Getting Sick and Falling Behind:
Health and the Risk of Mortgage Default and Home Foreclosure

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Abstract

Recent studies suggest that poor health may be an important predictor of mortgage default and home foreclosure. However, to date no longitudinal, national research has examined this association. We expand on existing work by using nationally representative longitudinal data from the NLSY-79 to examine the relationship between becoming ill and the risk of mortgage default and foreclosure among middle-aged adults. We find that worsening health, as measured by changes in health limitations and chronic conditions, significantly increases the risk of mortgage default, expectation of mortgage default, and home foreclosure between 2007 and 2010. We find that these associations are partially mediated by changes in family income and loss of health insurance. From a policy perspective, the strong link between poor health and foreclosure suggests a need to reexamine the safety-nets that are available to individuals who become ill or disabled.

Introduction

In 2007, following decades of increasingly risky borrowing practices, defaults in the sub-prime mortgage market resulted in the worst economic collapse in the U.S. since the Great Depression. The housing market crash of 2007 led to a historically unprecedented rise in home foreclosures—from around 650,000 in 2007 to a record 2.9 million homes in 2010, when more than 2% of all US homes received a foreclosure notice (RealtyTrac 2010). The rise in foreclosures from 2007 through 2010 has been most widely attributed to irresponsible financial practices on the part of both lenders and borrowers (Robertson, Egelhof, and Hoke 2008). In particular, deregulation of the banking industry and the rise of subprime and predatory lending have been well-documented causes of the foreclosure crisis (Been, Chan, Ellen, and Madar 2011; Doms, Furlong, and Krainer 2007; Fligstein and Goldstein 2011; Gerardi, Shapiro, and Willen 2009; Hyman 2011; Immergluck 2008). Likewise, the rise in foreclosures can be partially attributed to recession related job loss (Been et al. 2011; Foote, Gerardi, and Willen 2008). However, some research also suggests that poor health and inadequate health-care may also play an important role in the foreclosure crisis (Pollack et al. 2011; Pollack and Lynch 2009). However, no longitudinal, national research has addressed how poor health influences the risk of home foreclosure and default. This study builds on the emerging literature of health and foreclosure and examines the relationship between health, becoming ill, and the risk of mortgage default and foreclosure using data from a nationally representative longitudinal study of adults who were in middle age at the peak of the housing crisis.

Background

Over the past several decades, rising health care costs have led families to devote an increasing proportion of their income to medical care (Auerbach and Kellerman 2011). Previous studies have pointed to both poor health and inadequate health-care coverage as a major cause of debt, financial strain and personal bankruptcy in the United States (Himmelstein, Thorne, Warren, and Woolhandler 2009; Jacoby, Sullivan, and Warren 2001; Jacoby and Warren 2006; Zeldin and Rukavina 2007). Moreover, this research shows that the vast majority of medically related bankruptcy cases occurred among those who had health insurance, but still struggled to pay uncovered expenses and often suffered a loss of income due to illness and disability (Jacoby et al. 2001). However, as Robertson et al (2008) note, because bankruptcy is a voluntary process, mortgage default, and especially foreclosure, may better capture the extent to which medical problems can be financially devastating.

While there is a significant literature on the medical causes of debt and financial strain, very few studies have examined poor health as a predictor of mortgage default or home foreclosure. In one survey of Philadelphia homeowners facing foreclosure, Pollack and Lynch (2009) find that only 9% cite illness or medical costs as the primary reason for being behind on mortgage payments. However, qualitative research suggests that the causes of mortgage default and foreclosure are often multifactorial (Libman, Fields, and Saegert 2011; Saegert, Fields, and Libman 2009) . Poor health and health care costs may intersect with other events and circumstances to produce financial strain. For example, in the context of recession related lay-offs, workers who are less able-bodied may be the first to be laid off. Likewise, loss of a job could lead to loss of health insurance, and thus an increase in health care costs and medical debt among those who are less healthy. While in both of these cases, health may not be cited as a

primary cause of foreclosure, it plays a significant role. Indeed, a small survey of distressed homeowners in 4 states finds that when respondents are allowed to list all of the factors that contributed to their current mortgage troubles, nearly half cite personal illness or illness of a family member, medical bills or loss of work due to illness and injury (Robertson et al. 2008). While this study was extremely small (N=128) with a low response rate (7%) it is suggestive of a strong relationship between poor health and foreclosure.

