Published in final edited form as:

Socioecon Rev. 2016 July ; 14(3): 483–505. doi:10.1093/ser/mwv018.

Mortgage worries: young adults and the US housing crisis

Rachel E. Dwyer,

Department of Sociology, 238 Townshend Hall, 1885 Neil Avenue Mall, Columbus, OH 43210

Lisa A. Neilson,

Center for Human Resource Research, 921 Chatham Lane, Suite 200 North, Columbus, OH 43221

Michael Nau, and

Department of Sociology, 238 Townshend Hall, 1885 Neil Avenue Mall, Columbus, OH 43210

Randy Hodson

Recently passed away, formerly of:, Department of Sociology, 238 Townshend Hall, 1885 Neil Avenue Mall, Columbus, OH 43210

Abstract

The 2008 housing crisis and the changes in lending practices that led up to it shook the status of home loans as secure debt in the United States. The crisis hit during a time when many young adults had recently bought their first home, making it a particularly consequential moment in their homeownership career. We investigate the effects of the housing crisis on the mental health of young homeowners using longitudinal data. We model levels of anxiety among young homeowners carrying mortgage debt before and after the recession as an early indicator of how the crisis affected the experience of home loans. The positive effects of being a mortgaged homeowner before the recession declined significantly after the housing crisis. We discuss whether this shift may portend a longer-term shift in American beliefs in the value of investing in housing, with significant implications for financial well-being and wealth stratification.

Keywords

homeownership; stratification; debt; mental health; anxiety; Great Recession

The housing crisis of 2008 brought into sharp relief just how important debt has become for American households and the American economy. The U.S. has a long history of political policies that privilege the market provision of social needs and many of these use loans instead of direct government transfers to underwrite opportunity and social mobility (Leicht and Fitzgerald 2006). Several generations of Americans have thus been assured that taking on debt is a sound strategy to improve one's circumstances. The epitome of this model is homeownership. Home mortgages have long been considered to be "good debt" in the United States in part because they reflect the popular image of a property-owning middle class (Davis 2010). Carrying a mortgage is in fact synonymous with homeownership in the

U.S., unlike in other countries where the status of homeowner is reserved for those who hold property free and clear of debt (Taylor et al. 2011; Zavisca 2012). The full force of this ideological and institutional framework is reflected in the multiple positive effects of even mortgaged homeownership in the United States, including for mental health.

The housing crisis and the changes in lending practices that led up to it have shaken the status of home loans as good debt in the United States. The American norm of mortgaged homeownership grew out of a reasonably stable and predictable institutional context. These institutions were shaped by the federal government, including for example, through the Federal Housing Administration mortgage system and the mortgage interest tax deduction (Howard 1999; Fligstein and Goldstein 2012). The housing bubble, in contrast, was punctuated by lax income and asset checks, adjustable rate mortgages, securitization, and other practices that shifted the risk from lenders to homebuyers and third-party financiers, with disastrous consequences. When the bubble burst, families were forced to realize the inherent risk and uncertainty in mortgage finance (Pixley 2004). The crisis thus represents a moment of disruption in the association between mortgage debt and security in the American imagination. In her analysis of post-Soviet Russia, Jane Zavisca (2012) shows that in the Russian context of shaky mortgage markets, poor economic prospects, and a history of social housing, mortgages are seen as burdensome, a form of debt peonage rather than a mark of freedom. Zavisca raises the question of whether the housing crisis in America will make Americans more suspicious of mortgage debt as well. One possible consequence could be to make homeownership a more stressful experience, or at least a less positive experience than when mortgages were widely trusted as a secure investment (Pixley 2004).

We contribute to emerging research on the social consequences of the housing crisis by exploring the relationship between anxiety and mortgage holding for a cohort of young adults who had a unique vantage on the crisis as new homeowners. Whereas recent generations of American homeowners have used home mortgages as a normative path to status attainment and long term financial security, today's young adults are entering the housing market under new expectations about the lender-borrower relationship. Without the reassurance of a predictable pattern of mortgage outcomes, it is uncertain which meanings and emotional content young mortgage holders attach to their relationship with creditors (Bandelj 2009, Berezin 2005). For scholars the crisis thus presents an opportunity to study the emotional effects of changes in the broader institutional context. Under previously stable market conditions, homeownership was typically associated with better mental health, but given the recent housing crisis it is worth reexamining this relationship. The crisis exposed the risk associated with home mortgage debt, and just like other adverse events such as unemployment, the mentally scarring effects of the crisis may last long after the housing market recovers (Young 2012). We therefore expect this reframed home mortgage debt may be a source of anxiety rather than a path to a sense of security and well-being.

The cohort of young adults whose introduction to the housing market coincided with the 2000s housing boom and bust are a good case for understanding shifting effects of the housing crisis. Coming of age during a period of rapid financialization, including among households, the Millennials were more acquainted with debt as a part of everyday life than were previous generations (Fligstein and Goldstein 2015, van der Zwan 2014). With little

pre-crisis experience as housing consumers, however, their expectations of homeownership were malleable. Furthermore, understanding the effects of the recession on young adults is important because their lack of experience in the housing market and lack of wealth accumulation adds to their well-documented financial burden of student debt, high unemployment rates, and difficulties establishing independent households (Grusky, Western, and Wimer 2011; Dwyer et al. 2012; Newman 2012; Qian 2012). Experiencing the housing crash as early home buyers may have a significant socialization effect, shaping the long-term housing career of this cohort (Elder 1974). Much of the discussion of the housing crisis has focused on older Americans reaching retirement, but we argue that the housing crisis has also been a youth crisis, with potentially long-term consequences for the financial circumstances and attitudes of the cohort who came of age in the 2000s.

The Housing Crisis, Security, and Young Adults

Housing is a special commodity because it provides the basic human need for shelter, organizes family life, and secures financial and household stability. Markets in commodities that relate to human care and survival, such as housing, develop a moral valence and require an institutional and ideological framework that legitimates access to these sacred goods, creating a “social valuation” that goes beyond market valuations (Zelizer 1994; 2007; Bourdieu 2005; Zavisca 2012; Zuckerman 2012). The development of the social valuation of mortgage debt as relatively safe and secure in the U.S. rested on particular regulatory and fiduciary arrangements, such as the 30-year fixed rate mortgage and Federal Housing Association insurance that reduced risk and uncertainty even where many households carried high levels of debt (Zavisca 2012). The deregulation of the financial system in the 1980s and 1990s remade the housing system as regulatory loosening allowed sub-prime loans, low- and zero-down-payment loans, and adjustable rate mortgages, and the result was many more households entered into high-risk mortgages than in past decades (Williams, Nesiba, and McConnell 2005; Immergluck 2009; Krippner 2011). Yet the social valuation of home mortgages as secure persisted despite the eroding institutional stability in the housing and mortgage markets. Such divergence between social valuation and economic reality nearly brought the whole financial system down as the housing prices peaked and then sharply declined (for extended analysis of the roots of the crisis, see: Lounsbury and Hirsch 2010; Zuckerman 2012).

It is too early to tell whether the social valuation of home loans in America has been fundamentally challenged as a result of the crisis, but the short-term response to the crisis by young adults may be an early indicator of potential longer-term effects (Bostic and Lee 2009). Public opinion surveys of perceptions of homeownership show that the crisis significantly affected American’s views, especially young adults who were new to the housing market. While overall Americans tend to report continued faith in homeownership as a path to wealth accrual, perceptions of the “safety” of leveraged homeownership were more negatively affected by the housing crisis, with the greatest declines typically among the young in surveys that analyze responses by age (Hart Research Associates 2013; Belsky 2013). Questions that asked about the shorter-term horizon, in a period when the housing risks are clear and present, also showed more negative perceptions of homeownership, than questions with a long time horizon such as whether respondents expect to ever become

homeowners (Belsky 2013). As perceptions of risk rise, so too do personal experiences of stress and anxiety. Homeownership has long been associated with positive mental health benefits, but if the housing crisis shook the status of mortgages as a path to security, homeowners may no longer experience an emotional boost from homeownership. Younger and newer homeowners who had little prior experience of the housing market before the boom and bust are particularly exposed to the change in the status of mortgages.

