

# The Effect of Household Debt and Wealth on Subsequent Housing Tenure Choice<sup>\*</sup>

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## Abstract

The purchase of a home is the largest investment made by most American families, and home equity is the largest component of family wealth. Homeownership, an essential part of the “American Dream,” has not only been a financial goal for many American families but is also central to U.S. housing policy. Scholars have long documented the social and economic merits of homeownership and explored the factors that influence access to it. However, despite the abundance of literature on homeownership and housing tenure choice, there lacks a study that focuses on whether and how debt and wealth influences a household’s decision to own or rent a home. This paper explores the effect of household debt and wealth on subsequent tenure choice. Using 2004 and 2008 panel data from the Survey of Income and Program Participation (SIPP), this study attempts to identify the causal effect of household debt and wealth on household’s decision to change tenure choice by examining what factors influenced transition from homeowner to renter or from renter to homeowner. Data analysis shows that household secured debt, household wealth, and household income play a significant role in household’s change in tenure choice – owners becoming renters and renters becoming homeowners.

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## Introduction

A home is the single largest investment made by most American families, and the equity from that home constitutes the largest component of the family's wealth. Homeownership, an essential part of the "American Dream," has not only been a financial goal for many American families but is also central to U.S. federal housing policy. U.S. housing policy strongly supports an expansion of homeownership because the social and economic benefits of homeownership for both individuals and communities are well documented. Scholars have generated a rich body of research on factors that can affect access to homeownership, especially among low-income minority households. Studies have found that the decision to own or rent a home, commonly known as *tenure choice*, is driven by household income, wealth, life cycle events, socioeconomic status, demographic factors and household attitudes such as housing preferences and beliefs (Arnott, 1987; Clark, Deurloo, & Dieleman, 1994; Dieleman & Everaers, 1994; Fu, 2014; Lindblad, Han, Yu, & Rohe, 2017).

U.S. housing policy promoting homeownership opportunities has generated a rich body of research that focuses on factors that increase homeownership. Many studies focus on the impact of the financial capacity of a household to transition to homeownership, such as household income and wealth. More recent work, however, has given more attention to the impact of credit risks on homeownership (Di & Liu, 2007). In contrast to factors affecting access to homeownership, not much is known about what causes homeowners to transition from homeownership and become renters. Understanding what causes this transition from owning to renting is a particularly important and timely topic. The nation's homeownership rate has been continuously falling since 2004 when homeownership peaked at over 69 percent (Joint Center for Housing Studies of Harvard University, 2016). According to Census housing data, the U.S.

homeownership rate fell to the lowest level in over 50 years. This research intends to fill the gap in the literature by exploring factors that affect transitioning in housing tenure status and in particular, factors impacting a homeowner transitioning to a renter. This research also analyzes how these factors affect minority households differently compared to White households.

Among the factors affecting subsequent tenure choice, this study focuses on the impact of household debt and wealth on a household's decision to own or rent a home. While there are several empirical studies examining the role of student debt on the transition to homeownership, no studies have examined the role of household debt on the transition into and out of homeownership. Household debt balances continue their steady rise since 2013. According to the Quarterly Report on Household Debt and Credit by Federal Reserve Bank of New York (2017), aggregate household debt balances hit a new peak in the second quarter of 2017, \$12.84 trillion, which is \$164 billion higher than the peak at the start of the recession in 2008. The report's summary indicates the increase in total household debt is driven by mortgage, auto, and credit card debt. Non-housing debt constitutes 32 percent of total debt balances with student loan debt at 11 percent, auto loan debt at 9 percent, credit card debt at 6 percent, and other loan debt at 7 percent. Heavy indebtedness strongly influences housing tenure choice (Rothenberg, Galster, Butler, & Pitkin, 1991). As the debt ratio (monthly debt divided by monthly income) significantly influences individual's home buying purchasing power, it is important to examine the impact of total household debt on subsequent tenure choice.

Another contribution of this research to the existing literature is the use of longitudinal data. That is, this research uses data from the Survey of Income and Program Participation (SIPP), 2004 and 2008 panels to investigate the role of wealth and debt in households

transitioning into and out of homeownership. Specifically, this research addresses the following three questions:

- 1) What role does household wealth and debt play in the transitioning into and out of homeownership?
- 2) Do wealth and debt have similar effects on renters versus homeowners in their subsequent tenure choice?
- 3) Do wealth and debt have similar effects on Whites versus non-Whites in their subsequent tenure choice?

This paper begins with a representative review of the existing literature on those factors that influence a household's decision to own or rent a home, followed by a description of the data and analytical methods used to identify the effect of household debt and wealth on tenure choices. This paper's findings confirm that household debt and household wealth do play a significant role in household's change in tenure choice – owners becoming renters and renters becoming homeowners. While wealth significantly impacts tenure choice, the magnitude of the impact of overall wealth on tenure choice is not significantly different between White households and minority households. On the other hand, the magnitude of the impact of secured debt on tenure choice is only larger for Black and Other Race renters compared to White renters. The paper concludes with a discussion of the implications of these research findings.

## **What Factors Affect a Household's Decision to Own or Rent?**

### *Economic Factors on Tenure Choice*

A substantial proportion of the early economic research on tenure choice treated household income as the key determinant influencing housing tenure choice. More recent

studies, however, consider household assets and the associated user costs of housing, such as mortgage, taxes, or deductions as determinants of housing tenure choice.

### *The Effect of Wealth and Assets on Tenure Choice*

The economic research shows that the financial capacity of a household affects tenure choice as considerable savings or assets are needed for down payments, home buying transaction costs, home maintenance, insurance, and property tax burdens. Di and Liu (2007) examined how wealth and income influence the transition to homeownership changes over time. Their study found that while both household income and wealth are of significant importance to the transition to homeownership, wealth is a more important predictor of the transition to homeownership for minorities. A study by Linneman and Wachter (1989) examined the impacts of borrowing constraints on homeownership and reported similar findings. They found that while both income and wealth constraints reduce the likelihood of buying a home, wealth constraints have a stronger impact. Gyourko et al. (1999) analyzed the determinants of the large disparities in homeownership by race and found the same findings reported by Linneman and Wachter (1989). They found no *ceteris paribus* racial differences in ownership rates among White and minority households who possess sufficient wealth to meet down payment and closing cost requirements. However, they did find the existence of substantial racial disparities among wealth-constrained households, with Whites owning homes at higher rates than observationally equivalent minority households.

Boehm (1993), examining the likelihood of homeownership among young renters, found that both transitory and expected income have a direct effect on the likelihood of owning, but also an indirect effect, over time, through the impact on household savings. Jones (1995), using

household survey data from both the U.S. and Canada, found that tenure decisions are associated with not only income but also a households' liquefiable net wealth. Park et al. (2014), in their study estimating the likelihood of homeownership, concluded that housing affordability, defined as sufficient income and assets to purchase a moderately priced home, has a statistically significant effect on the likelihood of homeownership. Similarly, the Federal Reserve, in a report on the economic well-being of U.S. households in 2013, found that half of respondents, under age 30, reported that not being able to afford the down-payment for a home was the top reason for not owning a home (Board, 2014).

As the U.S. federal tax structure strongly favors homeownership over renting, research has shown that this tax advantage has been one of the key considerations that influence tenure choice (Boehm & McKenzie, 1982; Diamond, 1980; Rosen, 1979; Rosen & Rosen, 1980). Studies found that a lower tax burden, lower transaction costs, and a longer expected stay in a home increase the likelihood of owning a home (Haurin & Gill, 2002; Rosen & Rosen, 1980).