In addition to surveys that inquire about the causes of mortgage default, Pollack and colleagues (2011) use hospital administrative data to compare the prevalence of chronic conditions, psychiatric conditions and overall poor health among those who are facing foreclosure and a comparison sample of homeowners and renters in a single geographic area. While they find that some health conditions are more prevalent among those facing foreclosure than in the comparison group, their study is limited to those who were admitted to a hospital in a single geographic area. In addition, the study lacked controls for many confounders that may explain the link between poor health and foreclosure.

Our study builds on this existing work by using nationally representative longitudinal data from the National Longitudinal Survey of Youth 1979 Cohort (NLSY-79) to examine how chronic conditions and health limitations predict mortgage default and foreclosure among middle-aged adults. The NLSY-79 is an ideal dataset to address this question because it includes contains detailed information on personal finances, health insurance status, and sociodemographic characteristics over time, which gives us the unique ability to adjust for many potential confounders of the relationship between poor health and foreclosure and to examine mediating pathways. Moreover, because most respondents were in middle age during the peak of

the housing crisis, there a high proportion of respondents were homeowners and at the age where chronic conditions and health limitations are on the rise.

In this study, we ask how becoming ill—as measured by deteriorating health status across survey waves—is associated with the risk of home mortgage default and foreclosure. In doing so, we control for previous health status, and a range of sociodemographic confounders to increase confidence in the effect of poor health on default and foreclosure. Finally, we test potential mechanisms that may link poor health and default and foreclosure. We hypothesize that getting sick precipitates a loss of employment, income, and health insurance, which may explain why those who become ill have a high risk of default and foreclosure. We further hypothesize that because those who become sick struggle to deal with high medical costs while trying to keep up with their mortgages, that declines in savings and increases in consumer debt may also play a role in mediating the link between becoming ill and risk of default and foreclosure.

Data and Methods

Data for this study are drawn from the National Longitudinal Survey of Youth 1979 Cohort (NLSY-79). The NLSY-79 is a nationally representative sample of 12,686 young men and women who were between the ages of 14-22 in 1979. NLSY-79 Respondents were interviewed annually until 1994, and have been interviewed biannually ever since. Analysis of NLSY-79 data is limited to respondents who had owned a home between 2007-2010 (N=4,971) and had valid information on all covariates of study (N=4,307). For analyses of chronic conditions, analyses were further limited to respondents who have reached the required age to complete the 50+ health survey (N=2,387, N=2044 after listwise deletion).

Health Conditions

Health Limitations: Participants were surveyed about health limitations on a biannual basis (e.g. 2004, 2006, 2008). At each survey wave, respondents were asked whether or not they had a health limitation that could prevent the amount or type of work they can do (1=yes). This measure is widely used as a proxy for disability or illness. Baseline health is measured by a dichotomous indicator of health limitations in 2006 (1=reports health limitation; 0 otherwise). To measure change in health we constructed a dichotomous indicator of whether health limitations worsened (1=yes) between 2006-2008 survey waves (e.g. respondents did not report a health limitation in 2006 but did in 2008).

Chronic Conditions: Respondents were asked about life threatening and disabling chronic conditions in the 40-plus and 50-plus health modules, which were administered in a survey year following the respondent's 40^{th} and 50^{th} birthdays, respectively. To measure baseline health, we constructed a measure of the count of the number of chronic conditions reported by respondents in the 40+ survey. To measure change in chronic health conditions over time, we constructed a dichotomous indicator of whether respondents' reported more chronic conditions in the 50+ survey than in the 40+ survey (1=yes). Chronic conditions measured in both survey waves include: cardiovascular disease and heart failure, lung disease, stroke, cancer, diabetes, hypertension, arthritis, asthma, joint pain, and osteoporosis.