Homeownership, Mental Health, and Young Adults

There is a long tradition of research on homeownership showing that Americans who own their homes have better mental health and higher socioeconomic status than do non-homeowners, and that these positive effects accrue to homeowners with mortgages as well as to those who own free and clear (Haurin et al. 2002; Aaronson 2000; Dunn 2000; Rohe et al. 2002). Scholars point to a range of reasons that homeowners in America have lower stress than non-owners, linked to the symbolic value, use value, and wealth value of owning a home (Zavitsa 2012; Lindblad and Quercia 2014). There is, however, a growing consensus among scholars that the positive effects of homeownership are not uniform, but occur under variable conditions and depend on particular social contexts. In their study of British mortgage holders during the 1990s, Nettleton and Burrows (1998) found that the negative association between mortgage problems and mental health was particularly strong during the deep recession in the early 1990s, and health outcomes worsened when owners are worried about making payments. Dietz and Haurin (2003) suggest that stress may be higher for all homeowners during periods of depreciation. Lindblad and Quercia (2014) find that a sense of individual control is an important source of the nonfinancial benefits of homeownership, including improved mental health. This sense of control may be threatened in periods of crisis.

The housing crisis represented a significant shift in the conditions of mortgaged homeownership. Early research on the effects of the housing crisis tallies a grim toll of foreclosures, wealth decline, and family disruption for American households during the Great Recession, a recession more defined by housing problems than any other downturn since the Great Depression (Crump et al. 2008; Hanna, Yuh, and Chatterjee 2012; Ellen and Dastrup 2012; Fligstein and Goldstein 2012). Because of the prevalence of housing problems, most early studies of the effects of the housing crisis have focused on the subset of households in default or foreclosure as the group exposed to the most acute consequences. This research shows that households in foreclosure or default suffer a range of negative outcomes, including higher levels of anxiety, depression, and disorders related to stress like hypertension, and at the same time higher levels of foregone medical care because of their financial circumstances, perhaps increasing anxiety even more (Nettleton and Burrows 1998; Heflin, Sandberg, and Rafail 2009; Pollack and Lynch 2009; Pollack, Griffin, and Lynch 2010; Pollack, Kurd, and Livshits 2011; Currie and Tekin 2011; Ross and Squires 2011; Burgard, Seefeldt, and Zelner 2012; Kalousova and Burgard 2013; Manturuk 2013).

However, even homeowners who did not experience immediate financial distress during the housing crisis may be more stressed than before the crisis. Rohe and Lindblad (2013) argue that the mental health benefits of homeownership may be affected by the crisis not only

through the direct effects of personal experiences of financial hardship, but through more indirect effects as well, including for example, exposure to relatives', friends' and neighbors' housing problems, and elevated concerns about the security and wealth accrual possibilities of homeownership in the long term. Some of the very same factors that lead to positive effects of homeownership in good times—like the tendency of homeowners to live in neighborhoods with few renters and the importance of homeownership to wealth portfolios—concentrate potentially negative effects of homeownership during a housing crisis (Rohe and Lindblad 2013). One of the most important sources of the positive mental health effects of homeownership appears to be through a sense of security and control, both potentially threatened in a period of declining house prices and widespread defaults in one's neighborhood (Manturuk 2012). Home mortgages, like all financial transactions, are based upon trust (Carruthers and Ariovich 2010). Because home mortgages are typically the largest item on a family's balance sheet, loss of faith in the value of a home mortgage will likely have mental health and emotional consequences (Pixley 2004). Thus even households that successfully weathered the financial storm may begin to view their mortgage debt as a liability rather than resource and more similar to other forms of debt like credit cards (Drentea and Lavrakas 2000; Sweet et. al. 2013).

There is a small but growing body of evidence that indeed the negative outcomes of the housing crisis were not limited to mortgage holders who suffered acute housing distress, but affected homeowners more broadly. Communities with high foreclosure rates have lower levels of mental health and higher suicide rates overall compared to other communities, evidence suggestive of potentially broader effects (Houle 2014; Houle and Light 2014). A series of studies of a sample of low-income homeowners finds that these homeowners experienced more stress and more negative perceptions of homeownership after the crisis compared to before, but continued to have lower stress than non-owners after the crisis (Manturuk, Riley, and Ratcliffe 2012; Manturuk 2013). A related study conducted in 2008 found that homeowners have a higher sense of control than renters, but the effect size was small and the authors speculate that perhaps the difference between owners and renters was relatively small because of the financial crisis (Manturuk, Lindblad, and Quercia 2010). There is still relatively little research that compares pre- and post-crisis effects, however.

Prior research thus demonstrates that U.S. homeowners experience higher stress from immediate housing problems and a more limited set of studies demonstrates that there have been broader impacts on all homeowners as a result of the crisis. There is very little attention to young adults specifically, however, despite intense popular press interest in the experiences of youth. Existing studies are also limited in focusing mainly on groups experiencing acute housing stress. There are only a handful of studies of broader impacts, and none to our knowledge that focus on young adults specifically.

While all age groups experienced the boom and bust, the young adults coming of age in the 2000s were exposed to the historic disjuncture in the social valuation of homeownership at a crucial moment in their housing career that may make them particularly susceptible to a shift in the association between homeownership and mental health. The cohort began to enter homeownership during the excessive enthusiasm of the boom and entered the period of crisis with low housing equity, both because they had been homeowners for a relatively short

period of time, and because they entered homeownership during a period with historically low requirements for down-payments (Deitz and Haurin 2003; Immergluck 2009). The early years of homeownership when little equity has accrued are particularly stressful (Deitz and Haurin 2003). Because they are newer homeowners, young adults were also more likely than older buyers to take on mortgage debt for the purposes of purchasing a home during the 2000s, making any downturn particularly likely to affect their experience of homeownership overall. Older cohorts were more likely to have taken out home equity loans on existing homes rather than new mortgages during the boom, a form of mortgage debt that is less likely to affect considerations of the value of buying a home, but rather raise questions about the value of withdrawing equity from a home (Immergluck 2009). Older adults certainly face distinctive challenges as a result of the housing crisis: a larger proportion of older adults are homeowners and have less time to recover from economic losses because they are closer to retirement than are younger homeowners. These age-related differences suggest it is useful to consider the experiences of young adults separately.

Young adults also face particular vulnerabilities to housing market turmoil because their early position in the life course leaves them with little cushion to respond to crisis. The lives of many young adults are relatively unsettled as they work to build families and careers: young households have had little time to accumulate resources to buffer economic shocks, and they hold high debt relative to assets (Drentea 2000; Keister 2000; Houle 2013). Young adults report more stress than older adults overall, and some of that age gap is explained by stress from financial circumstances, including holding debt (Mirowsky and Ross 1999; Drentea 2000). When home values declined, many young adults had their net worth totally wiped out, particularly because equity cushions on mortgages had become so thin because of the deregulated and aggressive lending practices (Immergluck 2009).¹ The median decline in net worth for individuals under 35 in 2007 was 25.5 percent by 2009, compared to 15.2 percent for those aged 55-64 or 13.9 percent for those aged 65-74 (Bricker et. al. 2011).

The effects of the crisis on young adults are important for a broader reason as well: economic experiences in early life leave an especially strong imprint on future values, expectations and behavior (Elder 1974; Moschis 2007). Having had little prior experience, young adults' overall experience of homeownership was likely significantly affected by the recession (Pfeffer, Danzinger, and Schoeni 2013). Older cohorts have more experience in the housing market, which may make the housing boom and bust less influential for their assessment of homeownership and security. Bad economic conditions early in adulthood can have "scarring" effects over the life course as well, as demonstrated by evidence of long-term wage disadvantages faced by youth who enter the labor market during a recession (Oreopoulos et al. 2012). The widespread discussion of problems with mortgages shifted the social valuation of mortgages, reducing the normative association of mortgage debt with security and potentially increasing stress. Because young adults had less prior experience with homeownership, they may have been particularly affected by this shift in the public

¹ Younger homeowners do carry home equity loans, but in the 2000s this was more likely to have been an arrangement to make a home purchase than to fund other spending. One of the creative instruments that arose during the 2000s housing bubble was an 80/20 piggy-back loan where the buyer borrowed 100% of the purchase price, 80% as a first mortgage and 20% as a second mortgage or home equity loan (Immergluck 2009).

discussion and normative associations of home ownership. The experience of young adults early in the crisis thus may be an important leading indicator of future understandings of mortgage debt.

