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The impact of diminished housing wealth on health in the United States: Evidence from the Great Recession

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ABSTRACT

The sharp decline in home values in many industrialized and developing countries was one of the most evident facets of the global economic recession of 2008. Using data from the Panel Study of Income Dynamics (PSID) for 2007–2011, this study examines how the decline in housing wealth affected the psychological and physical health and health-related behaviors of 4007 U.S. households who were homeowners in 2007. We focus on two mechanisms that could account for how the drop in housing wealth affects health: increase in stress and negative changes in health-related behaviors. Controlling for the changes in non-housing wealth and employment status during the recession, the decline in housing wealth is associated with a small but statistically significant increase in psychological distress. Psychological health deteriorates more as the housing wealth relative to total wealth decreases. Finally, homeowners who have difficulties with mortgage payments report substantial increases in psychological distress and have higher rates of depression. These findings, combined with limited evidence of the change in health-related behaviors, suggest that the increase in stress is the main cause of the adverse health outcomes.

1. Introduction

Following the collapse of the housing bubble in 2007 in the United States, the international financial system experienced an unprecedented volatility leading to the global economic recession in many industrialized and developing countries (Bernanke, 2010; Mian et al., 2010, 2011). As house prices declined, many borrowers found it increasingly difficult to meet their mortgage payments and/or refinance their loans. Consequently, the global economic recession of 2008 reinforced the trend of sharp declines in home values, and resulted in a record high number of foreclosures and devaluation of housing-related securities (Mian and Sufi, 2010). From the first quarter of 2007 through the last quarter of 2010, house price indexes fell by 36 percent in the U.S., 16 percent in Spain, and 5–7 percent in Italy, Japan and Britain (The Economist, 2014). Also, 2.2 percent of all U.S. housing units (one in 45) received a foreclosure notice in 2009, more than 4 times the rate of foreclosure fillings in 2006 (RealtyTrac, 2009).

The goal of this study is to examine how the rapid decline in housing wealth during the global recession affected the psychological and physical health, and health-related behaviors of homeowners. We focus on housing wealth, which we define as the difference between the value of primary residence and outstanding mortgage, because it is an important component of household economic well-being. Moreover, households in a number of countries have experienced large decreases in housing wealth since the beginning of the recession. The value of owner-occupied homes accounts for 33 percent of household assets in the U.S. and an even higher percentage of household assets in European countries (Bricker et al., 2012a; Guiso et al., 2001; Christelis et al., 2013). The pre-recession data from the euro area indicates that the share of home value in households' net wealth increased from 59 percent in 1999 to 68 percent in 2007 (Eiglsperger and Haine, 2009). Housing wealth is particularly important for middle-class families since approximately two-thirds of median household wealth is invested in the primary residence (Bricker et al., 2012b; Christelis et al., 2013).

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Our study aims to contribute to the literature on the relationship between socioeconomic status (SES) and health by examining the impact of unexpected large wealth losses on health. It also contributes to the growing literature that uses international data (U.S., U.K., Iceland, Greece, Australia, Spain, Portugal) to assess the effects of macroeconomic conditions and the recent financial crisis on physical and mental health (Ruhm, 2000, 2003; Ásgeirsdóttir et al., 2014; Karanikolos et al., 2013; Kentikelenis et al., 2011; Sargent-Cox et al., 2011; Katikireddi et al., 2012; Economou et al., 2013; Gili et al., 2013). Recessions could affect health in several different ways. First, the direct effect is generated by the loss of employment, income or wealth. Health could worsen due to the psychological stress of financial difficulties and tighter income constraints. At the same time, the reduced opportunity cost of time and the decrease in work-related stress could generate health benefits (e.g., more time for exercising or cooking). Second, macroeconomic effects could compromise health indirectly by reducing the generosity of private and public safety nets (e.g., public spending on health care). However, a slower economy could also improve health and reduce mortality due to reductions in environmental pollution or auto accidents.

Most recent studies focus on the direct effect of the recession by investigating the impact of unemployment or income loss on health (Bell and Blanchflower, 2011; Miller et al., 2009; Xu, 2013; Phillips and Nugent, 2014; Gili et al., 2013). Riumallo-Herl et al. (2014) show that job loss is associated with increased depressive symptoms in both the U.S. and Europe. In terms of the loss of wealth, McInerney et al. (2013) detect a limited impact of the stock market crash in October 2008 on health. Also relevant to our research, some previous studies examine the impact of the decline in housing prices or foreclosures on health. Currie and Tekin (2011) provide evidence of significant increases in unscheduled hospital and emergency room visits in areas most heavily affected by the foreclosure crisis in the U.S. They determine that the increase in hospital and emergency room visits is mostly caused by psychological stress, rather than the increase in unemployment or migration, decline in housing prices, or the switch from out-patient providers to hospitals. Lin et al. (2013) indicate that the declines in the county-level Housing Price Index in the U.S. are associated with higher rates of antidepressant utilization. Gili et al. (2013) show that the frequency of mental disorders in patients at the primary care centers in Spain increased significantly during the 2008 economic crisis, especially among those with mortgage payment difficulties.