Mortgage Default and Foreclosure

In 2010, the NLSY-79 included survey items about mortgage default and foreclosure that were asked to respondents that owned a home in the past three years. Respondents were asked about whether they had experienced default in the past three years, were at risk of defaulting in the next 6 months, or had their home foreclosed on in the past three years. From these items we

created two dichotomous measures of default and foreclosure. The measure of default is a dichotomous indicator of whether or not respondents had experienced a default or reported that it was "very likely" that they would default in the next six months (1=yes). Foreclosure is a dichotomous indicator of whether or not respondents went through foreclosure in the past three years (1=yes).

Sociodemographic Confounders and Mediators

We control for a range of confounders that are likely correlated with both health and mortgage default and foreclosure. We measure these confounders at the survey year at which baseline health is measured. These include: race (white [referent], black, other), marital status (married [referent], never married, divorced/separated), educational attainment (less than or equal to high school degree [referent], some college, 4-year college degree or more), family size, sex (male=1), and age (in years). We also account for financial characteristics at baseline, including the amount of respondents' home mortgage debt, home value, consumer debt (e.g. credit card and medical debt), savings, and family income. All variables are coded in constant 2010 thousands of dollars. Finally, we account for the number of months unemployed in the baseline survey year and health insurance status (1=has health insurance; 0=no health insurance).

We also consider potential mediators of the association between change in health status and default/foreclosure. These variables are measured to reflect changes in circumstances between baseline survey wave and the 2008 survey wave. These include: changes in family income, savings, and consumer debt (all measured in constant 2010 thousands of dollars), loss of health insurance (1=yes), and number of months unemployed between survey waves.

Analysis Strategy

We estimate a series of weighted logistic regression models to examine the association between changes in health conditions and default and foreclosure. Table 3 shows results for changes in health limitations, while Table 4 shows results for changes in chronic conditions. For each outcome, we estimate a series of three models. Model 1 shows the association between health change and default/foreclosure, net of baseline health conditions and sociodemographic confounders. Model 2 adds baseline health insurance status, family income, savings, consumer debt, and number of months unemployed. Finally, Model 3 adds mechanisms that are expected to explain the link between health change and default/foreclosure, including changes in income, savings, debt, employment status, and loss of health insurance between survey waves.

Results

Descriptive Statistics and Bivariate Analyses

Table 1 shows weighted descriptive statistics for all study variables. As shown in Table 1, 11% of respondents reported that they defaulted on their mortgage or were at high risk of defaulting in the next six months, and 3% of respondents experienced a home foreclosure in the preceding three years. Although the percentage of respondents who go through home foreclosure is relatively small, this figure is similar to national estimates that 2-3% of all US homes went into foreclosure during the peak of the crisis (RealtyTrac 2010). In addition, 11% of respondents reported at baseline that their health limited the amount of work they could do, while 4% reported that their health worsened over time (health was not limited at baseline, but was limited at follow-up). In the 40+ health survey, respondents reported less than 1 chronic condition, on average, while 58% of respondents reported more chronic conditions in the 50+ health survey than they did in the 40+ health survey.

Table 2 shows the bivariate association between health and mortgage default/foreclosure. Panel A shows the percentage of respondents who reported a default or foreclosure by whether or not they reported health limitations, while Panel B shows the percentage of respondents reporting a default or foreclosure by the number of chronic conditions reported in the 40 and 50 plus health modules. As shown in Panel A, respondents whose health declined over time, or reported poor health at both waves, were more likely to default or foreclose on their home than those who reported no health limitations at either wave. Approximately 10% of respondents who had no health limitations defaulted on their mortgage, while almost 20% of those whose health diminished over time, and 17% of those who reported poor health at both waves defaulted on their mortgage. Similarly, 2.7% of those with no health limitations experienced a home foreclosure, compared to 7.5% of respondents whose health diminished over time, and 5.3% of those who reported poor health at both waves.

