Mortgage Holding and Financial Satisfaction in Retirement

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The purpose of this study was to evaluate the relationship between holding mortgage debt into retirement and financial satisfaction. Using data from the 2012 National Financial Capability Survey, this study explored the association between holding a mortgage in retirement and financial satisfaction through the use of a two-block hierarchical regression model. The first model of socio-demographics, financial constraints, and financial characteristics revealed a negative relationship between mortgage holders and financial satisfaction. The second model added measures of financial capability and financial beliefs, which revealed strong relationships between comfort with debt, knowledge about mortgages, subjective financial knowledge, and risk tolerance with financial satisfaction. After the addition of financial capability and belief measures, no relationship was found between holding a mortgage and financial satisfaction. Results suggest practitioners should explore their clients' beliefs about debt, as opposed to just the objective costs and benefits, when evaluating whether to hold a mortgage in retirement.

Keywords: financial satisfaction, retirement, mortgages, behavioral life-cycle hypothesis

Introduction

Overall, debt levels are increasing among Americans, and the use of debt remains widespread until late in the lifecycle (Lusardi & Mitchell, 2013). A recent analysis by the Consumer Financial Protection Bureau (CFPB) (2014) noted a trend of older Americans carrying more mortgage debt into retirement, accumulating less home equity, and having difficulty making monthly mortgage payments. As a result, foreclosure rates among older Americans have increased, and mortgage debt is increasingly threatening retirement security (CFPB, 2014). The rise in mortgage debt contrasts conventional wisdom, as previous generations of retirees were once encouraged to enter retirement free of debt, especially related to housing. This adage aligned with using debt during younger years and relying only on income sources during retirement to meet expenses. Many practitioners rely on this standard, as Rose (2013) listed a mortgage as one of the five debts that can ruin retirement, and Moss (2014) indicated that a paid off mortgage before retirement was a key to retirement happiness.

Although the trend of mortgage holding in retirement may be disturbing, the availability of borrowing options may provide some households with additional strategies to maximize lifetime wealth. Specifically, in today's period of historically low mortgage interest rates, holding housing debt in retirement may be rational in order to maximize expected household resources (Smith, Finke, & Huston, 2012). This discussion is often driven by the objective financial benefits of borrowing for leverage purposes (Webb, 2009). Leverage is a financial strategy that focuses on resource maximization and the objective financial benefits of borrowing at relatively low interest rates to reinvest the proceeds to produce a higher return. However, employing this strategy in retirement involves significant risk, as Kitces (2011) compared the risk of not prepaying an existing mortgage to using a margin loan to invest in stocks; a risk arbitrage position regardless of the type of debt instrument. Consequently, voluntary mortgage-holders should be cautioned that investment returns and future performance are not guaranteed when weighing the options of prepaying a mortgage based on current market returns (Financial Management Concepts, 2014). Evidence suggests that relative risk aversion does not increase in retirement (Wang & Hanna, 1997); therefore, older individuals may be willing to accept leverage risk when retaining a mortgage in retirement.

Leveraging assets may make financial sense if the investment rate of return exceeds borrowing costs, yet this approach is not without financial and psychological risk. Psychological costs are often associated with carrying debt that may lead to unintended consequences for a retiree's financial satisfaction (Brown, Taylor, & Price, 2005). Some practitioners identify

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the prepayment decision as both financial and emotional, and not merely mathematical (Fuscaldo, 2014). Therefore, given the prevalence of retiree mortgage debt and the potential for financial and psychological harm related to holding mortgage debt into the retirement years, the purpose of this study is to evaluate the relationship between holding mortgage debt into retirement and financial satisfaction. An understanding of the psychological effects associated with this specific type of debt in retirement may further inform mortgage policy and assist financial planning practitioners in advising older Americans and those contemplating retirement.

Literature Review

Financial Satisfaction

Financial satisfaction is a subcomponent of overall well-being (Plagnol, 2011) and focuses on similar elements of general well-being such as being worry-free (Joo, 2008). Well-being is a term that encompasses an individual's contentment, satisfaction, or happiness with their situation (McDowell, 2010). A high sense of well-being impacts an individual's quality of life (Andrews & Withey, 1976). Adequate retirement planning is critical for economic and personal well-being in retirement (Taylor, Doverspike, Adams, & Beehr, 2003). Retirees face numerous decisions regarding the use of their income and assets to manage ongoing expenses and debt payments in retirement, the outcome of which has a direct impact on their well-being.