2. Link between housing wealth and health

A rapid decrease in the value of primary residence and home equity (used interchangeably with housing wealth) has substantial effects on housing tenure decisions and financial well-being. The decline in home equity diminishes the likelihood of a refinance or sale. Homeowners with outstanding housing debt may become “upside-down” in their mortgages, i.e., their mortgage becomes larger than the value of their home. In response to a decrease in home value, some homeowners, especially those with negligible down payments and negative home equity, may decide to default and “walk away” from their home loans. Foreclosures and forced sales have numerous adverse consequences, ranging from the need to find a new residence to credit downgrades, tax obligations, and the emotional toll of leaving behind a home and neighborhood, all of which create psychological stress. The unexpected financial shock of losing a home to foreclosure implies tighter budget constraints, which are likely to generate adverse changes in health-related behaviors. For example, households experiencing a decline in wealth may reduce expenditures by not filling prescriptions, postponing doctor visits, and substituting healthy food with less healthy but more affordable alternatives (Feinstein, 1993; Jensen and Richter, 2004; Lusardi et al., 2010).

Default on mortgage liability might not be an issue for homeowners with positive equity who are not affected by short-term liquidity constraints. However, their consumption can still be affected in two ways. First, life-cycle models suggest that households adjust their consumption and labor supply whenever they receive new information regarding lifetime wealth. Several empirical studies show that unrealized home equity gains/losses have consumption effects (Campbell and Cocco, 2007; Lovenheim and Reynolds, 2013). Second, a change in housing wealth can affect consumption by relaxing or tightening borrowing constraints. A decline in home equity reduces the possibility of utilizing a home as a collateral and causes consumption to decline (Hurst and Stafford, 2004; Cooper, 2013). Similar to the impact of foreclosures, a decline in housing wealth can also have an adverse effect on psychological and physical health through emotional distress. Around three quarters of Americans cite money issues as a cause of stress, and household indebtedness is among the most frequent determinants of stress (American Psychological Association, 2012; Bridges and Disney, 2010; Brown et al., 2005). Also, health-related behaviors can be negatively affected by the contractions in budget constraints.

Emotional distress affects both mental and physical health in a variety of ways. Stress is associated with anxiety, depression, sleeping and eating disorders, weight loss or gain, and also leads to health-undermining behaviors, such as smoking, and abuse of alcohol and/or drugs (Goldberger and Breznitz, 1993; Cooper, 2004). In addition, stress is considered to be one of the causes of hypertension and therefore is a risk factor for a heart attack or stroke (Cohen et al., 2007; Strike and Steptoe, 2004). Stress may also depress the immune system, increasing susceptibility to various diseases including cancer (Chida et al., 2008; Cohen et al., 2012).

3. Methods

3.1. Data

We draw upon the 2007, 2009 and 2011 waves of the Panel Study of Income Dynamics (PSID), which is a publicly available secondary dataset that provides a nationally representative sample of U.S. households. The economic recession in the U.S. officially began in December 2007 and ended in June 2009, with most significant declines of home values experienced in 2008 and 2009. A number of recent studies used the 2007–2009 PSID to investigate the impact of the recession on wealth, retirement decisions, and economic well-being (Bosworth, 2012; Dynan, 2012; Lerman and Zhang, 2013). Our analysis includes the 2011 wave to additionally account for the changes in housing and non-housing wealth beyond the official end of the recession.

The value of a home is reported by homeowners in each wave of the PSID. The literature provides evidence that some homeowners misestimate their house value, although the magnitude of error is not large, typically ranging between 3 and 5 percent (Agarwal, 2007). This measurement error should not affect our results because consumption and spending decisions, as well as decisions regarding repaying or defaulting on mortgage loans, depend on the homeowner's subjective estimate of the home value (Agarwal, 2007).

Housing wealth (home equity) is the difference between the value of the primary residence and outstanding mortgage liability. Non-housing wealth is constructed as the sum of assets (excluding primary residence) minus all debts (excluding mortgage liability).