Panel B shows a similar pattern of findings for chronic conditions and mortgage default and foreclosure. In both the 40+ and 50+ health modules, respondents with more chronic conditions were more likely to report default or foreclosure than respondents with fewer or no chronic conditions. Moreover, changes in chronic conditions and default/foreclosure are also linked. 13.7% of respondents whose chronic conditions increase over time defaulted on their mortgage, while 7% of respondents whose chronic conditions do not increase over time defaulted on their mortgage. This pattern is similar for home foreclosure. These bivariate analyses support the findings of prior research (Pollack et al. 2011; Pollack and Lynch 2009; Robertson, Egelhof, and Hoke 2008) and provide preliminary evidence that poor health influences the risk of foreclosure. We now turn to the multivariate analyses and examine whether this association persists net of confounders, as well as examine possible mediators.

Multivariate Models

Table 3 shows results from multivariate logistic regression models estimating the association between changes and health limitations and home mortgage default (panel a) and foreclosure (panel b). As shown in Model 1a, respondents whose health worsens over time have approximately 1.7 times the risk of default than those whose health did not worsen over time (odds ratio: 1.687, *p<.05),* net of baseline health and sociodemographic confounders. The association persists though is attenuated slightly after accounting for employment, health insurance status, savings, family income, and consumer debt at baseline. In Model 3, the association is reduced to nonsignificance, though remains positive, after accounting for potential mediators. We conducted a Sobel-Goodman mediation test, and found that changes in family income and loss of health insurance were the strongest mediating factors of the association between worsening health and risk of default.

Panel B of Table 3 shows a similar pattern of findings. Net of baseline sociodemographic confounders and health status, respondents whose health worsens over time have over 2.5 times the risk of foreclosure than those whose health does not worsen (Model 1b OR: 2.744; p<.01; Model 2b OR: 2.699; p<.01). In Model 3, the mediating variables partially explained the association between worsening health and foreclosure, though the association remained statistically significant (OR: 2.287; p<.05). Similar to the findings in Panel A, we found that changes in family income and loss of health insurance were the strongest mediating factors of the association between worsening health and foreclosure.

Table 4 shows results from multivariate logistic regression models estimating the association between changes and the number of chronic conditions reported over time and home mortgage default (panel a) and foreclosure (panel b). As shown in Models 1a and 2a, the

association between worsening health and default persists after adjusting for baseline health and a range of sociodemographic confounders. Net of confounders, respondents whose reported number of chronic conditions increased over time have nearly twice the odds of default than those who did not report increased chronic conditions (Model 2a: OR: 1.930, p<.001). As shown in Model 3, the hypothesized mediating variables explain a relatively small proportion of the association, though a Sobel-Goodman mediation test reveals that loss of health insurance and declines in family income mediate the largest percentage of the association. A similar pattern of findings is shown in panel B for home foreclosure. Net of sociodemographic characteristics, respondents' whose chronic conditions worsen over time have 2.5 times the odds of experiencing a home foreclosure than their healthier counterparts (Model 2b OR: 2.589, p<.01). This effect is partially mediated by the hypothesized changes in family income, which according to a Sobel-Goodman mediation test accounts for 2.5% of the total effect of chronic conditions on foreclosure.

In sum, the findings from table 3 and 4 reveal that worsening health, measured both by a single item measure of health limitations and the number of chronic conditions, is associated with an increased risk of default and foreclosure, net of a broad range of sociodemographic confounders. Moreover, the association is partially mediated by family income and loss of health insurance, suggesting that worsening health is associated with a higher risk of default and foreclosure in part because of declines in family income and loss of health insurance.