### *The Influence of Debt and Credit on Tenure Choice*

Recent research on economic factors that influence tenure choice has begun to focus more on the previously ignored effect of poor credit and debt, as a barrier to homeownership. Bostic et al (2004) describe how credit quality has changed over time for various segments of the population and finds that credit quality varies depending on one's tenure status. They found that, independent of how measured, credit quality improved between 1989 and 2001 for homeowners, but deteriorated significantly over the same period for renters. The authors conclude that poor credit quality has the effect of precluding entry into homeownership for renters. They found evidence that the removal of credit constraints would increase the homeownership rate by about

four percentage points. Barakova et al. (2003) measured credit quality based constraints in limiting access to homeownership by tracking the evolution of the relative importance of credit, income, and wealth-based constraints over time. They found that credit and wealth-based constraints significantly reduce the likelihood of whether individuals and households decide to own a home.

Extending the literature on the effect of credit and debt on tenure choice, in a report titled “Who Could Afford to Buy a Home in 2009,” Wilson and Callis (2013) used the Survey of Income and Program Participation (SIPP) to determine how many families could afford to buy a modestly priced home (based on sufficient income and assets to cover a five percent down payment as well as prescribed debt-to-income ratios). The authors found that in contrast to current homeowners, most renters could not afford to buy a home because of low incomes, scarce financial assets, or high amounts of debt relative to their income. Additionally, they found that 50 percent of families could afford to buy a modestly-price home in 2009, which is the lowest estimate since the beginning of SIPP data collection first began in 1984.

A substantial amount of post-recession research has been directed at the rising number of individuals with student loan debt and the profound impact it has on the consumption behavior of young adults, especially in relation to housing tenure choice (Cooper, 2014; Dillon, 2009; Houle, 2014; Larrimore, 2016; Reed, 2012). The National Association of Realtors (2014) points to a drop in first time homebuyers’ share of existing home purchases from 40 to 30 percent, and cites student loans as the primary factor holding back first-time buyers. A survey recently conducted by American Student Assistance® (ASA) found that those with student debt are delaying decisions to buy a home because of debt. In fact, 75 percent of responders indicated that student loan debt affected their decision or ability to purchase a home (American Student Assistance,

2015). Similarly, a survey conducted by Rutgers University found that 40 percent of college graduates directly correlated their delay in major purchases like a home to their student loan debt (Stone, 2012).

This finding is supported by several other studies that show that the constraint of student loan debt will affect or delay the ability to purchase a home (Andrew, 2010; Elliott, 2013; Misory, 2012; Ratcliffe, 2013; Reed, 2012). In spite of the rising student debt, younger households have been at the forefront of reducing overall household debt in the last decade. A basic reason for this is that since 2004, younger families have not been buying homes. The only young households that have experienced a decrease in their debt-to-income ratio since 2007 are those without student loan debt (Pew Research Center, 2011). Mezza et al. (2016), in their study on the effect of student loans and homeownership, find that a 10 percent increase in student loan debt causes a 1 to 2 percentage point drop in the homeownership rate for student loan borrowers during the first five years after exiting school.

### *Non-Economic Factors That Influence Tenure Choice*

In addition to economic factors, decisions by households to own or rent a home are driven by demographic factors and life cycle events (Clark et al., 1994; Dieleman & Everaers, 1994; Fu, 2014). Research has shown that age, sex, and race and ethnicity are associated with tenure choice. The likelihood of owning a home increases with the age of the householder (Hood; Segal & Sullivan, 1998). Scholars argue that sex plays a role in the decision to own or rent because the financial resources of men play a larger role in attaining homeownership than do the financial resources of women (Marjolein, 2010; Mulder & Hooimeijer, 1995; Mulder & Smits, 1999).



In regard to race, the homeownership rate for Whites has long been higher than for Blacks and Hispanics. Numerous studies show that the likelihood of homeownership among Blacks and Hispanics is lower than that for Whites even after controlling for other demographic factors (Charles & Hurst, 2002; Flippen, 2001; Hilber, 2008; Kain & Quigley, 1972; Krivo & Kaufman, 2004; Krivo, 1986; Long & Caudill, 1992). Flippen (2001) found that Blacks and Hispanics continue to lag significantly behind Whites in housing wealth even after accounting for numerous life-cycle, resource, and socioeconomic considerations. Flippen (2001) argues that while Hispanics initially appear better off than Blacks with respect to housing, this is largely a function of them more likely being in a married couple household with potentially two earners. Krivo and Kaufman's (2004) study provided the same findings: substantial and significant gaps in housing equity for Blacks and Hispanics (but not for Asians) exist compared with Whites, even after controlling for a wide range of locational, life-cycle, socioeconomic, family, immigration status, and mortgage characteristics.

Scholars also suggest that discrimination in the housing and mortgage markets, poor credit, and a lack of information about the home buying process partly explain the gap in homeownership rates (Haurin & Morrow-Jones, 2006; Haurin, Herbert, & Rosenthal, 2007; Krivo, 1986; Charles and Hurst, 2002). Charles and Hurst (2002) analyzed the differences in the likelihood of Black and White renters becoming homeowners over time and found strong evidence that Black applicants are almost twice as likely as White applicants to have a mortgage application rejected, even when credit history proxies and measures of household wealth are accounted for. They state that the housing transition gap exists primarily because Black renters are less likely to apply for mortgages in the first place. Their analysis suggests that differences in

income, family structure, and in the ability and willingness of parents to provide down-payment assistance are the primary reasons for this application gap.

Scholars have found that lifecycle events such as marriage and parenthood are positively associated with homeownership (Clark & Dieleman, 1996; Clark, Deurloo, & Dieleman, 1994; Deurloo, Clark, & Dieleman, 1994; Kendig, 1984; Mulder & Wagner, 1998; Smits & Mulder, 2008). The research suggests that family formation leads to homeownership because people believe that owner-occupied homes are more suitable for families and perceive expenses as more manageable due to the ability of couples to pool resources (Mulder & Wagner, 1998).

#### *Impact of Foreclosure Crisis and Recession on Tenure Choice*

The recent home mortgage crisis and resulting recession caused many scholars to wonder if attitudes toward homeownership shifted as a result. A nationwide survey by Pew Research Center in 2011 shows that the collapse in home values may have diminished the desire to own a home for some, especially among Millennials – defined as those born after 1980 (Pew Research Center, 2011). Bracha and Jamison (2011) explored whether exposure to the housing market crash affected attitudes regarding the financial benefits of renting versus owning, and found the effects may vary by location and age: survey participants who lived in an area of considerable housing price decline – as compared to those in relatively stable housing market areas – were more likely to be confident about owning a home if they were 58 years old or older, but less likely to be confident if they were younger.

However, other research finds a robust and continued interest in homeownership, even among Millennials. In an examination of 400 renters in the San Francisco Bay Area with incomes lower than \$75,000 in 2008, Collins and Choi (2010) found that changes in

neighborhood housing values and foreclosure rates were not associated with renters' self-reported likelihood of buying a home or to their assessment of the risks and benefits of home ownership. Using Fannie Mae's National Housing Survey data collected in 2010 and 2011, a study by Drew and Herbert (2012) found that exposure to the crisis didn't influence tenure choice, except for those with an underwater mortgage. They found that tenure preferences were unrelated to the foreclosure crisis, recent housing price declines or knowing people who defaulted on their mortgages. Rohe and Lindblad (2013) conclude from their review of the literature on the impact of foreclosure crisis on tenure choice that "the impact of the foreclosure crisis on attitudes toward owning seems to have been short lived" (p. 132).