Hypotheses

Did the housing crisis alter the mental health boost of holding mortgage debt for young homeowners? As the investment value of mortgage debt came into question, mortgages may increasingly have been seen as a potential liability rather than asset. We follow previous studies of the effects of the housing crisis on homeowners and study the relationship between holding mortgage debt and levels of anxiety as an indicator of stress. We analyze the relationship between carrying mortgages and anxiety before and after the start of the housing crisis, expecting that the emotional tenor of homeownership shifted over time.

Hypothesis 1: Young mortgaged homeowners had lower anxiety compared to non-owners before the housing crisis, but lost this advantage during the housing crisis

Because the housing crisis affected the overall context of homeownership and challenged the normative association between homeownership and security, we expect the decline in the mental health boost of homeownership occurred broadly for young homeowners, and not only among those who experience payment problems or are underwater on their mortgages.

Hypothesis 2: The mental health benefits of mortgage indebtedness declined during the crisis even for those with no housing-related financial problems.

Data and Methods

We use the National Longitudinal Survey of Youth-1997 cohort (NLSY97) to study the experience of mortgaged homeownership before and after the housing crisis. Under the sponsorship of the U.S. Bureau of Labor Statistics, the NLSY97 follows a nationally representative cohort of youth starting in 1997 when they were mainly high school juniors and re-interviews them annually. A rich variety of questions about work, family, and current financial behaviors are available, including detailed measures of homeownership and debt-holding. The original sample includes 8,984 respondents, with an oversample of Black and Latino young adults. As we describe further in the analytic strategy section, our main analysis focuses on two years right before and after the crisis: 2006, the year at the peak of the housing boom, and 2008, the first recession year with data on mental health.

Anxiety

Our main dependent variable is derived from the five-item short version of the Mental Health Inventory (MHI-5). The MHI-5 is a mental health subscale of the Medical Outcomes Study 36-item Short-form Health Survey (Ware and Sherbourne 1992), which is extensively used in clinical research on mental health. Beginning in 2000, the NLSY97 has collected biannual measures using the MHI-5. Respondents are asked how often over the past month they have: 1) felt calm and peaceful, 2) been a nervous person, 3) felt depressed, 4) been a happy person, and 5) felt down or blue on a scale ranging from “all of the time” to “none of the time.” Taken together, these five questions have been extensively validated as screeners

for depression (Yamazaki, Fukuhara, and Green 2005; Rumpf et. al 2001). The first two questions correspond with symptoms of anxiety and are effective in screening for generalized anxiety disorder, panic disorder, and obsessive compulsive disorder (Cuijpers, Smits, Donker, Have, and de Graaf 2009). We therefore employ the first two questions in our main analysis because they most directly correspond with anxiety, reverse-coding “been a nervous person” so that the directions of the scores are consistent. We create a single measure of anxiety symptoms by calculating the mean across both survey items. In supplemental analyses we use the full MHI-5 scale, reverse-coding being depressed, down or nervous so that higher scores consistently reflect a more negative mental state across all five indicators. We use this as a sensitivity test because prior sociological studies tend to employ the entire MHI-5 module as a broader measure of mental health (Bird 1999, de Mel, McKenzie and Woodruff 2008, Dunn and Hayes 2000). We construct this additional measure of mental health by calculating the summary mean across the five survey items ($\alpha = .78$).

Home Mortgage Indebtedness

We exclude respondents who own their home outright because there are too few in this category to make statistically meaningful comparisons between mortgaged and non-mortgaged homeowners. Our analysis thus focuses on how mortgaged homeowners compare to non-homeowners. Our measures of housing debt include all mortgages, home equity debt, and personal loans for the home (few respondents report personal housing loans and the amount is typically quite small). In the main analysis we use a dummy variable indicator of whether the respondent held a mortgage before or during the housing crisis, which we use to model the effects of having any mortgage at all.

There are several complications associated with the timing of data collection for the home mortgage variables. In the NLSY97, the debt and assets module is not asked of each respondent every year, but rather at regular intervals across the life course, at crucial transitions such as getting married or having a child, and at certain ages, in the first interview after respondents turn age 20, and again in the first interview after they turn 25. Most of the debt and assets data therefore is collected around age 20 and 25. Fortuitously for our interest in the recession, most NLSY97 respondents turned 25 in the years 2006-2008, and so we have good data on mortgages in this period. Still, because the questions are not asked of respondents in every year, the timing of our data on mortgages is not precisely lined up to when respondents took on those mortgages. In our main analysis, we identify mortgage holders as all those who reported holding a mortgage before or during the housing crisis, treating this as a stable sample of mortgaged homeowners. One advantage of this approach is that any change with the recession cannot be due to a compositional change in who is considered a mortgaged homeowner. While some of those we call homeowners in 2006 may not yet have taken on a mortgage, this is a relatively small threat because so few bought houses during the crisis years that followed. Most who report being homeowners in 2007 and 2008 bought during the housing boom. Still, in order to evaluate that threat, we conduct a supplementary analysis where we identify mortgaged homeowners by the most recent report of whether they held a mortgage, allowing mortgage status to be time-varying. Reassuringly, that analysis shows the same pattern of results as we report in the main analysis.

We also measure levels of housing distress, including whether the respondent is underwater on their mortgage and whether they were ever significantly late on payments in 2007 and 2008, and identifying those who were nearing default or even foreclosure in the early stages of the crisis. These variables are theoretically important for testing *Hypothesis 2*, but they also serve as a check on the stability of our sample by identifying those respondents whose hold on homeownership may be particularly tenuous.

Controls

We control for factors that may influence the relationship between housing debt and anxiety. Most important are indicators of socioeconomic status that capture how well the respondent can weather hard times. We include a continuous measure of income, including respondent and spousal income if married. We top-code and log income because the variable is skewed.² We measure employment history with a three-category variable indicating whether the respondent 1) did not work for pay in the last year; 2) worked on average full-time in the last year; 3) and worked on average part-time in the last year. In order to capture whether the respondent experienced any serious disruptions in the past year in employment or family situation that affected their income, we also measure whether the respondent experienced a 25 percent or greater decline in income in the past year. We include measures for race, including black, Hispanic, and other race, with white respondents as the reference group. We capture four-year college attainment with a 3-category variable: bachelor's degree or equivalent; currently enrolled in a four-year college; and neither enrolled nor graduated³. We control for whether the respondent holds credit card and educational debt as an indicator of current liabilities that may make mortgage indebtedness more worrisome during a recession. Finally, we control for time since the respondent first reported being a homeowner, expecting that those who started owning earlier got into the market before the large price increases, and had a chance to build equity in their home.

We also control for demographic factors that may affect the relationship between debt and anxiety during the recession. Because the data is a sample of a cohort of young adults, we are principally concerned with controlling for factors that are associated with the process of aging and moving through the life cycle that is the principal alternative explanation for a period effect associated with the recession. Older and married respondents may feel more able to handle hard times even with a large mortgage because these respondents may have more experience and resources. Parents may feel more anxious when indebted during hard times because of concerns over wealth accrual and negative consequences of housing disruption for children. Finally, we control for the baseline measure of anxiety in 2000, the first year the mental health variables were collected, in order to control for any underlying stable propensities to anxiety that may affect the relationship between holding mortgages, the recession, and mental health. Appendix A reports descriptive statistics for the variables in the analysis in 2006 and 2008. The table illustrates how the crisis hits at this crucial point in the transition to adulthood as many in the cohort completed school, moved into full-time work, married, and became parents.

²We also tested a categorical measure of income and a quadratic function, but the linear term fit best.

³We do not include two-year degrees because these provide little wage boost over a high school degree on average.