Supplementary analyses

We conducted several additional analyses to check the robustness of our findings. First, although we examine changes in health that are likely to occur prior to foreclosure, there is some chance that the changes in health may have occurred after default or foreclosure. For example,

we measure changes in health limitations from 2006-2008, but foreclosure or default could have occurred anytime between 2007 and 2010. The slight time overlap raises questions about causal ordering of health and foreclosure. Moreover, the 50+ health module was conducted in 2008 and 2010, and therefore changes in health conditions may have also occurred after default or foreclosure. To remedy this issue, we conduct several additional analyses. First, we examined the association of changes in health with respondents' assessed risk of default in the six months following the 2010 survey wave (rather than actual default), to ensure the correct time ordering. Second, we examined changes in health conditions from 2004-2006 (rather than 2006-2008), again to ensure correct time ordering. Finally, because the stress associated with foreclosure may contribute to psychological distress and poor health (Alley et al. 2011; Burgard et al. 2012; McLaughlin et al. 2012; Osypuk et al. 2012), we limited our analyses of chronic conditions to life threatening chronic conditions that are unlikely to be triggered by short term stress in reaction to a foreclosure. These include conditions such as as lung disease and cancer, while omitting conditions such as hypertension which may be triggered by stress related to a mortgage default of foreclosure. Across all of these supplementary models, the results were statistically and substantively similar to the results presented here.

We also estimated several models testing whether the effect of worsening health on default and foreclosure is greater for some groups than others. Specifically, we hypothesized that the effect of health might be greater for those who are financially vulnerable (e.g. low SES, low savings, unemployed, no health insurance) and racial minorities. However, we found no consistent pattern of interaction effects across health measures and outcomes.

Discussion

Recent research suggests that poor health is a significant contributor to the foreclosure crisis (Robertson et al 2008; Lynch and Pollack 2009). The findings of this study support this work in pointing to the medical causes of foreclosure that have been largely disregarded by a 'standard account' (Robertson et al 2008) of the mortgage crisis that has focused almost exclusively on the banking industry. Our findings also increase confidence in the effect of ill health on default and foreclosure by using nationally representative data, measuring changes in health over time, and accounting for a range of potential confounders.

The findings of this study show that worsening health, as measured by changes in health limitations from 2006-2008 and changes in chronic conditions from the age of 40-50 significantly increases the risk of default and home foreclosure between 2007-2010. The association persists net of potential confounders, such as educational attainment, marital status, race, gender, and baseline measures of home values, home debt, consumer debt and income. The association is partially mediated (though not fully explained) by changes in family income and loss of health insurance. This suggests that those who get sick have a higher risk of foreclosure in default, in part because they are at high risk of declines in family income and loss of health insurance.

Although our study builds on prior research and has several strengths, there are also some limitations to consider. First, as noted above, there are some issues with potential time ordering problems of health changes and foreclosure. However, while illness observed prior to foreclosure could result from the ongoing strain of an often lengthy mortgage repossession process, our ability to look at events that precede foreclosure—both mortgage default and an individual's expectation that he or she may default in the near future—and our inclusion range of baseline

sociodemographic confounders help to address this concern. Additionally, while foreclosure and default may cause health problems such as psychological strain and distress (Alley et al. 2011), it is unlikely that foreclosure or default are a major cause of changes in the types of physical and functional health conditions (e.g. cancer, disability) that we measure in this study given the short time lag between the measurement of these health conditions and default or foreclosure.

An additional limitation to this study is that we know little about loan characteristics of the respondents in the study. For example, those with subprime loans have the highest likelihood of default and foreclosure, and these mortgage holders may also have a higher risk of poor health. Subprime mortgage holders faced unique risks during the housing crisis—such as high interest and adjustable rates, which led many to face huge unexpected increases in their monthly mortgage payments. Thus, it may be that the effect of worsening health on default and foreclosure may be particularly strong for the financially vulnerable borrowers who had to cope with the high and variable interest rates of subprime loans.

Finally, though we are able to adjust for a range of potential confounders in the association between poor health and default/foreclosure, we cannot claim causality because health and health change are endogenous. To better test for causal effects, future work may seek to examine the link between exogenous health shocks and mortgage default and foreclosure (Houle and Collins 2013).