## **Data and Methods**

### *Data*

To investigate how factors such as household debt, wealth, income, and selected demographic characteristics of the householder explain the likelihood of households transitioning into and out of home ownership, this paper used longitudinal data from the Survey of Income and Program Participation (SIPP), 2004 and 2008 panels.<sup>1, 2</sup> These monthly data provide the means to look at the transition into and out of home ownership from both a cross-sectional and longitudinal perspective. The data on housing tenure are from the "core" components of the SIPP 2004 and 2008 panels, and the data on household debt and wealth were drawn from the asset and liabilities topical modules conducted in waves 3 and 6 in the 2004 panel and waves 4, 7 and 10

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<sup>1</sup> All comparative statements in this report have undergone statistical testing and, unless otherwise noted, all comparisons are statistically significant at the 10 percent significance level. Any implied comparison statements that are not significant are noted, accordingly.

<sup>2</sup> The source and accuracy statement regarding the 2004 and 2008 SIPP panels can be found at: <https://www.census.gov/programs-surveys/sipp/tech-documentation/source-accuracy-statements.html>

of the 2008 panel.<sup>3</sup> In regards to the technical details of the survey, with few exceptions, original sample members were interviewed every 4 months over the duration of the panel, which covered at least a four-year period for both the 2004 and 2008 panels. The SIPP is a true longitudinal survey that tracks households, families, and people over time and employs a complex, two-stage sample design rather than a simple random sample. The SIPP interviews household members, age 15 and older, regarding their monthly demographic and economic characteristics, with special attention given to collecting monthly data on income sources and amounts, program participation and eligibility, and paid labor force experience.<sup>4</sup> In addition, each wave of the survey conducted a supplement survey that addressed a specific topic area.<sup>5</sup> The assets and liabilities topical module collected data on the prior year annual amounts of household assets and liabilities. For the 2004 panel, household assets and liabilities data corresponded to calendar years 2004 and 2005; and for the 2008 panel, household assets and liabilities corresponded to amounts reported for calendar years 2009, 2010 and 2011.

### *Measures*

The determination whether a household transitioned into or out of home ownership was assessed from responses to a question regarding the monthly tenure status of individuals that

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<sup>3</sup> The 2004 panel, started in the first quarter of 2004 and completed data collections in the last quarter of 2007, resulting in 12 waves of monthly data. Similarly, the 2008 panel started in the third quarter of 2008 and completed data collection in the fourth quarter of 2013, resulting in 16 waves of monthly data but only four complete years (2009-12) of monthly data.

<sup>4</sup> For information on the SIPP sample design and other technical issues, visit [www.census.gov/sipp](http://www.census.gov/sipp).

<sup>5</sup> A complete list of the topical modules available in the 2004 and 2008 SIPP panels can be found at: <https://www.census.gov/programs-surveys/sipp/tech-documentation/topical-modules.html>.

identified as the householder of the household.<sup>6</sup> By tracking responses, over 48 months in both the 2004 and 2008 panels, it was possible to categorize the household into one of four groups: (1) the householder indicated their housing tenure as a homeowner in the first month of the four-year period and maintained that status until the end of the four-year period; (2) the householder indicated they were a homeowner in the first month of the four-year period but changed their housing tenure status to a renter at some later month and maintained that status until the end of the four-year period; (3) the householder indicated their housing status as a renter in the first month of the four-year period and maintained that status until the end of the four-year period; and (4) the householder indicated their housing tenure as a renter in the first month of the four-year period but changed their status to a homeowner at some later month and maintained that status until the end of the four-year period. Groups 2 and 4 identify those households that this research focused on, while groups 1 and 3 served as the benchmark for comparing households that changed in their housing tenure status.

**[Table 1 About Here]**

In total, the dataset used for this analysis consists of 101.0 million (weighted) households in the 2004 panel and 108.6 million (weighted) households in the 2008 panel (see Table 1). Between 2004 and 2007, approximately 5.0 million households transitioned from initially being a homeowner to a renter, 6.3 million households transitioned from being a renter to a homeowner, 68.4 million households remained homeowners, and 21.2 million remained renters. For the SIPP 2008 panel, between 2009 and 2012, 5.6 million householders changed from initially being a homeowner to a renter, approximately 6.0 million householders changed from

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<sup>6</sup> Householder refers to the person in whose name the home is owned and/or rented. If a married couple owns the home jointly, either the husband or the wife may be listed as the householder. Since only one person in each household is designated as the householder, the number of householders reflect the number of households.

being a renter to a homeowner, 71.4 million householders remaining homeowners, and 25.5 million householders remaining renters.

Wealth is defined as the sum of the market value of assets owned by every member of the household minus liabilities owed. Assets include the value of a household's home, retirement accounts, stocks, mutual fund shares and interest earning assets, which includes interest-earning checking and savings accounts. Liabilities include mortgages, credit card debt, student loan debt, and medical debt not covered by insurance. Total household debt is separated into secured debt and unsecured debt. Secured debt is debt backed by collateral. Components of secured debt include: mortgages and home equity loans; debt against vehicles; debt against rental property; and debt against businesses. Unsecured debt is debt that is not backed by collateral and consists of: amount owed for store bills or credit cards; amount of money owed for loans obtained through a bank or credit union (other than car loans or home equity loans); and other debt, such as medical bills not covered by insurance, student loans, money owed to private individuals, and any other debt not covered. Secured debt is surmised to be associated with good credit, which is linked with access to financing and a home purchase while unsecured debt is linked with credit not backed by collateral (such as credit card debt) and should have a weaker or inverse association with financing a home purchase.

### *Analytical Methodology*

This research answers the following questions: How does household wealth and debt play a role in the transition into and out of home ownership? Do wealth and debt have similar effects on renters vs. homeowners in subsequent tenure choices? Do wealth and debt have similar effects on Whites vs. non-Whites in subsequent tenure choices? To answer these questions, two

logistic regression models were used that focused on a change in housing status as the (binary) outcome/ dependent variable. In addition to key variables of interest – wealth and debt – a set of demographic control variables for the householder were used. Model 1, the baseline model, consisted of set demographic controls included sex, age, race and ethnicity, highest level of educational attainment, the marital status, and nativity<sup>7</sup> of the household as well as household specific variables such as prior annual household income and the number of children ages 18 or younger in the household.

Model 1:

$$\text{Prob(transition in housing tenure)} = F \left[ \beta_0 + \sum_{i=1}^3 (\beta_i \text{ age}_i) + \beta_4 (\text{nativity}) + \beta_5 (\text{sex}) + \sum_{j=6}^9 \sum_{k=1}^4 \beta_j (\text{race}_k) + \beta_{10} \text{ 2008 Panel} + \sum_{l=11}^{13} \sum_{m=1}^1 \beta_l (\text{education}_m) + \beta_{14} \text{ marital status} + \beta_{15} \# \text{ own children under 18} + \beta_{16} \text{ Ln annual household income} + \text{residual} \right]$$

Model 2 contained all the variables involved in model 1, plus a set of variables measuring the impact of household wealth and debt and interaction variables between debt and race and ethnicity. In other words, interactions were used in this research to investigate whether debt might moderate the effects of race on subsequent tenure choice.

Model 2:

$$\text{Prob(transition in housing tenure)} = F[ \text{components of Model 1} + \beta_{17} (\text{ln annual average household secured debt}) + \beta_{18} (\text{ln average annual household unsecured debt}) + \beta_{18} (\text{ln average} ]$$

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<sup>7</sup> We defined someone's nativity (immigrant status) based upon their responses to the follow variables:  
IMMIGRANT = 1, IF ECITZNT=2 OR (ECITIZNT=1 AND ENTATCITT = 1,2,3) , ELSE IMMIGRANT=0.