Analytic Strategy

In our main analysis we use OLS regression, clustered on respondent id because of the longitudinal design of the NLSY97, which provides repeat measures on individuals. Anxiety is normally distributed, consistent with the assumptions of our modeling strategy. We model the period effect by interacting a dummy variable indicating the recession year of 2008 with the measures of mortgage debt. By focusing in on the immediate pre- and post-crisis period, we follow the spirit of McInerney et al. (2013) in treating the recession as a shock approximating a treatment effect in an experiment. We focus on the shift between the peak boom year and the peak recession year in order to capture the immediate effect of the crisis period. Another advantage of this approach is we concentrate on the years when the highest percentages of this young cohort have transitioned to homeownership, excluding earlier years when homeownership rates were lower, and the data were much sparser. While the analysis focuses on two years, we do take advantage of the longitudinal design of the NLSY97 by including data collected in earlier waves before 2006, including the important control for baseline anxiety in 2000, which goes farther towards capturing invariant within-person characteristics than clustering on respondents. Our analytic sample includes 11,785 person-years.

We conducted a range of sensitivity analyses to evaluate whether our results were robust when including more years of data and using models designed for panel time series. We analyzed fixed effects models which included all years from 2002-2009 and interpolated the values of anxiety for the odd years when mental health variables were not collected. We also tested “forward-filling” the anxiety values. In all these analyses, we found a similar pattern of results. In sensitivity analyses that include more years farther back, the same pattern of results holds, but key variables become somewhat less significant as fewer respondents are homeowners in those earlier years.

Limitations

The NLSY97 provides rich data on a cohort of young adults just coming of age during the housing boom and bust in the United States and is well-suited for our purposes. Even so, there are limitations associated with studying a cohort of youth and with the design of the NLSY97 data collection. The youth in the sample who became homeowners are in some sense precocious in making this transition ahead of the majority of their peers. This may make them different in ways that may affect the relationship between debt and homeownership that is not fully possible to capture with controls. Our supplemental analyses using fixed effects models provides a more stringent test of omitted variable bias and we are reassured that the results are similar (Halaby 2004). We also do not have precisely timed data on entry into and exit from homeownership over the crisis period and so any period effect will necessarily include compositional effects. Fortunately, the collection of the debt data is very well timed to the immediate pre- and post-crisis period and so these issues are minimized by our analytic strategy of focusing on 2006-2008. Our measures of housing distress also help us identify those who may be getting close to exiting homeownership. Despite the steps we have taken, there are likely still compositional effects as a part of the period effect and so we are cautious in our causal conclusions. We also recall Sampson’s (2008) caution that social effects operate in part through selection effects. In this

case, those in the cohort earliest to homeownership may be different from other members of the cohort, but these very differences may serve as a sort of demonstration effect that influences youth attitudes towards homeownership over the long term even among those in the cohort who were not homeowners during the boom and bust.

Results

The NLSY97 cohort transitioned into homeownership during the 2000s and then experienced significant negative effects during the housing crisis. By 2008 when the respondents were on average 26 years old, mortgaged homeowners made up 23 percent of our analytic sample.⁴ Before the crisis, few young homeowners were underwater on their mortgages – about 90 percent reported higher housing values than mortgage amounts. As Figure 1 shows, after 2006, more than 40 percent of young homeowners reported being underwater, reaching almost 50 percent of young homeowners in our sample in 2009, similar to national estimates for young adults (Zillow 2005, 2012).⁵ Youth across income levels and of all racial and ethnic groups saw significantly increasing rates of being underwater on mortgages. The strength of this pattern supports our argument that the housing crisis was in part a youth crisis.

Did the housing crisis increase anxiety for young adults transitioning into homeownership during the 2000s? Our results suggest that there was a significant change in the experience of homeownership after the crisis as predicted in *Hypothesis 1*. In our first models we estimate the effect of being a mortgaged homeowner on anxiety before and after the housing crisis struck. Table 1 reports these findings for a base model with only a dummy variable for homeowners who carry a mortgage interacted with a dummy indicating the crisis year of 2008, and the fuller models with a range of controls. The dependent variable is coded so that higher values indicate higher levels of anxiety.

The base model shows a significant negative shift in the experience of mortgaged homeownership after the start of the crisis, supporting our expectations of a recession effect in *Hypothesis 1*. Both the main effects and the interaction term are significant and in expected directions. The main effect of holding a mortgage represents the effects of holding a mortgage before the recession occurred (when the recession dummy variable equals 0). Our results replicate the findings of other studies that homeownership—even if mortgaged—reduces anxiety, before the recession by -0.055 points on a 0 to 5 scale. The interaction term between the recession and mortgage indicators is positive, meaning that anxiety is higher for homeowners during the crisis than it was before the recession. The effect of mortgaged homeownership during the recession is given by adding the main effect for holding a mortgage to the interaction term, resulting in an effect of -0.015 , showing that almost all the emotional boost of mortgaged homeownership goes away after the crisis. Because we are interacting two dummy variables, we can also express this relationship in a different way.

⁴Our estimate of homeownership at these ages is lower than estimates from other data sources such as the Current Population Survey because we include youth in a variety of living quarters, not only youth living in independent housing units as in the national estimates, and because of differences in the process of data collection for this longitudinal cohort compared to cross-sectional surveys (Census 2012). We also include only owners carrying mortgages.

⁵The overall pattern of change is consistent with other data sources, though the size of the change may be exaggerated by the data collection process.

The main effect of recession is positive and significant, indicating that during the recession anxiety was higher by 0.042 points than before the recession for non-homeowners. Mortgaged homeowners experienced even higher levels of anxiety with the onset of the recession, however, elevated by 0.82 (the main effect of recession added to the interaction term). In sum, mortgaged homeownership no longer provided the same emotional buffer after the start of the recession that it did before the recession.⁶

The full models show that these effects persist even when controlling for factors that may influence the effect of the interaction between the recession and mortgaged homeownership on anxiety. The controls in the full model operate as expected from prior research, supporting our expectation that our sample is representative of other similar groups in other studies. Respondents who are enrolled in college or have higher income have lower anxiety compared to those without these statuses. Those who work full-time have lower anxiety compared to those not working. Experiencing a significant decline in income does not significantly raise anxiety in this model, but perhaps this relates to the varied reasons respondents may lose income in this young sample, including changes in family situation, moving in and out of schooling and employment changes. Holding credit card debt increases anxiety, while carrying educational debt does not in this full model. Being married and getting older reduces stress, while being a parent increases anxiety. This is consistent with prior work that suggests the families with children have the greatest financial strains (Warren and Tyagi 2003). Women report higher levels of anxiety than men, and minority respondents report lower levels of anxiety than white respondents. These findings are consistent with prior work showing women are more likely to report stress and minorities show more resilience relative to white respondents (Keyes 2009). Baseline anxiety in 2000 is significantly positively related to anxiety in later years, consistent with our expectation that some part of mental health levels are relatively stable.

Even after controlling for factors that may compete with the recession in explaining change in the relationship between mortgage-holding and anxiety over time, we find a very similar pattern of results for mortgage holding before and after the recession. The main effect of holding a mortgage before the recession declines in size slightly from reducing anxiety by 0.055 points to 0.053 points, suggesting that the benefits of homeownership are connected to other advantages. Once we control for other factors, the anxiety-reducing effect of holding mortgage debt during the recession gets a little smaller at .011 points (main effect added to the interaction effect). In separate tests of coefficients, each term and all three parts of the interaction together are all significantly different from zero. In some of our alternative specifications, the effect of holding mortgage debt during the recession actually turns positive.⁷ The main effect of the recession for those with no mortgage debt also increases, to 0.05 points, and the effect of the recession for those with mortgage debt is also larger at 0.092 (recession effect plus recession*mortgage interaction). The R-squared is significantly

⁶Our results before the recession are similar to those of previous studies showing lower stress levels among homeowners. It's also possible that there was a special boost to homeownership during the housing boom as "irrational exuberance" about the potential for ever-increasing home prices fueled home purchases.