Despite limitations, this study provides new insight on the role of health in mortgage default and foreclosure. Losing one's home to foreclosure is not only the financially damaging loss of what is, for most homeowners, their most valuable asset, but it can also be emotionally devastating (Nettleton and Burrows 2000). It can exact an enormous toll on the well-being of individual homeowners and their families, who as our study suggests, may already have

precarious health (Alley et al. 2011; Libman, Fields, and Saegert 2011; Osypuk, Caldwell, Platt, and Misra 2012). Foreclosure can also damage neighborhoods and communities, perhaps limiting the community-based resources that vulnerable households are able to draw on (Immergluck and Smith 2005; Leonard and Murdoch 2009; Saegert, Fields, and Libman 2011).

From a policy perspective, the strong link between poor health and foreclosure suggests a need to reexamine the safety-nets that are available to individuals who become ill or disabled and experience a resultant loss of income. As shown in this study, loss of income and health insurance, partially explain why those who become ill have an increased risk of defaulting and going into foreclosure. The huge financial burden associated with illness and adverse medical events also points to the need to reexamine our current system of health-care financing which leaves many Americans, even those who are insured, to bear large health care costs (Schoen, Collins, Kriss, and Doty 2008). Given the large numbers of sick individuals who are at risk of losing their homes, it may also be helpful to expand mortgage counseling programs to include resources that can help connect uninsured or under-insured borrowers to health care.

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Table 1: Descriptive Statistics

	Mean or Proportion	Range
Mortgage Default or at Risk of Default	.11	0 - 1
Home Foreclosure	.03	0 - 1
Health Conditions		
Health is Limited at Baseline	.11	0 - 1
Health Limitations Worsened Over Time	.04	0 - 1
Number of Chronic Conditions	.40	0 - 6
Chronic Conditions Worsened Over Time	.58	0 - 1
Has Health Insurance at Baseline	.91	0 - 1
Lost Health Insurance Between Survey Waves	.03	0 - 1
# Months unemployed at baseline survey year	1.06	0 - 12
# Months unemployed between survey waves	.41	0 - 24
Family Income at Baseline (thousands of dollars)	102.98	0 - 519
Δ Family Income (thousands of dollars)	-.71	-519 - 460
Savings at Baseline (thousands of dollars)	26.07	0 - 356
Δ Savings (thousands of dollars)	10.30	-356 - 589
Lagged Home Value (thousands of dollars)	175.47	0 - 1057
Lagged Home Debt (thousands of dollars)	88.66	0 - 492
Race		
White (reference)		
Black	.09	0 - 1
Other Race	.02	0 - 1
Marital Status		
Married (reference)		
Never Married	.08	0 - 1
Divorced/Separated	.15	0 - 1
Widowed	.01	0 - 1
Educational Attainment		
<= High School Degree (ref)		
College Degree or More	.33	0 - 1
Some College	.24	0 - 1
Sex (Male=1)	.50	0 - 1
Age	44.90	41 - 50
Family Size	3.18	1 - 13

Source: NLSY-79; N=4307 (N=2044 when using 40+ and 50+ health module)

Table 2: Bivariate Association Between Health Status and Default/Foreclosure

	% in Default or Foreclosure	
	Mortgage Default	Foreclosure
Panel A: Health Limitations (2006-2008; N=4307)		
No health limitations at either wave	9.93	2.72
Health diminished over time	19.58	7.56
Poor Health at Both Waves	16.95	5.27
Panel B: Chronic Conditions (40+ - 50+ Survey; N=2044)		
N Chronic Conditions, 40+ survey		
No Chronic Conditions	9.84	2.40
1-2 Conditions	13.78	5.03
3 + conditions	13.76	7.78
N Chronic Conditions, 50+ survey		
No Chronic Conditions	6.11	1.31
1-2 Conditions	13.27	4.10
3 + conditions	14.56	5.07
Change in Chronic Conditions		
N Chronic Conditions Do Not Increase over time	7.15	1.92
N Chronic Conditions Increase Over Time	13.68	4.09

Source: NLSY-79; N=4307 (N=2044 when using 40+ and 50+ health module)

Table 3: Odds Ratios from Models Predicting the Association Between Health Limitations and Mortgage Default and Home Foreclosure