Where,

ECITIZNT: Is ... a citizen of the United States? 1: Yes, 2: No

ENTATCITT: How is ... a U.S. citizen? 1: Naturalized, 2: Through your or your spouse's military service in the U.S., 3: Adopted by U.S. citizen parents, 4: Born in the U.S. Island Areas or born in the United States, 5: Born abroad of U.S. citizen parent or parents.

$$\text{annual household wealth}) + \sum_{n=9}^{22} \sum_{p=1}^4 \beta_n(\text{race}_p * (\ln \text{ average annual household secured debt}) + \sum_{q=23}^{26} \beta_q(\text{race}_r * (\ln \text{ annual average household unsecured debt}) + \text{residual} ]$$

For models 1 and 2, “F” represents the cumulative logistic distribution function, “Pr(transition in housing tenure)” represents the probability of a household transitioning to another housing tenure status over the timeframe of interest, the respective explanatory variables are as previously discussed and “ln” represents the natural logarithmic transformation of the reported amount.

## Descriptive Statistics

### *Demographic and Financial Characteristics of Households*

In the 2004 panel, there were approximately 101.0 million households of which 73.4 million households were homeowners (see Table 1, Groups 1 and 2). Of the 73.4 million households that started out as homeowners in the panel, 6.8 percent transitioned to renters. By comparison, in the 2008 panel, there were approximately 108.6 million households of which 77.0 million households were homeowners (see Table 1, Groups 1 and 2); of these homeowner households, 7.3 percent transitioned to renters.<sup>8</sup>

Between the two panels, there was a decline in the number of households that transitioned between renter status and home ownership. There were 27.5 million households (see Table 1, Groups 3 and 4) who lived as renters over the SIPP 2004 panel compared to 31.5 million households who were renters in the SIPP 2008 panel (see Table 1, Groups 3 and 4). In

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<sup>8</sup> In the 2004 panel, 6.3 percent that transitioned to renter is: Group 2/(Group 1 + Group 2). For the 2008 panel, the 7.3 percent that transitioned to renter is: Group 2/(Group 1 + Group 2).



the 2004 panel 23.1 percent of renter households transitioned to homeowners while in the 2008 panel, 19.0 percent of renter households transitioned to homeowners.<sup>9</sup>

**[Table 2 About Here]**

**[Table 3 About Here]**

For both panels, householders that transition to renter status were more likely to be female, age 44 or younger, were less likely to have a college degree and had a substantially lower household income compared to householders that remained in homeowner status (see Tables 2 and 3).<sup>10,11</sup> By comparison, householders that transition from being a renter to a homeowner were more likely to be male, aged 44 or younger, White, native born, have a college degree or higher and had substantially higher household incomes than householders that remained renters.

From both SIPP panels the data suggests that a transition in housing tenure status is concentrated among the younger age cohort of householders.<sup>12</sup> Approximately 74.0 percent of householders in the 2004 panel and 69.0 percent of households in the 2008 panel that transition from renter to homeowner were less than 45 years old. Similarly, about half of those householders that transitioned from homeowner to renter were less than 45 years old in both panels. In both SIPP panels, close to three-fourths of householders that transitioned from

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<sup>9</sup> In the 2004 panel, 23.1 percent that transitioned to renter is:  $\text{Group 4}/(\text{Group 3} + \text{Group 4})$ . For the 2008 panel, the 19.0 percent that transitioned to renter is:  $\text{Group 4}/(\text{Group 3} + \text{Group 4})$ .

<sup>10</sup> For the 2004 SIPP panel, in 2007 the difference, on average, in annual income for households that transition from being homeowners to renters was \$16,380. Similarly, for the 2008 SIPP panel the difference, on average, in annual income for households that transition from being homeowners to renters was \$17,519.

<sup>11</sup> For 2005, native born status is not statistically different. For the 2008 panel, having the characteristics of female and native born status are not statistically different.

<sup>12</sup> In both the 2004 and 2008 SIPP panels the age of the reference person is measured as a continuous variable. For purposes of analysis, it was decided to create age grouping in order to see how age cohorts transition in their housing tenure status.

homeowner to renter and close to two-thirds of householders that transitioned from renter to homeowner are White, non-Hispanic.

In both SIPP panels, marital status consists of six mutually exclusive categories (married, spouse present; married, spouse absent; separated; divorced; widowed; and never married) but for purposes of this analysis they were collapsed into two (married and not married) based upon status at the beginning of the panel. In both panels, with respect to marital status, an equal proportion of householders transitioned from being homeowner to renter. For householders that transitioned from renter to homeowner, a larger proportion were observed not to be married compared to married at the beginning of both panels.<sup>13</sup>

For both SIPP panels, a change in housing tenure status was associated with a higher level of educational attainment. From the 2004 panel, 72.9 percent of householders that transition from a renter to an owner had a level of education beyond a high school degree. Similarly, from the 2008 panel, 71.7 percent of householders that transitioned from a renter to an owner had a level of education beyond a high school degree.<sup>14</sup>

#### *Financial Characteristics: Debt, Wealth and Income*

The most notable difference between households that changed housing status and those that did not is their financial characteristics. From both panels, homeowners that did not transition to renters had significantly greater wealth than all other groups. From the 2004 SIPP

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<sup>13</sup> See Tables 2 and 3. At the start of 2004 SIPP panel, 58.3 percent of householders reported being not married and 41.7 percent reported being married. Similarly, at the start of the 2008 SIPP panel, 58.7 percent of householders reported not being married and 41.4 percent reported being married. Percent total exceed 100 percent due to rounding.

<sup>14</sup> See Tables 2 and 3. At the start of the 2004 panel 64.2 percent householders that transitioned from an owner to a renter had more than a high school degree while 66.7 percent of householders that remained owners had more than a high school degree. By comparison, at the start of the 2008 SIPP panel, 73.0 percent of householder that transitioned from an owner to a renter had more than a high school degree, while 54.2 percent of householders that remained owners had more than a high school degree.

panel, for household that transition from homeowner to a renter, on average, wealth is about half that of homeowners that remained homeowners by the end of the panel. Over the same period, renters that transitioned to homeowners had, on average, higher wealth than renters that did not transition to homeowners.<sup>15</sup> In the 2008 SIPP panel, households that transitioned from homeowner to renter were just under \$200,000, lower than the average wealth (just under \$473,000) of homeowners that remained homeowners.<sup>16</sup> Similar to the 2004 SIPP panel, renters who transitioned to homeowners in the 2008 panel had higher average wealth (under \$109,000) compared to renters that did not transition (about \$45,000).

In regards to income, similar trends were observed across both panels. Homeowners that remained homeowners or the renters that transitioned to homeowners had a significantly larger household income than the homeowners that transitioned to renters or renters that remained renters by the end of the panel. The levels of both secured and unsecured debt between homeowners who remained homeowners and homeowners that transitioned to renters were more similar compared to renters who remained renters and renters who transitioned to homeowners. As well, the renters that transitioned to homeowners had, on average, a higher amount of debt – whether secured or unsecured – than the renters that remained renters.

## **Effect of Household Debt and Wealth on Subsequent Tenure Choice**

### *Transition from owning to renting*

[Table 4 About Here]

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<sup>15</sup> While on average the absolute numbers appear to be different, the values are not statistically different.

<sup>16</sup> This finding clearly captures the wealth effect of homeownership as related to value of home equity.

Table 4 presents the results from modeling the likelihood of transitioning from a homeowner to a renter, relative to staying a homeowner at any time over the duration of both panel periods. The likelihood of transitioning from renter to owner, relative to staying a renter is shown in Table 5. Model 1 in Table 4 estimates the impact of the demographic variables including household income on tenure choice. Model 2 estimates the impact of key variables of interest – wealth and debt – while controlling for the demographic characteristics and household income. Model 2 suggests that higher-levels of educational attainment (college or post-graduate education) becomes significant when wealth and debt variables are included (See Table 4). Model 2 also tests the idea of an association between debt and race and ethnicity by including the interaction terms to capture this effect. In this case, no consistent significant effect was found when including this interaction. The log likelihood ratio test for both models is statistically significant for the set of variables used in discussing the likelihood of transitioning in housing tenure status, although the higher ratio for Model 2 indicates it is a slightly improved model.