⁷For example, when we allow the mortgage indicator to be time-varying and use the most recent data on mortgage debt, the interaction turns slightly positive.

increased in the full model with controls, but the relationship between mortgage debt, recession, and anxiety is quite stable between the two models.

The effect size of the terms in the mortgage and recession interaction is on the order of other factors associated with financial circumstances. Figure 2 graphs selected coefficients from Table 1 in order to visualize the size of these comparisons (all graphed coefficients are significant in the model). The anxiety-reducing effect of holding a mortgage before the recession is about the same size as the effect of being married, about five-tenths of a point on the anxiety scale, which ranges from 1 to 4. The mortgage effect is also about the same size as the anxiety-increasing effect of carrying consumer debt, but smaller than the gender effect, suggesting that financial circumstances are similar in the extent to which they move mental health. The effect size of holding a mortgage before the recession is considerably smaller than the association between prior anxiety and current anxiety, with baseline mental health affecting current mental health by one-third of a point. This is reassuring that our model is reasonable since we would not expect that the effect of a somewhat distal factor in mental health like holding a mortgage should be the same size as the relatively more direct relationship between current and prior mental state. The graph also vividly illustrates how the anxiety-reducing effect of mortgaged homeownership goes to zero in the immediate aftermath of the recession.

We estimate one more model to test our expectation in *Hypothesis 2* that the recession effect will hold even controlling for housing distress. In Table 2 we add a control for homeowners who were underwater on their mortgage (owing more than the value of the house), and a control for being late on a housing payment in order to assess whether the recession change in the relationship between mortgage-holding and anxiety was caused by direct experiences of housing distress, or whether it was more broadly felt. The deflation of the positive effect of homeownership occurred on average for all homeowners, but it could be that the effect was really only for those who were in trouble with their mortgage. We find that the control for being underwater is both insignificant and barely moves the other coefficients. The control for being late on housing payments does significantly raise anxiety, and with a fairly large effect of almost one-tenth of a point. The mortgage and recession interaction stays significant even with these controls, suggesting that at least according to these measures the shift in the association between anxiety and mortgaged homeownership occurred across a broad population of young adults. In fact, the effect of holding mortgage debt during the recession actually turns slightly positive, increasing anxiety by 0.001 points (main effect added to interaction effect). We interpret this finding to mean that the perceived security and mental health benefits of home mortgages may have declined, and not only because mortgages are a strain on finances. Even households with no evidence of problems meeting their commitments no longer enjoy a psychological benefit from having a mortgage.

In supplemental analyses we replicated all models for a 5-item measure of depression rather than the 2-item anxiety measure in order to assess whether the mental health effects of the recession and holding mortgages were broader than anxiety. We find a substantially similar pattern of results. In some cases, the significance level is somewhat lower for the depression analyses, indicating that anxiety may be more affected by the recession shift than feeling blue or down, but the recession interactions with depression are significant at the $p > 0.10$

level in all models. The results overall are thus robust to the broader features of mental health indexed by the broader depression indicator.

Discussion: From Period to Cohort?

We have considered the housing crisis as a period effect and focused on young adults as the group potentially most likely to be affected by the period change because of their age and position in the life course. We have thus considered age and period effects—but could there also be cohort effects as a result of the housing crisis? The housing crisis may prove to be particularly influential for young adults' experiences of home mortgage debt over the long term given that the crisis hit at a consequential moment in their housing careers, during a time when many young adults had recently bought their first home. We develop this perspective taking inspiration from Glenn Elder's (1974) classic study of the generation that came of age during the Great Depression, which detailed how significant historical events like global financial crises shape cohorts over the long term.

Events that occur early in the life course are especially likely to affect later experiences, through socialization processes, stress effects, and the developmental unfolding of the life course (Ryder 1965; Moschis 2007; Dwyer et al. 2011). Young adults coming of age in the 2000s made their first forays into the mortgage market during the housing boom, one of the riskiest periods to take on home loans in American history. Historically high prices put young adults at risk of price declines when the bubble popped. Historically lax regulations allowed a dizzying array of mortgage instruments that resulted in many first-time buyers becoming very highly leveraged and exposed to large payment increases over time. While all homebuyers during this period faced this increased risk, young adults on average had the least accumulated equity and thus the least cushion to manage the crisis. After the crisis, there was much less credit available and young adults found it difficult to take advantage of falling prices and interest rates that made homeownership more affordable than in prior decades. The anxiety experienced by the "housing crisis cohort" may therefore trigger a more jaundiced view of mortgage indebtedness across their life course compared to previous generations. Traumatic events that occur early in the life course tend to have long-running effects by changing norms and expectations, by prompting coping strategies that become habitual, and through other long-term changes in behaviors and attitudes (Elder 1974; Moschis 2007). This may complicate an already much more uncertain path to adulthood and financial security for this cohort compared to previous cohorts and have significant implications for their financial well-being and wealth accrual in the future (Mortimer 2003; Waters et al. 2011).

Our findings of the association between mortgaged homeownership and anxiety are consistent with the possibility that the meaning of housing debt is shifting away from the model of mortgage as "good debt", though this assumes that the shift in the emotional experience of homeownership will affect attitudes and norms. Will the cohort transitioning to adulthood during the 2000s have a more negative view of housing debt and homeownership over the long term, or will the emotional shock of the crisis fade away over time? It is difficult to know now, but either result has potentially important consequences for social stratification and financial well-being in America. If the recession cohort has a

permanently more negative experience and view of indebted homeownership, this generation may be more prudent investors who are more careful about risky instruments in the future, which could improve outcomes for a cohort already scarred by a recession early in their careers. On the other hand, a negative view of mortgages could lead to underinvestment in housing and an excessively conservative approach to debt that may lead to missed opportunities (Pendall et al. 2012). If the recession experiences instead fade over time and the recession cohort follows a similar housing career as earlier cohorts, we may be optimistic about the possibilities for housing wealth accrual, but also worried about the potential for another housing crisis to occur if the still very loosely regulated banks get back into the business of risky lending. Houle (2013) finds that the cohort coming of age in the 2000s already carried more debt before they become homeowners compared to earlier cohorts and this may make it more difficult for them to manage the ups and downs of the housing market as well. The institutional underpinnings of the American mortgage market are also undergoing a period of transition and public debate, and the outcome of this process is likely to shape the cultural and emotional value of mortgages in the future (Bandelj 2009, Berezin 2005).

Conclusion

We find that the housing crisis and ensuing recession reduced the emotional boost provided by mortgaged homeownership. These findings are consistent with our expectation that the institutional and market context influences the mental health consequences of home mortgages, and suggests there may be broader influences on the social valuation of homeownership as a secure investment. When the housing crisis challenged security, mortgaged homeowners (even those without reported housing problems) no longer felt less anxious than nonowners.

Is taking on debt a prudent investment or a form of overconsumption? This question extends beyond the particulars of the housing crisis to the broader political economy and moral status of debt in America. Jane Zavisca argues that one reason the mortgage market has been slow to develop in Russia is that Russians believe that “mortgaged homes are not owned, and that secure housing should be a right, not a gamble” (2012:176). Americans have tended to see mortgages as consonant with secure housing, but there has always been an element of a gamble in taking on a large amount of debt to be carried into an uncertain future. Deregulated financial markets increase the risk, however, and this is a crucial element of the “great risk shift” where Americans increasingly are expected to provide their own insurance against the uncertainties of life in the modern neo-liberal version of capitalism (Hacker 2006). Debt has become one of the ways that Americans manage the increasing uncertainty and income shocks that they experience in the new risk society, but rising indebtedness also becomes a new source of uncertainty itself, which may raise vulnerabilities to future shocks (Leicht and Fitzgerald 2006; McCloud and Dwyer 2011; Kalousova and Burgard 2013). Rising indebtedness is also related to rising inequality as slow income growth among all but the most affluent households has resulted in financial problems as well as deficits in sustaining middle class lifestyles that have been filled in part by debt (Leicht and Fitzgerald 2006; Squires and Hyra 2010).