	Mortgage Default			*Home Foreclosure*		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Baseline Health Limitations	1.526 *	1.515 *	1.444 *	1.556	1.421	1.296
	(.255)	(.281)	(.267)	(.436)	(.448)	(.408)
Health Worsened (2006-2008)	1.687 *	1.667 *	1.466	2.744 **	2.699 **	2.287 *
	(.408)	(.408)	(.355)	(.973)	(.954)	(.828)
Mediators (Change in Circumstances, 2006-2008)						
Lost Health Insurance (2006-2008)			2.507 ***			1.678
			(.615)			(.695)
# Months Unemployed, 2006-2008			1.026			1.050 †
			(.021)			(.029)
Δ Family Income (Thousands of Dollars)			.995 **			.993 *
			(.002)			(.003)
Δ Savings (Thousands of Dollars)			.990 †			.964 *
			(.006)			(.018)
Δ Consumer Debt (Thousands of Dollars)			1.004 *			1.004
			(.002)			(.003)
Baseline Sociodemographics and Confounders						
Has Health Insurance at Baseline		.601 **	.614 **		.556 *	.663
		(.101)	(.106)		(.150)	(.178)
Number of Months unemployed at Baseline		.981	.975		.998	.983
		(.016)	(.017)		(.026)	(.030)
Baseline Family Income (Thousands of Dollars)		.996 **	.995 ***		.997	.995 †
		(.001)	(.002)		(.002)	(.003)
Baseline Savings (Thousands of Dollars)		.997	.990 †		.994	.963 *
		(.002)	(.006)		(.006)	(.017)
Baseline Consumer Debt (Thousands of Dollars)		1.004 †	1.007 *		.999	1.001
		(.002)	(.003)		(.004)	(.005)
Lagged Home Debt (Thousands of Dollars)	1.005 ***	1.005 ***	1.005 ***	1.009 ***	1.009 ***	1.009 ***
	(.001)	(.001)	(.001)	(.002)	(.002)	(.002)
Lagged Home Value (Thousands of Dollars)	.996 ***	.997 **	.998 *	.993 ***	.994 **	.995 *
	(.001)	(.001)	(.001)	(.002)	(.002)	(.002)

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Race/Ethnicity (ref=NH white)						
Black	2.370 ***	2.366 ***	2.345 ***	2.145 ***	2.114 ***	2.037 ***
	(.281)	(.285)	(.283)	(.437)	(.444)	(.421)
Other Race	1.454	1.457	1.422	1.855	1.893	1.818
	(.366)	(.367)	(.344)	(.832)	(.847)	(.813)
Educational Attainment (ref=<=High School Degree)						
Some College	1.109	1.060	1.129	1.223	1.893	1.411
	(.128)	(.134)	(.144)	(.262)	(.847)	(.303)
College Degree or More	.459 ***	.548 ***	.628 **	.608 †	0.747	.948
	(.072)	(.091)	(.108)	(.177)	(.225)	(.292)
Marital Status (ref=married)						
Never Married	1.143	1.044	.929	.281 **	.245 **	.209 ***
	(.244)	(.224)	(.207)	(.120)	(.106)	(.091)
Divorced/Separated	1.785 ***	1.485 *	1.335 †	2.719 ***	2.329 **	1.997 **
	(.282)	(.248)	(.223)	(.673)	(.604)	(.512)
Age	.996	.998	.998	1.003	1.009	1.007
	(.024)	(.025)	(.025)	(.043)	(.044)	(.044)
Male	.885	.865	.933	1.260	1.286	1.338
	(.096)	(.096)	(.103)	(.236)	(.250)	(.259)
Family Size	1.116 **	1.114 *	1.114 *	1.114	1.102	1.094
	(.049)	(.049)	(.050)	(.077)	(.076)	(.077)
Constant	.118 †	.187	.208	.015 *	.023 †	.029 †
	(.131)	(.211)	(.236)	(.030)	(.046)	(.059)
Pseudo R-square	.06	.08	.10	.09	.10	.13

N=4307

***p<=.001; **p<=.01; *p<=.05; †p<=.10

Table 4: Odds Ratios from Models Predicting the Association Between Chronic Conditions and Mortgage Default and Home Foreclosure