Examining the impact of demographic variables on the likelihood of transitioning from owner to renter (in both models) reveals that the age of the householder is a strong predictor for tenure change (see Table 4). The younger the homeowner, the more likely that they would transition to renters. For example, homeowners aged 34 or younger are 3.5 times likely to transition to renters, compared to homeowners aged 55 or older. Homeowners between 35 and 44 years old are about twice as likely to transition to renters, compared to homeowners aged 55 or older. In Model 2, Race, sex, and number of children under 18 years old were not significantly associated with the likelihood of transitioning from owning to renting. On the other hand, being married significantly decreases the odds of a homeowner transitioning to renting. When the wealth and debt variables are controlled for, the odds of a married homeowner transitioning to

renting is 35 percent lower than the odds of that of an unmarried homeowner.<sup>17</sup> The level of educational attainment was a strong predictor when wealth and debt are controlled for (see Model 2). For homeowners, having a college degree increases the odds of transitioning to a renter. For example, having a college degree increases the odds of a homeowner transitioning to a renter by 31 percent, and having a post-graduate degree increases the odds of a homeowner transitioning to renter by 53 percent. This finding is similar with the results found in studies looking at impact of student loan debt and home ownership, which consistently associate student loan debt with delayed home ownership. Married householders are more likely to remain homeowners. This is consistent with the theory that life cycle events such as marriage are positively associated with home ownership, arguing that owner-occupied homes are perceived as more suitable for families, and that couples have the ability to pool resources.

Income has been known as the key determinant of tenure choice and the data shows that annual average household income is strongly associated with tenure choice in the following year. In both models, higher income is associated with a lower likelihood of homeowners transitioning to renters, all else being equal. Model 2 specifically examines the impact of wealth and debt on subsequent tenure choice. It shows that increases in household wealth and secured debt strongly decrease the likelihood of homeowners transitioning to renters while increases in unsecured debt increase the likelihood of transitioning to renters. Debt is not consistently associated with the race and ethnicity of the householder. This research finds that although income, wealth, secured debt, and unsecured debt strongly influence the homeowners' subsequent tenure choice the

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<sup>17</sup> In both SIPP panels, marital status consists of six mutually exclusive categories: married, spouse present; married, spouse absent; separated; divorced; and never married. For purposes of this analysis, the six categories were collapsed into two groups, married and not married.

following year, the magnitude of the impact of all these variables are similar between White homeowners and minority homeowners.

*Transition from renting to owning*

[Table 5 About Here]

Table 5 presents the logistic regression results that estimate the impact of wealth and debt on renter's subsequent tenure choice. Specifically, the coefficient estimates associated with the likelihood of transitioning from a renter to a homeowner, relative to staying a renter at any time over the duration of both panel periods. Model 1 estimates the impact of the householder's demographic variables and income while Model 2 estimates the impact of key variables of interest – wealth and debt – and interaction effects. The biggest difference between the models is that nativity and level of educational attainment become non-significant when wealth and debt are considered; in Model 1 both these factors significantly influenced the likelihood of renters transitioning to homeowners but in Model 2 they found to be not associated with tenure change. The log likelihood ratio test for the models indicate both are very good although, like Table 4, a slightly higher ratio for Model 2 suggests an improved degree of explanatory power.

The age of the householder is again a strong predictor for the likelihood of transitioning from renting to owning with younger renters being more likely to become homeowners (see Table 5). For example, renters under 35 are 2.25 times as likely to transition to homeowners, compared to renters age 55 and older. Renters between 35 and 44 years old are almost twice as likely to transition to homeowners, compared to renters over 55 years old. The base model found that foreign-born status translates to a 30 percent lower odds than native-born status of renters

transitioning to homeowners. However, when wealth and debt variables are controlled for in Model 2, immigration status became non-significant.

While race was not found to be a significant factor influencing the likelihood of a homeowner transitioning to a renter, it was a significant factor for renters transitioning to a homeowners. In both models, minority renters were significantly less likely to become homeowners compared to White renters. For example, in Model 2, compared to White renters, when wealth and debt variables are controlled for, the odds of transitioning to homeowners is 55 percent lower for Black renters, 70 percent lower for Hispanic renters, and 86 percent lower for Asian renters. Marriage once again influences tenure choice; married renters have a 20 percent higher odds of transitioning to homeowners compared to not married renters, all else being equal. Surprisingly, the number of children under age 18 years did not influence the likelihood of renters becoming homeowners.

As shown in Model 1, higher levels of educational attainment significantly increased the likelihood of renters transitioning to homeowners. For example, for renters, a college degree increases the odds of transitioning to homeowners by 57 percent. A post-graduate degree increases the odds by roughly 52 percent. However, when wealth and debt variables are controlled for, level of educational attainment becomes non-significant, as shown in Model 2.

Examining the impact of financial characteristics on the likelihood of renters transitioning to homeowners, annual average household income continues to be a significant factor. In both models, higher income is associated with a higher likelihood of renters transitioning to homeowners, all else being equal. However, the magnitude of the impact of household income on subsequent tenure choice becomes much smaller when household debt and

wealth are included in the model.<sup>18</sup> Model 2 specifically examines the impact of wealth and debt on subsequent tenure choice. Increases in household wealth and secured debt significantly increase the odds of renters transitioning to homeowners. By comparison, increases in household unsecured debt decrease the odds of renters transitioning to homeowners. Unsecured debt is believed to be associated with poor credit. Therefore, an increase in household unsecured debt may be linked to a weaker or inverse association with financing and home purchase.

In order to investigate debt by the race and ethnicity of the householder interaction terms were constructed.<sup>19</sup> The increase in household secured debt increases the likelihood of renters transitioning to homeowners. However, the magnitude of the impact of secured debt on tenure choice is only significant for Black and Other Race groups. Relative to White renters, the impact of an increase in secured debt on the likelihood of transitioning to home ownership is 63 percent more likely for Black renters, and more than 9 times more likely for Other Race renters. The impact of unsecured debt for renters to move to home ownership is higher for Hispanic renters when compared to White renters at 76 percent more likely.

## Discussion

Results from this paper provide evidence that wealth and debt impacts the likelihood of household transition in housing tenure status. After accounting for individual differences in sociodemographic characteristics in housing tenure status, housing tenure is most impacted by

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<sup>18</sup> Constructing a 90 percent confidence interval (CI) for the coefficient estimates of the lagged value of the natural logarithm of household income in model 1 and 2 (Table 5) the respective intervals do not overlap indicating the coefficients are statistically different. For model 1, the estimated coefficient of 0.57 has a 90 percent CI of [0.491-0.649] and model 2, the estimated coefficient of 0.164 has a 90 percent CI of [0.094-0.2351].

<sup>19</sup> Interaction terms with wealth and race and ethnicity were initially included in the model because the level of wealth significantly influences the renter's decision to own a home. However, the interaction terms were found to not be significant and the magnitude of the influence of wealth is not different among races, so they were removed from the model.



the direct positive effect of wealth, income and secured debt on renter to homeowner transition, and the direct positive effect of wealth, income and secured debt as a preventative to homeowner to renter transition. As well, there exist a small direct effect of unsecured debt in the prevention of renter to homeowner transition and the escalation of homeowner to renter transition is evident.