More research is needed on the financial well-being of American households and the social and institutional contexts that help determine when debt is a good or a bad bet. A number of social surveys including the NLSY cohorts offer rich data on debt that has only begun to be exploited. We have focused on young adults, but there is also a need for targeted research on the distinctive concerns of older adults. Other social cleavages may shape the response to the housing crisis as well, including especially the racial and ethnic divides that are so important in the U.S. housing market. There are also a range of questions that require more qualitative methods. Interviews and ethnographic observation will be important to further explore our conclusion that changes in the relationship between anxiety and mortgage debt is an early symptom of the shifting social meaning and experience of debt in America (see for example, Peñaloza and Barnhart 2011). Institutional and organizational analysis will shed light on the opportunities and constraints that American households face to gain access to credit and manage their portfolios. It will be particularly important to understand how debt intersects with social stratification structures in affecting Americans' life chances.

The new realities of debt in America also mean that credit markets are increasingly important sites of social contestation. Credit is an important element in property relations, and has given rise to conflicts between debtors and lenders across time and place (Weber 1968: 80-90, Wiley 1967). Yet the extension of credit need not be a cause of social tensions if it is embedded within a broader set of norms and rules that ensure cooperation, facilitate trust and legitimize the transaction in the eyes of participants (Rona-Tas and Guseva 2014). The recent housing bubble and subsequent crisis has caused many to question the dominant cultural belief that a home mortgage is a sound, safe investment, and the Occupy Wall Street movement involved in no small part a critique of the role of debt in the "ownership society" (Davis 2010; Gitlin 2013). Whereas having a mortgage and becoming more leveraged provided a distinct psychological advantage prior to the crisis, this edge largely dissipated after the crisis. As potential borrowers become more leery of both debt and lending institutions, the postwar social contract premised on both economic growth and credit expansion may continue to erode (Carruthers and Ariovich 2010; Krippner 2011; Young 2012). One important question for the future is whether more disillusioned homeowners will blame institutions like banks and the government or whether the target will be groups that are perceived as "less deserving" homeowners like lower-income minorities and others who have only recently attained homeownership. The moral discourse of responsibility and trustworthiness that stigmatizes debtors in default or delinquency may lose some of its power if debt disillusionment becomes sufficiently widespread (Carruthers and Ariovich 2010). If debt is increasingly thought of in political rather than personal terms and Millennials forge a generational identity that is framed in terms of indebtedness, debt could emerge as a key issue for collective action in the future.

Acknowledgments

We thank the Editors and anonymous reviewers for their insightful comments and suggestions. An early version of this article was presented at the 2013 Annual Meeting of the *American Sociological Association* in New York City. We thank the organizers and participants in that session for useful suggestions as well. Support for this project was provided by a research grant from the National Foundation for Financial Education (NEFE). Additional support for this project provided by a seed grant from the Initiative in Population Research at the Ohio State University which is supported by a grant from the Eunice Kennedy Shriver National Institute for Child Health and Human

Development (R24-HD058484). The arguments and findings presented here are the authors' own and do not reflect positions taken or supported by NEFE or the NICHD.

Appendix A: Descriptive Statistics for Variables in Analysis

	2006	2008
Anxiety	2.077	2.119
Mortgage-holder	23%	23%
Median household income	\$20,216	\$34,930
Income decline >25%	17%	14%
Work part-time	42%	33%
Work full-time	49%	56%
Enrolled in school	12%	12%
College graduate	21%	28%
Carrying consumer debt	52%	52%
Carrying educational debt	28%	28%
Parent	32%	41%
Married	41%	50%
Female	50%	50%
Black	16%	16%
Hispanic	13%	13%
Other race	1%	1%
Age	24	26
Anxiety in 2000	2.1	2.1
<i>N</i>	5803	5982

References

- Aaronson Daniel. A Note on the Benefits of Homeownership. *Journal of Urban Economics*. 2000; 47:356–369.
- Bandelj Nina. Emotions in Economic Action and Interaction. *Theory and Society*. 2009; 38:347–366.
- Belsky Eric S. *The Dream Lives on: The Future of Homeownership in America*. Cambridge, MA: Joint Center for Housing Studies; 2013. Working Paper W11-4 ed
- Berezin Mabel. Emotions and the Economy. In: Smelser Neil J, Swedberg Richard, editors *Handbook of Economic Sociology*. 2nd. New York and Princeton: Russell Sage Foundation and Princeton University Press; 2005. 109–127.
- Bird Chloe. Gender, Household Labor, and Psychological Distress: The Impact of the Amount and Division of Housework. *Journal of Health and Social Behavior*. 1999; 40:32–45. [PubMed: 10331320]
- Bourdieu Pierre. *The Social Structures of the Economy*. Turner Chris, translator Cambridge, UK: Polity Press; 2005.
- Bostic Raphael W, Lee Kwan Ok. Homeownership: American's Dream?. In: Blank Rebecca M, Barr Michael S, editors *Insufficient Funds: Savings, Assets, Credit, and Banking Among Low-Income Households*. New York: Russell Sage Foundation; 2009.
- Bricker Jesse Bucks Brian Kennickell Arthur Mach Traci Moore Kevin. *Surveying the Aftermath of the Storm: Changes in Family Finances from 2007 to 2009*. Board of Governors of the Federal Reserve System; 2011. <http://www.federalreserve.gov/pubs/feds/2011/201117/201117pap.pdf>

- Burgard Sarah Seefeldt Kristin Zelter Sarah. Housing Instability and Health: Findings from the Michigan Recession and Recovery Survey. *Social Science and Medicine*. 2012; 75:2215–2224. [PubMed: 22981839]
- Census Bureau. Housing Vacancies and Homeownership, Historical Tables: Table 12. 2012. <http://www.census.gov/housing/hvs/data/histtabs.html> [accessed 1/25/2013]
- Crump Jeff Newman Kathe Belsky Eric Ashton Phil Kaplan David H, Hammel Daniel J, Wyly Elvin. Cities Destroyed (Again) for Cash: Forum on the U.S. Foreclosure Crisis. *Urban Geography*. 2008; 29:745–784.
- Cuijpers Pim Smits Niels Donker Tatatan Have Margreetde Graaf Ron. Screening for Mood and Anxiety Disorders with the Five-item, Three-item and Two-item Mental Health Inventory. *Psychiatry Research*. 2009; 168:250–255. [PubMed: 19185354]
- Currie Janet Tekin Erdal. Is the Foreclosure Crisis Making Us Sick?. 2011. Working Paper 17310 NBER Working Paper Series
- Davis Gerald F. After the Ownership Society: Another World is Possible. *Research in the Sociology of Organizations*. 2010; 30B:331–358.
- De Mel Suresh McKenzie David Woodruff Christopher. Mental Health Recovery and Economic Recovery after the Tsunami: High-Frequency Longitudinal Evidence from Sri Lankan Small Business Owners. *Social Science and Medicine*. 2008; 66:582–595. [PubMed: 18022300]
- Dietz Robert D, Haurin Donald R. The Social and Private Micro-level Consequences of Homeownership. *Journal of Urban Economics*. 2003; 54:401–450.
- Drentea Patricia. Age, Debt, and Anxiety. *Journal of Health and Social Behavior*. 2000; 41:437–450. [PubMed: 11198567]
- Drentea Patricia Lavrakas Paul. Over the Limit: The Association among Health, Race, and Debt. *Social Science and Medicine*. 2000; 50:517–529. [PubMed: 10641804]
- Dunn James R. Housing and Health Inequalities: Review and Prospects for Research. *Housing Studies*. 2000; 15:341–366.
- Dunn James R, Hayes Michael V. Social Inequality, Population Health, and Housing: A Study of Two Vancouver Neighborhoods. *Social Science and Medicine*. 2000; 2000:563–587.
- Dwyer Rachel E, McCloud Laura Hodson Randy. Youth Debt, Mastery, and Self-Esteem: Class-Stratified Effects of Indebtedness on Self-Concept. *Social Science Research*. 2011; 40:727–741.
- Dwyer Rachel E, McCloud Laura Hodson Randy. Debt and Graduation from American Universities. *Social Forces*. 2012; 90:1133–1155.
- Elder Glenn H, Jr. *Children of the Great Depression*. Chicago: University of Chicago; 1974.
- Ellen Ingrid Gould Dastur Samuel. Great Recession Brief. Russell Sage Foundation and The Stanford Center on Poverty and Inequality; 2012. Housing and the Great Recession. <http://www.stanford.edu/group/recessiontrends/cgi-bin/web/research-areas/housing> [Accessed 4/1/2013]
- Eshbaugh Elaine M. Perceptions of Family Relationships and Depressive Symptoms in Adolescents: What Roles Do Parents and Gender Play? *Journal of Child and Family Studies*. 2008; 17:127–139.
- Fligstein Neil Goldstein Adam. A Long Strange Trip: The State and Mortgage Securitization. In: Knorr Cetina K, Preda A, editors *The Oxford Handbook of the Sociology of Finance*. Oxford: 2012.
- Fligstein Neil Goldstein Adam. The Emergence of a Finance Culture in American Households, 1989–2007. *Socio-Economic Review Advance*. 2015. Access available online at <http://ser.oxfordjournals.org/content/early/2015/02/17/ser.mwu035.abstract>
- Gitlin Todd. Postoccupied. *The Sociological Quarterly*. 2013; 54:226–228.
- Grusky David B, Western Bruce Wimer Christopher, editors *The Great Recession*. New York: Russell Sage Foundation; 2011.
- Rona-Tas Akos Guseva Alya. *Plastic Money: Constructing Markets for Credit Cards in Eight Postcommunity Countries*. Redwood City, CA: Stanford University Press; 2014.
- Hacker Jacob S. *The Great Risk Shift: The Assault on American Jobs, Families, Health Care, and Retirement*. Oxford: Oxford University Press; 2006.
- Halaby Charles N. Panel Models in Sociological Research: Theory into Practice. *Annual Review of Sociology*. 2004; 30:507–544.