	Mortgage Default			*Home Foreclosure*		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Baseline Number of Chronic Conditions	1.075	1.046	1.030	1.323 *	1.311 *	1.194
	(.097)	(.095)	(.100)	(.162)	(.178)	(.177)
Chronic Conditions Worsened Over Time	1.982 ***	1.930 ***	1.880 ***	2.523 **	2.589 **	2.497 **
	(.358)	(.353)	(.345)	(.865)	(.864)	(.842)
Mediators (Change between survey waves)						
Lost Health Insurance			2.206 *			.647
			(.765)			(.396)
# Months Unemployed			.995			1.001
			(.004)			(.007)
Δ Family Income (Thousands of Dollars)			.993 *			.984 ***
			(.003)			(.004)
Δ Savings (Thousands of Dollars)			.995			.978
			(.005)			(.016)
Δ Consumer Debt (Thousands of Dollars)			1.004 †			1.001
			(.002)			(.007)
Baseline Sociodemographics and Confounders						
Has Health Insurance at Baseline		.597 *	.618 *		.964	1.383
		(.145)	(.151)		(.426)	(.628)
Number of Months unemployed at Baseline		1.002	1.019		1.022	1.010
		(.022)	(.027)		(.041)	(.040)
Baseline Family Income (Thousands of Dollars)		.999	.994 †		1.002	.990 *
		(.002)	(.003)		(.004)	(.005)
Baseline Savings (Thousands of Dollars)		.994	.991		.998	.978
		(.004)	(.006)		(.004)	(.017)
Baseline Consumer Debt (Thousands of Dollars)		1.005	1.008 †		.997	1.001
		(.003)	(.004)		(.006)	(.007)
Lagged Home Debt (Thousands of Dollars)	1.004 *	1.004 *	1.005 *	1.010 **	1.009 **	1.012 **
	(.002)	(.002)	(.002)	(.003)	(.003)	(.004)
Lagged Home Value (Thousands of Dollars)	.995 ***	.996 **	.996 **	.991 ***	.990 **	.991 **
	(.001)	(.001)	(.001)	(.003)	(.003)	(.004)

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Race/Ethnicity (ref=NH white)						
Black	2.269 ***	2.268 ***	2.255 ***	2.222 **	2.219 **	2.153 *
	(.383)	(.384)	(.386)	(.676)	(.678)	(.665)
Other Race	1.782	1.731	1.721	3.277 *	3.412 *	3.366 †
	(.676)	(.659)	(.679)	(1.981)	(2.074)	(2.247)
Educational Attainment (ref=<=High School Degree)						
Some College	.988	1.055	1.131	1.938 *	1.951 *	2.275 **
	(.178)	(.193)	(.211)	(.600)	(.595)	(.710)
College Degree or More	.468 **	.541 *	.652	.835	.803	1.266
	(.112)	(.134)	(.175)	(.394)	(.376)	(.583)
Marital Status (ref=married)						
Never Married	.973	.879	.748	.388	.405	.277 *
	(.320)	(.298)	(.260)	(.248)	(.256)	(.179)
Divorced/Separated	1.817 **	1.799 **	1.374	3.242 ***	3.341 ***	2.059 *
	(.398)	(.393)	(.317)	(1.067)	(1.101)	(.665)
Age	1.048	1.051	1.023	.972	.966	.966
	(.079)	(.082)	(.082)	(.121)	(.116)	(.120)
Male	.845	.856	.855	1.080	1.091	1.196
	(.137)	(.144)	(.146)	(.310)	(.309)	(.341)
Family Size	1.103	1.117 †	1.127 †	1.161	1.152	1.118
	(.071)	(.073)	(.075)	(.111)	(.114)	(.113)
Constant	.012	.016	.065	.024	.028	.055
	(.037)	(.052)	(.213)	(.119)	(.135)	(.273)
Pseudo R-square	.08	.09	.12	.13	.14	.19

N=2044
***p<=.001; **p<=.01; *p<=.05; †p<=.10