Using the 2004 and 2008 SIPP panels, this paper investigated the relationship between wealth and debt in a household's likelihood of transitioning in housing tenure status as well as whether these factors similarly impact non-White households in their housing tenure choice relative to White households. Our effort was driven by the public's continuing view towards home ownership, which is still viewed as an essential part of the 'American Dream.' Exploring the issue of transitions in housing tenure status was also timely given that the nation's home ownership rate continues to fall despite the public's continued interest in home ownership and the federal government's policies and programs promoting it.

As discussed earlier, prior research has focused on those factors that result in an increase in home ownership rates focusing on such factors as income, wealth, credit risk and student debt. However, limited information is known about the role that secured and unsecured household debt play in the transitioning in housing tenure status. To more fully understand the impact of household debt having it separated into secured debt, which can be viewed as "good credit" that facilitates access to financing a home purchase, and unsecured debt, which can be viewed as "bad credit" that limits or even hinders access to traditional financing methods for purchasing a home, provided useful insights in our analysis.

As one might expect, financial characteristics played the most important role in a household's transition in housing tenure status. Increases in household wealth (similar to household income) strongly decrease the likelihood of homeowners transitioning to renters and

increased the likelihood of renters transitioning to homeowners. The magnitude of the impact of wealth on subsequent tenure change is similar to that of income. The impact of secured debt on tenure change is the same as that of household wealth or income; increases in secured debt decreases the odds of homeowners transitioning to renters and increases the odds of renters transitioning to homeowners. These findings suggest the complexities involved in the decision of a household to change their housing tenure status. The combination of income, wealth and secured debt play important roles in either a household's ability to move into home ownership or out of home ownership.

Between 2004 and 2007 (2004 SIPP panel) it was found that 23.1 percent of renting households transitioned into home ownership status. By comparison, between 2009 and 2012, (2008 SIPP panel) 19.0 percent of renting households transitioned into home ownership status (see Table 1).<sup>20</sup> In both the timeframes, householders from households that transitioned from being a renter to a homeowner were, on average, White, non-Hispanic with a college degree and a household income substantially higher than households that remained as renters. In addition, the age of the householder also mattered in a household's transition into home ownership with approximately 70 percent of renting householders who transitioned into home ownership were more likely to be under 45 years old.

Between 2004 and 2007, approximately 6.8 percent of homeowner households transitioned to a renter status. Similarly, between 2009 and 2012, 7.3 percent of households experienced the same transition.<sup>21</sup> In both time periods, on average, householders from

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<sup>20</sup> The percent of renting households that transition to a homeowner between 2009 and 2012 is significantly different from the percentage of households that transition between 2004 and 2007.

<sup>21</sup> These estimates were not statistically different from each other and suggest that the characteristic of downward mobility, as defined as transitioning from homeownership to renting, remained similar before and after the great recession.

households that transitioned were, on average, female, under 45 years of age, without a college degree and earning an income substantially lower than homeowner householders. Turning to the relationship between householder characteristics and a transition in housing tenure status, on average, householders that are older, married, with greater income, wealth, secure debt and less unsecured debt are more likely to remain homeowners. By comparison, on average, householders that experienced a transition from being a renter to a homeowner were younger, married with more income, wealth, secure debt and less unsecured debt than householders that remained renters.

In addition, this research also investigated the interaction of race and ethnicity with debt in predicting the likelihood of a transition in housing tenure status. The results indicated that secured debt and race are a significant predictor for Black and Other Race in the likelihood that renters transition to homeowners. That is, the magnitude of the impact of secured debt on a change in tenure status was larger for Black and Other Race renters relative to White renters suggesting these non-White's household's ability to demonstrate credit worthiness or an extensive credit history is directly correlated to their ability to transition from the status of renter to homeowner. In contrast, White households may have a lesser need to demonstrate credit worthiness to transition into home ownership than these non-White counterparts. In addition, the results also found that an increase in household unsecured debt significantly raises the odds of Hispanic and Other Race renters transitioning to home ownership compared to White renters. These findings suggest that when considering race and ethnicity, both the existence and amount of household debt varies by race and ethnicity as predictor in the likelihood of experiencing a transition in their tenure status from a renter to a homeowner.

As such, these findings highlight the need to understand the complexity of race and debt on non-White household transition. The varying effect of secured debt for Blacks on household transition illustrates a vulnerability in their transition from renter to homeowner status. The efficacy of secured debt, as a proxy for credit risk, is a key determinant in whether or not a non-White household can successfully transition from renter to homeowner status. Future economic prospects for Black and Other Race groups will largely depend on their ability to demonstrate credit worthiness, in addition to increasing key factors like income and wealth. The findings that increasing educational attainment increases the likelihood of household transition from homeowner to renter status. Thus, further research is needed to understand this observed effect of seemingly greater mobility for individuals with advanced education. As well, what impact does student debt as unsecured debt have on household transition? This research suggests that characteristics associated with student status including student debt, mobility, and occupational status will be key determinants to better understand household transition.

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Table 1: Household Housing Tenure Status from the 2004 and 2008 SIPP Panels

	Total		Group 1: Homeowners that did not transition		Group 2: Homeowners that transition to renters		Group 3: Renters that did not transition		Group 4: Renters that transition to homeowners	
<b><u>2004 Panel (2004-2007)</u></b>	<u>Estimate</u>	<u>M.o.E./1</u>	<u>Estimate</u>	<u>M.o.E./1</u>	<u>Estimate</u>	<u>M.o.E./1</u>	<u>Estimate</u>	<u>M.o.E./1</u>	<u>Estimate</u>	<u>M.o.E./1</u>
Number of households (000s)	100,888	569	68,386	802	4,979	382	21,174	704	6,349	453
Percent of total	100.0	--	67.8	0.75	4.9	0.38	21.0	0.67	6.3	0.45
<b><u>2008 Panel (2009-2012)</u></b>										
Number of households (000s)	108,595	424	71,442	778	5,648	382	25,529	617	5,976	472
Percent of total	100.0	--	65.8	0.68	5.2	0.35	23.2	0.56	5.5	0.43
<b><u>Combined total:</u></b>										
Total (000s)	209,484	698	139,828	1,047	10,627	506	46,703	953	12,326	596
Percent of total	100.0	--	66.7	0.47	5.07	0.24	22.3	0.44	5.9	0.28
1./ The M.o.E. (Margin of Error) can be subtracted from and added to the point estimate to get the 90 percent confidence interval around the estimate.										
Source: U.S. Census Bureau, Survey of Income and Program Participation (SIPP), 2004 and 2008 Panels. For information on sampling and										
and nonsampling error, see <a href="https://www.census.gov/programs-surveys/sipp/methodology/sampling.html">https://www.census.gov/programs-surveys/sipp/methodology/sampling.html</a>										