- Hanna Sherman D, Yuh YoonkyngChatterjee Swarn. The Increasing Financial Obligations Burden of US Households: Who is Affected? *International Journal of Consumer Studies*. 2012; 36:588–594.
- Hart Research Associates. *How Housing Matters: Americans' Attitudes Transformed by the Housing Crisis and Changing Lifestyles*. Washington, DC: MacArthur Foundation; 2013.
- Haurin Donald R, Parcel Toby L, Jean Haurin R. Does Homeownership Affect Child Outcomes? *Real Estate Economics*. 2002; 30:635–666.
- Heflin ColleenSandberg JohnRafail Patrick. The Structure of Material Hardship in U.S. Households: An Examination of the Coherence behind Common Measures of Well-Being. *Social Problems*. 2009; 56:746–764.
- Houle Jason. Disparities in Debt: Socioeconomic Resources and Young Adult Student Loan Debt. *Sociology of Education*. 2013; 87:53–69.
- Houle Jason. Mental Health in the Foreclosure Crisis. *Social Science & Medicine*. 2014; 118:1–8. [PubMed: 25084488]
- Houle JasonLight Michael. The Home Foreclosure Crisis and Rising Suicide Rates, 2005-2010. *American Journal of Public Health*. 2014; 104:1073–1079. [PubMed: 24825209]
- Howard Christopher R. *The Hidden Welfare State: Tax Expenditures and Social Policy in the United States*. Princeton, NJ: Princeton University Press; 1999.
- Immergluck Dan. *Foreclosed: High-Risk Lending, Deregulation, and the Undermining of America's Mortgage Market*. Ithaca, NY: Cornell University Press; 2009.
- JCHS (Joint Center for Housing Studies of Harvard University). *State of the Nation's Housing 2012*. Harvard University; Cambridge, MA: 2012.
- Kalousova LucieBurgard Sarah A. Debt and Foregone Medical Care. *Journal of Health and Social Behavior*. 2013; 54:203–219.
- Keyes Corey LM. The Black-White Paradox in Health: Flourishing in the Face of Social Inequality and Discrimination. *Journal of Personality*. 2009; 77:1677–1705. [PubMed: 19796064]
- Keister Lisa. *Wealth in America*. Cambridge, UK: Cambridge University Press; 2000.
- Krippner Greta. *Capitalizing on Crisis: The Political Origins of the Rise of Finance*. Cambridge, MA: Harvard University Press; 2011.
- Lam JackFan WenMoen Phyllis. Is Insecurity Worse for Well-being in Turbulent Times? *Mental Health in Context. Society and Mental Health*. 2013; 3
- Leicht Kevin T, Fitzgerald Scott T. *Postindustrial Peasants: The Illusion of Middle-Class Prosperity*. New York: Worth; 2006.
- Leonhardt David. A Word of Advice during a Housing Slump: Rent. *The New York Times*. 2007 April 11, 2007.
- Lindblad Mark R, Quercia Roberto G. Why is Homeownership Associated with Nonfinancial Benefits? A Path Analysis of Competing Mechanisms. *Housing Policy Debate*. 2014:1–26.
- Lounsbury MichaelHirsch Paul. *Markets on Trial: The Economic Sociology of the US Financial Crisis*. New York, NY: Emerald Press/Mcmillan; 2010. Vol 30B of *Research in the Sociology of Organizations*
- Manturuk KimRiley SarahRatcliffe Janneke. Perception vs. Reality: The Relationship between Low-Income Homeownership, Perceived Financial Stress, and Financial Hardship. *Social Science Research*. 2012; 41:276–286. [PubMed: 23017751]
- Manturuk Kim. Urban Homeownership and Mental Health: Mediating Effect of Perceived Sense of Control. *City & Community*. 2012; 11:409–430.
- Manturuk Kim. *Erasing the Advantage: Homeownership and the Impact of Financial Hardship on Health for Lower-Income Americans*. UNC Center for Community Capital; 2013. Working paper
- Manturuk KimLindblad Mark R, Quercia Roberto G. Homeownership and Sense of Control During Economic Recession: A Propensity Score Analysis. UNC Center for Community Capital; 2010. Working paper
- McInerney MelissaMellow Jennifer M, Hersch Nicholas Lauren. Recession Depression: Mental Health Effects of the 2008 Stock Market Crash. *Journal of Health Economics*. 2013; 32:1090–1104. [PubMed: 24113241]

