under 25	.510**	.443	.538*
65 and Older	.441***	.252***	.741
Presence of Child	1.407*	1.485	1.464*
Married	.816	.651	1.017
Disabled Member of Household	1.450*	1.804*	1.245
Locational Risk Model			
Region			
(reference West)			
Midwest	.739	.533*	.938
Northeast	.568**	.219***	.943
South	.706***	.371**	1.042

*$p < .05$ **$p < .01$ ***$p < .001$

*All analyses are weighted.

*Source: American Housing Survey National Sample 2013

Table 5. Odds ratios for analyses of forced moves by type.

Householder Attributes	Foreclosure (Owners)	Eviction (Renters)	Private Displacement	Government Displacement	Disaster Loss
Previous Owner			.082***	.378	.408
Race					
(reference White)					
Black	.690	1.794*	.392*	1.463	1.162
Hispanic	.823	1.340	.825	.031**	.514
Asian	1.287	.868	.467	omitted	.946
Mixed	1.517	6.024**	1.218	omitted	omitted
Native Americans	omitted	1.706	2.062	4.848	2.251
Not US Citizen	.589	1.311	.718	2.760	.958
Income	.894	.797***	1.009	.756	.728***
Educational Attainment					
(reference Less than HS)					
High School	.782	.678	1.178	3.086	.723
Some College	.508	.521	1.260	1.203	.667
Bachelor's Degree	.400	.416	1.326	.774	.641
Graduate Degree	.132*	.429	1.280	.774	1.445
Presence of Child	1.339	1.464	1.481	1.597	1.169
Female Head of Household	1.018	1.111	.8234	.674	1.298
Married	.829	.749	.742	.823	.975
Presence of Disabled Person	1.886*	2.2173**	1.104	2.169	.825
Age					
(reference 25-64)					
Under 25	.199*	1.222	.316*	1.812	.446
65 and Older	.330*	.291**	.818	.523	.462
Region					
(reference West)					
Midwest	.669	1.115	.361**	.486	4.808*
Northeast	.092***	.803	.569	.172*	6.911**
South	.320**	.629	.678	.553	7.911**

*$p < .05$ **$p < .01$ ***$p < .001$

*All analyses are weighted

*Source: American Housing Survey National Sample 2013

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