Table 2: Selected financial and demographic characteristics of householders by their housing tenure status over the duration of the SIPP 2004 panel								
SIPP 2004 Panel, covering calendar years 2004-2007								
	Group 1: Homeowners that did not transition		Group 2: Home owners that transitioned to renters		Group 3: Renters that did not transition		Group 4: Renters that transition to home owners	
	Estimate / Percent	M.o.E. / 1	Estimate / Percent	M.o.E. / 1	Estimate / Percent	M.o.E. / 1	Estimate / Percent	M.o.E. / 1
Total (000s)	68,386	802	4,979	382	21,174	704	6,349	453,389
<b>Average total household amounts (in 2012 dollars)</b>								
<i>income -- 2004</i>	\$82,211	\$1,813	\$60,952	\$3,376	\$36,862	\$1,239	\$60,667	\$2,788
<i>income -- 2007</i>	\$82,547	\$2,081	\$66,167	\$5,738	\$40,513	\$1,925	\$75,495	\$4,133
<b>Lagged average total household amounts (in 2012 dollars)</b>								
<i>Secured debt</i>	\$95,889	\$3,973	\$71,929	\$9,135	\$5,123	\$2,203	\$89,415	\$11,499
<i>Unsecured debt</i>	\$9,625	\$612	\$9,641	\$1,990	\$5,832	\$649	\$14,529	\$2,970
<i>Wealth</i>	\$473,539	\$47,484	\$246,626	\$44,223	\$166,994	\$148,381	\$222,827	\$81,148
<i>Household income</i>	\$82,211	\$1,813	\$62,613	\$3,620	\$36,862	\$1,238	\$62,871	\$2,975
<b>Gender (Percent)</b>								
<i>Male</i>	47.6	0.34	40.0	4.36	44.2	1.21	54.6	3.71
<i>Female</i>	52.4	0.34	60.0	4.36	55.8	1.21	45.4	3.71
<b>Age (Percent)</b>								
<i>25-34</i>	12.4	0.57	25.1	3.38	26.3	1.75	44.8	3.53
<i>35-44</i>	22.2	0.65	26.7	3.38	24.7	1.85	29.1	3.17
<i>45-54</i>	24.4	0.63	17.5	3.02	19.5	1.53	14.6	2.61
<i>55-64</i>	18.9	0.52	12.6	2.85	12.7	1.26	7.0	1.82
<i>65+</i>	22.1	0.53	18.1	2.77	16.8	1.43	4.5	1.40
<b>Race (non-Hispanic) (Percent)</b>								
<i>White</i>	79.3	0.65	74.8	3.65	54.1	1.68	64.9	3.72
<i>Black</i>	8.3	0.42	12.8	2.76	22.7	1.67	14.0	3.01
<i>Asian</i>	2.3	0.27	1.5	0.86	3.8	0.70	5.3	1.62
<i>Other race</i>	2.3	0.32	2.5	1.16	3.4	0.70	2.3	1.07
<i>Hispanic</i>	7.8	0.46	8.4	2.32	16.0	1.13	13.6	2.73
<b>Marital status (Percent)</b>								
<i>Married</i>	65.9	0.73	50.7	3.98	26.5	1.66	41.7	3.79
<i>Not married</i>	34.1	0.73	49.3	3.98	73.5	1.66	58.3	3.79
<b>Nativity (Percent)</b>								
<i>Native-born /2</i>	89.3	0.61	93.1	7.40	76.8	1.73	86.0	7.00
<i>Foreign-born /3</i>	10.7	0.61	7.8	1.94	23.2	1.73	14.0	2.75
<b>Highest level of educational attainment (Percent)</b>								
<i>8 yrs or less</i>	4.5	0.48	3.8	1.61	11.5	1.23	3.2	1.19
<i>9 - 11 grades only</i>	6.3	0.49	7.6	2.13	13.0	1.22	4.6	1.68
<i>High school graduate</i>	22.5	0.92	24.4	3.42	25.5	1.91	19.3	2.81
<i>Some college, no degree</i>	16.7	0.85	19.7	3.14	16.0	1.53	23.7	3.01
<i>Vocational certificate, AA degree</i>	18.5	0.85	19.7	3.05	17.1	1.50	18.2	2.69
<i>College graduate</i>	19.3	0.80	13.6	3.00	11.1	1.23	20.4	2.99
<i>Post-graduate degree</i>	12.2	0.73	11.3	2.39	5.7	1.03	10.5	2.54
<b>Notes:</b>								
For the 2004 panel, the first full calendar year started in January, 2004.								
The estimates in this table are based on responses from a sample of the population and may differ from actual values because of sampling variability and other factors. As a result, apparent differences between estimates for two or more groups may not be significant.								
Source: U.S. Census Bureau, Survey of Income and Program Participation, 2004 Panel. For information on sampling and and nonsampling error, see <a href="https://www.census.gov/programs-surveys/sipp/methodology/sampling.html">https://www.census.gov/programs-surveys/sipp/methodology/sampling.html</a> .								
1. The margin of error (M.o.E.) can be subtracted from and added to the point estimate to get the 90 percent confidence interval around the estimate.								
2 Native born refers to nativity status of the household reference person and being a born in the United States or a possession of the United States.								
3. Foreign-born refers to those household reference people that are naturalized citizens of the United States or have some other immigration status in the United States.								

Table 3: Selected financial and demographic characteristics of householders by their housing tenure status over the duration of the SIPP 2008 panel

SIPP 2008 Panel, covering calendar years 2009-2012								
	Group 1: Homeowners that did not transition		Group 2: Homeowners that transitioned to renters		Group 3: Renters that did not transition		Group 4: Renters that transition to homeowners	
	Estimate / Percent	M.o.E. / 1.	Estimate / Percent	M.o.E. / 1.	Estimate / Percent	M.o.E. / 1.	Estimate / Percent	M.o.E. / 1.
Total (000s)	71,442	778	5,648	382	25,529	617	5,976	472
<b>Average total household amounts (in 2012 dollars)</b>								
<i>income -- 2009</i>	\$81,307	\$2,455	\$65,370	\$3,203	\$38,040	\$971	\$64,171	\$4,326
<i>income -- 2012</i>	\$81,063	\$2,300	\$63,544	\$3,412	\$39,036	\$1,227	\$72,509	\$3,837
<b>Lagged average total household amounts (in 2012 dollars)</b>								
<i>Secured debt</i>	\$114,420	\$3,149	\$120,185	\$13,191	\$4,736	\$783	\$47,794	\$8,021
<i>Unsecured debt</i>	\$12,609	\$7,611	\$18,406	\$5,087	\$7,720	\$700	\$13,276	\$1,792
<i>Wealth</i>	\$472,588	\$57,130	\$199,596	\$22,745	\$45,024	\$11,364	\$108,669	\$16,190
<i>Household income</i>	\$81,472	\$2,460	\$63,510	\$3,070	\$38,055	\$968	\$64,549	\$3,554
<b>Gender (Percent)</b>								
<i>Male</i>	47.8	0.31	46.1	3.20	45.8	0.75	49.9	2.83
<i>Female</i>	52.2	0.31	53.9	3.2	54.2	0.75	50.1	2.83
<b>Age (Percent)</b>								
<i>25-34</i>	10.4	0.49	25.7	2.97	28.0	1.27	41.1	3.16
<i>35-44</i>	19.2	0.58	25.1	2.74	22.2	1.19	27.9	2.72
<i>45-54</i>	24.8	0.50	20.4	2.61	21.7	1.03	17.9	2.60
<i>55-64</i>	21.5	0.45	12.3	1.78	13.1	0.91	8.5	1.58
<i>65+</i>	24.2	0.59	16.5	2.18	15.0	0.97	4.7	1.11
<b>Race (non-Hispanic) (Percent)</b>								
<i>White</i>	78.5	0.58	73.1	3.27	50.8	1.33	66.3	3.19
<i>Black</i>	8.3	0.40	9.4	2.06	21.7	1.18	12.2	2.37
<i>Asian</i>	2.9	0.25	2.2	0.93	4.1	0.56	5.1	1.49
<i>Other race</i>	2.0	0.26	3.3	0.93	3.5	0.49	2.8	0.96
<i>Hispanic</i>	8.4	0.40	12.0	2.44	19.9	1.02	13.6	2.31
<b>Marital status (Percent)</b>								
<i>Married</i>	62.0	0.60	50.7	2.83	30.2	1.18	41.4	2.85
<i>Not married</i>	38.0	0.60	49.3	3.98	69.8	1.18	58.7	2.85
<b>Nativity (Percent)</b>								
<i>Native-born /2</i>	88.5	0.56	88.6	6.40	76.6	1.35	84.2	7.44
<i>Foreign-born /3</i>	11.5	0.56	11.4	2.20	23.4	1.34	15.8	2.45
<b>Highest level of educational attainment (Percent)</b>								
<i>8 yrs or less</i>	4.0	0.33	4.6	1.44	9.3	0.88	3.9	1.12
<i>9 - 11 grades only</i>	4.8	0.36	3.5	1.11	11.9	1.12	5.0	1.39
<i>High school graduate</i>	22.3	0.69	18.9	2.45	24.6	1.29	19.4	2.79
<i>Some college, no degree</i>	13.1	0.57	15.6	2.15	14.2	1.11	16.2	2.35
<i>Vocational certificate, AA degree</i>	21.5	0.74	25.7	2.96	19.9	1.30	18.9	2.75
<i>College graduate</i>	21.3	0.63	22.4	2.59	13.5	1.18	23.9	2.75
<i>Post-graduate degree</i>	12.9	0.60	9.2	1.70	6.6	0.77	12.8	2.14

Notes:

For the 2008 panel, the first full calendar year started in January, 2009.