- McCloud Laura Dwyer Rachel E. The Fragile American: Hardship and Financial Troubles in the 21st Century. *The Sociological Quarterly*. 2011; 52:13–35.
- Mirowsky John Ross Catherine. "Economic Hardship across the Life Course. *American Sociological Review*. 1999; 64:548–69.
- Mortimer Jeylan T. *Working and Growing up in America*. Cambridge, MA: Harvard University Press; 2003.
- Moschis George P. Life Course Perspectives on Consumer Behavior. *Journal of the Academy of Marketing Science*. 2007; 35:295–307.
- NBER (National Bureau of Economic Research). *Business Cycles*. 2012
- Nettleton Sarah Burrows Roger. Mortgage Debt, Insecure Homeownership and Health: An Exploratory Analysis. *Sociology of Health and Illness*. 1998; 20:731–753.
- Newman Katherine. *The Accordion Family: Boomerang Kids, Anxious Parents, and the Private Toll of Global Competition*. Boston, MA: Beacon Press; 2012.
- Oreopoulos Philip von Wachter Till Heisz Andrew. The Short- and Long-Term Career Effects of Graduating in a Recession. *American Economic Journal: Applied Economics*. 2012; 4:1–29.
- Peñaloza Lisa Barnhart Michelle. Living U.S. Capitalism: The Normalization of Debt. *Journal of Consumer Research*. 2011; 38:743–762.
- Pendall Rolf Freiman Lesley Myers Dowell Hepp Selma. *Demographic Challenges and Opportunities for US Housing Markets*. Washington D.C.: Bipartisan Policy Center; 2012.
- Pixley Jocelyn. *Emotions in Finance: Booms, Busts and Uncertainty*. Cambridge, United Kingdom: Cambridge University Press; 2004.
- Pfeffer Fabian T, Danziger Sheldon Schoeni Robert F. Wealth Disparities Before and After the Great Recession. *The Annals of the American Academy of Political and Social Science*. 2013; 650:98–123. [PubMed: 25332508]
- Pollack Craig Evan Lynch Julia. Health Status of People Undergoing Foreclosure in the Philadelphia Region. *American Journal of Public Health*. 2009; 99:1833–1839. [PubMed: 19696373]
- Pollack Craig Evan Ann Griffin Beth Lynch Julia. Housing Affordability and Health among Homeowners and Renters. *American Journal of Preventive Health*. 2010; 39:515–521.
- Pollack Craig Evan Kurd Shanu K, Livshits Alice. A Case-Control Study of Home Foreclosure, Health Conditions, and Health Care Utilization. *Journal of Urban Health*. 2011; 88:469–478. [PubMed: 21491152]
- Qian Zhenchao. *During the Great Recession, More Young Adults Lived with Parents*. Providence, RI: Brown University US2012 Project; 2012.
- Rohe William M, Stegman Michael A. The Effects of Homeownership on the Self-Esteem, Perceived Control, and Satisfaction of Low-Income People. *Journal of the American Planning Association*. 1994; 60:173–84.
- Rohe William M, van Zandt Shannon McCarthy George. Homeownership and Access to Opportunity. *Housing Studies*. 2002; 17:51–61.
- Rohe William M, Lindblad Mark. *Reexamining the Social Benefits of Homeownership after the Housing Crisis*. Harvard Joint Center for Housing Studies Working Paper; 2013. Copyright, William M. Rohe and Mark Lindblad
- Ross Lauren M, Squires Gregory D. The Personal Costs of Subprime Lending and the Foreclosure Crisis: A Matter of Trust, Insecurity, and Institutional Deception. *Social Science Quarterly*. 2011; 92:140–163.
- Rumpf Hans-Juergen Meyer Christian Hapke Ulfert Ulrich John. Screening for Mental Health: Validity of the MHI-5 using DSM-IV Axis 1 Psychiatric Disorders as Gold Standard. *Psychiatry Research*. 2001; 105:243–253. [PubMed: 11814543]
- Ryder Norman B. The Cohort as a Concept in the Study of Social Change. *American Sociological Review*. 1965; 30:843–861. [PubMed: 5846306]
- Sampson RJ. Moving to Inequality: Neighborhood Effects and Experiments Meet Social Structure. *American Journal of Sociology*. 2008; 114:189–231.
- Saunders Peter. *A Nation of Home Owners*. London: Unwin Hyman; 1990.

- Sharone Ofer. Constructing Unemployed Job Seekers as Professional Workers: The Depoliticizing Work-Game of Job Searching. *Qualitative Sociology*. 2007; 30:403–416.
- Squires Gregory D, Hyra Derek S. Foreclosures—Yesterday, Today, and Tomorrow. *City & Community*. 2010; 9:50–60.
- Sweet ElizabethNandi ArijitAdam EmmaMcDade Thomas. The High Price of Debt: Household Financial Debt and its Impact on Mental and Physical Health. *Social Science and Medicine*. 2013; 91:94–100. [PubMed: 23849243]
- Taylor PaulParker KimKochlar RakeshWant WendyVelasco GabrielDockterman Daniel. Home Sweet Home Still Five Years after the Bubble Burst. Washington D.C.: Pew Research Center; 2011.
- Van der Zwan Natascha. Making Sense of Financialization. *Socio-Economic Review*. 2014; 12:99–129.
- Ware John E, Donald Sherbourne Cathy. The MOS 36-item Short-Form Health Survey (SF-36). *Medical Care*. 1992; 30:473–483. [PubMed: 1593914]
- Warren ElizabethWarren Tyagi Amelia. *The Two Income Trap: Why Middle-Class Mothers and Fathers are Going Broke*. New York: Basic Books; 2003.
- Waters Mary C, Carr Patrick J, Kefalas Maria J, Holdaway Jennifer, editors*Coming of Age in America: The Transition to Adulthood in the Twenty-First Century*. Berkeley and Los Angeles: University of California Press; 2011.
- Weber Max. *Economy and Society*. Roth GuentherWittich Claus, editorsNew York: Bedminster; 1968 [1921].
- Wiley Norbert. America's Unique Class Politics: The Interplay of the Labor, Credit, and Commodity Markets. *American Sociological Review*. 1967; 32:529–41.
- Williams RichardNesiba ReynoldDiaz McConnell Eileen. The Changing Face of Inequality in Home Mortgage Lending. *Social Problems*. 2005; 52:181–208.
- Yamazaki ShinFukuhara ShunichiGreen Joseph. Usefulness of Five-Item and Three-Item Mental Health Inventories to Screen for Depressive Symptoms in the General Population of Japan. *Health and Quality of Life Outcomes*. 2005; 3:48–55. [PubMed: 16083512]
- Young Cristobal. Losing a Job: The Nonpecuniary Cost of Unemployment in the United States. *Social Forces*. 2012; 91:609–634.
- Zavisca Jane. *Housing the New Russia*. Ithaca, NY: Cornell University Press; 2012.
- Zelizer Viviana A. *The Social Meaning of Money: Pin Money, Paychecks, Poor Relief and Other Currencies*. New York: Basic; 1994.
- Zelizer Viviana A. *The Purchase of Intimacy*. Princeton, NJ: Princeton University Press; 2007.
- Zillow. Zillow Negative Equity Report. 2012. <http://www.zillowblog.com/research/2012/08/22/negative-equity-declines-slightly-on-the-back-of-modest-home-value-gains/>
- Zuckerman Ezra. Construction, Concentration, and (Dis)Continuities in Social Valuations. *Annual Review of Sociology*. 2012; 38:223–245.

Figure 1. Percent of Young Homeowners Reporting Being Underwater on Home Mortgage, 2000-2009

Source: Authors' analysis of National Longitudinal Survey of Youth, 1997 Cohort

Figure 2. Selected coefficients from the OLS regression of anxiety on mortgage debt

Note: Coefficients from Model 2 (with controls) in Table 1. All coefficients reported in the figure are significant at $p < 0.05$.

Table 1

OLS regression of anxiety on mortgage debt

	Best model	With controls
Mortgage	-0.055 ** (0.017)	-0.053 ** (0.017)
Recession	0.042 *** (0.010)	0.050 *** (0.012)
Recession * Mortgage	0.040 * (0.018)	0.042 * (0.019)
Household income, logged		-0.005 * (0.002)
Income decline >25%		-0.009 (0.015)
Work part-time		-0.011 (0.021)
Work full-time		-0.038 (0.021)
Enrolled in college		-0.034 * (0.017)
College graduate		-0.013 (0.015)
Carrying consumer debt		0.048 *** (0.012)
Carrying educational debt		-0.007 (0.014)
Duration since reported homeownership		-0.004 (0.005)
Parent		0.031 * (0.013)
Married		-0.039 ** (0.013)
Female		0.119 *** (0.012)
Black		-0.115 *** (0.015)
Hispanic		-0.074 *** (0.015)
Other race		-0.004 (0.058)
Age		0.001 (0.004)
Anxiety in 2000		0.301 *** (0.011)
Constant	2.065 *** (0.009)	1.410 *** (0.101)
R ²	0.00	0.14
N	11,785	11,785

*
 $p < 0.05$;

**
 $p < 0.01$;

 $p < 0.001$

Source: National Longitudinal Survey of Youth, 1997 Cohort

Notes: Standard errors in parentheses.

Table 2

OLS regression of anxiety on mortgage debt

	Anxious
Mortgage	-0.056 ** (0.017)
Recession	0.050 *** (0.012)
Recession * Mortgage (<i>same controls as Table 1, omitted</i>)	0.045 * (0.022)
Underwater	-0.006 (0.027)
Late on housing payments 2007-2008	0.089 ** (0.034)
_cons	1.407 *** (0.101)
R^2	0.14
N	11,785

*
 $p < 0.05$;**
 $p < 0.01$;***
 $p < 0.001$

Source: National Longitudinal Survey of Youth, 1997 Cohort Notes: Standard errors in parentheses.