The estimates in this table are based on responses from a sample of the population and may differ from actual values because of sampling variability and other factors. As a result, apparent differences between estimates for two or more groups may not be significant.

Source: U.S. Census Bureau, Survey of Income and Program Participation, 2008 Panel. For information on sampling and and nonsampling error, see <https://www.census.gov/programs-surveys/sipp/methodology/sampling.html>

1. The margin of error (M.o.E.) can be subtracted from and added to the point estimate to get the 90 percent confidence interval around the estimate.

2. Native born refers to nativity status of the household reference person and being a born in the United States or a possession of the United States.

3. Foreign-born refers to those household reference people that are naturalized citizens of the United States or have some other immigration status in the United States.

Table 4: Logistic regression results of transistioning from an owner to renter at any time over the duration of the panel relative to staying an owner (combined 2004 and 2008 panel)

Parameters	Model 1: Base model			Model 2: Model with Wealth and Debt Variables		
	Estimate		Odds-ratio	Estimate		Odds-ratio
<b>Intercept</b>	-1.20	***		-0.18		
<b>Age groups:</b>						
25 - 34 yrs. old	1.31	***	3.71	1.25	***	3.50
35 - 44 yrs. old	0.72	***	2.06	0.75	***	2.11
45 - 54 yrs. old	0.24	**	1.28	0.29	***	1.34
<b>Gender: male</b>	-0.02		0.98	0.01		1.01
<b>Foreign-Born</b>	-0.07		0.94	-0.08		0.93
<b>Race/ethnic groups:</b>						
Black, non-Hispanic	0.15		1.17	-0.15		0.86
Asian, non-Hispanic	-0.02		0.98	0.33		1.39
Other race, non-Hispanic	0.34	**	1.41	-0.87		0.42
Hispanic	0.17		1.19	0.11		1.11
<b>From the 2008 panel</b>	0.10		1.10	0.01		1.01
<b>Level of educational attainment:</b>						
Some college, associates degree, vocational degree or certificate	0.24	***	1.27	0.35	***	1.42
College graduate	0.01		1.01	0.27	***	1.31
Post graduate degree	0.13		1.14	0.43	***	1.53
<b>Marital status: married</b>	-0.54	***	0.58	-0.43	***	0.65
<b>Number of own children under 18</b>	0.04		1.04	0.04		1.04
<b>Income, Wealth &amp; Debt amounts:</b>						
Lagged natural log of annual average household income	-0.16	***	0.85	-0.09	***	0.91
Lagged natural log of annual average household secured debt				-0.08	***	0.92
Lagged natural log of annual average household unsecured debt				0.02	***	1.03
Lagged natural log of annual average household wealth				-0.12	***	0.88

Table 4: continued

<b>Debt and race/ethnicity interaction terms</b>					
<i>Black_secured debt</i>			-0.11		0.89
<i>Asian_secured debt</i>			-0.54		0.58
<i>Other race_secured debt</i>			0.51		1.66
<i>Hispanic_secured debt</i>			-0.02		0.98
<i>Black_unsecured debt</i>			0.31		1.36
<i>Asian_unsecured debt</i>			0.29		1.34
<i>Other race_unsecured debt</i>			0.81		2.24
<i>Hispanic_unsecured debt</i>			-0.05		0.95
<i>Log Likelihood Ratio Test</i>	361.8	***	603.1	***	

Note: Significance Level: \*\*\* = 1%; \*\* = 5%; \* = 10%

Source: U.S. Census Bureau, Survey of Income and Program Participation(SIPP),  
2004 and 2008 panels.

**Reference groups:**

age -- 55-64 yrs old

gender -- female

nativity -- native-born

race -- white, non-hispanic

level of educational attainment -- high school graduate or less

marital status -- not married

Table 5: Logistic regression results of transistioning from renter to owner, relative to staying a renter at any time over the duration of the panel (combined 2004 and 2008 panels)

	Model 1: Base model			Model 2: Model with Wealth and Debt Variables		
Parameters	Estimate		Odds-ratio	Estimate		Odds-ratio
<b>Intercept</b>	-7.69	***		-5.03	***	
<b>Age groups:</b>						
25 - 34 yrs. old	0.81	***	2.25	0.79	***	2.21
35 - 44 yrs. old	0.62	***	1.86	0.56	***	1.76
45 - 54 yrs. old	0.23	*	1.26	0.17		1.18
<b>Gender: male</b>	0.01		1.01	-0.08		0.93
<b>Foreign-Born</b>	-0.36	***	0.70	-0.17		0.84
<b>Race/ethnicity groups:</b>						
Black, non-Hispanic	-0.51	***	0.60	-0.79	***	0.45
Asian, non-Hispanic	-0.06		0.94	-1.98	***	0.14
Other race, non-Hispanic	-0.58	***	0.56	-0.70		0.50
Hispanic	-0.23	**	0.79	-1.20	***	0.30
<b>From the 2008 panel</b>	-0.22	***	0.81	-0.11		0.90
<b>Level of educational attainment:</b>						
Some college, associates degree, vocational degree or certificate	0.26	***	1.30	0.06		1.06
College graduate	0.45	***	1.57	0.13		1.14
Post graduate degree	0.42	***	1.52	0.09		1.10
<b>Marital status: married</b>	0.33	***	1.39	0.19	**	1.20
<b>Number of own children under 18</b>	-0.04		0.96	-0.04		0.96
<b>Income, Wealth &amp; Debt amounts:</b>						
Lagged natural log of annual average household income	0.57	***	1.76	0.16	***	1.17
Lagged natural log of annual average household secured debt				0.13	***	1.14
Lagged natural log of annual average household unsecured debt				-0.03	***	0.97
Lagged natural log of annual average household wealth				0.16	***	1.18

Table 5: continued

<b>Debt and race/ethnicity interaction terms</b>						
<i>Black_secured debt</i>				0.49	**	1.63
<i>Asian_secured debt</i>				0.28		1.33
<i>Other race_secured debt</i>				2.25	***	9.52
<i>Hispanic_secured debt</i>				0.01		1.01
<i>Black_unsecured debt</i>				0.13		1.14
<i>Asian_unsecured debt</i>				0.30		1.35
<i>Other race_unsecured debt</i>				0.95	***	2.59
<i>Hispanic_unsecured debt</i>				0.57	**	1.76
<i>Log Likelihood Ratio Test</i>	605.4	***		1213.8	***	

Note: Significance Level: \*\*\* = 1%; \*\* = 5%; \* = 10%

Source: U.S. Census Bureau, Survey of Income and Program Participation (SIPP), 2004 and 2008 panels.

**Reference groups:**

age -- 55-64 yrs old

gender -- female

nativity -- native-born

race -- white, non-hispanic

level of educational attainment -- high school graduate or less

marital status -- not married