Financial satisfaction is a measure of both objective items, such as income and assets, as well as subjective perceptions of standard of living (Porter & Garman, 1993). However, it should be noted that two individuals' perception of their financial condition can be different even when objective financial measures may be similar (Prawitz et al., 2006). Researchers do not agree on an optimal way to measure financial satisfaction (Joo & Grable, 2004). Consequently, both single-item and multiple-item measures have been employed to measure financial satisfaction (Robb & Woodyard, 2011).

The most significant determinants of financial satisfaction are financial behavior, financial stress, and financial knowledge (Joo & Grable, 2004). In addition, there is some evidence that financial satisfaction may be affiliated with the propensity to seek financial advice. Individuals with greater financial satisfaction are more likely to seek professional financial advice (Grable & Joo, 2001). In a more nuanced study, financial satisfaction levels were negatively associated with the likelihood of seeking debt advice, but that financial satisfaction was positively associated with the likelihood of seeking advice in saving or investing decisions (Robb, Babiarz, & Woodyard, 2012).

Debt and Financial Satisfaction

Psychological costs associated with carrying debt may lead to unintended consequences for a retiree's financial satisfaction (Brown, Taylor, & Price, 2005). Decreased mental health was associated with the lack of ability to pay debt in a study of Miami-Dade County residents who were 59 years old and older (Drentea & Reynolds, 2012). In a Norwegian study, debt had a substantial impact on financial satisfaction for individuals between the ages of 40-80 (Hansen, Slagsvold, & Moum, 2008).

Previous work has shown that different types of debt have distinct psychological effects on borrowers (Brown et al., 2005). Some evidence suggests that housing debt may have more limited psychological effects than other consumer debt. For example, credit card debt had a stronger impact on financial satisfaction than mortgage debt in the second and third waves of the U.S. National Survey of Families and Households (Plagnol, 2011). With well-being measured with the widely recognized 12-question General Health Questionnaire (GQH12), no significant association was found between holding a mortgage and psychological well-being in a British Household Panel Survey of 1995 and 2000 waves of all ages (Brown et al., 2005). Interestingly, some evidence suggests that the appropriate use of debt may increase financial well-being (Lown & Ju, 1992). As an example, in a study using the 2000 and 2006 panel data of the Health and Retirement Study, households with less than $300,000 in financial asset wealth, but with sufficient assets to pay off their mortgages, experienced welfare loss from transferring liquid assets to an illiquid asset by prepaying mortgage debt (Michelangeli, 2012).

Financial Capability and Financial Satisfaction

Taylor (2011) summarized financial capability as the ability to manage and control finances. As such, major components include objective and subjective areas of resource management, financial decision-making processes and skills, and financial knowledge (Lusardi, 2011). Courchane (2005) noted that although self-assessed financial knowledge does not always align with objective knowledge levels, it still impacts financial behavior. As retirement mortgage debt increases (CFPB, 2014) and baby boomers increase the number of pre-retirees and retirees (Vitt, 2013), the effects of financial capability on financial satisfaction in retirement gains

importance. Financial competence for retirees is crucial due to the various and substantial risks involved in their financial decision-making (Leskinen & Raijas, 2006).

There is some evidence of a link between high financial capability and the ability to better evaluate debt strategies. Financially sophisticated households of all ages are more likely to select an adjustable-rate mortgage when interest rates are favorable for leverage purposes (Smith, Finke, & Huston, 2011). Specifically among retirees, households with greater financial sophistication are more likely to be highly leveraged (Smith et al., 2012). As related to satisfaction, there is evidence of a positive association between both objective and subjective financial knowledge and financial satisfaction (Xiao, Chen, & Chen, 2014). An increase in financial knowledge through a self-directed program had a significantly positive association with financial satisfaction (Loibl & Hira, 2005).

Financial capability is most impactful on financial well-being when it is manifested through participation in financial management practices (Leskinen & Raijas, 2006). As related to retirement, there is ample evidence that active participation in retirement planning activities pre-retirement is positively associated with better retirement outcomes. Specifically, Power and Hira (2004) reported a substantial association between retirement planning activities and financial satisfaction in retirement. Similarly, Grable and Joo (2001) identified that self-planners who engaged in pre-retirement planning had the highest perceived retirement satisfaction and Anderson and Weber (1993) suggested that individuals who actively participated in pre-retirement planning reported higher levels of satisfaction with their current financial condition.

Financial Beliefs and Financial Satisfaction

Financial beliefs are unique and internal to each individual. They play a critical role in informing financial satisfaction as they shape the way an individual interprets their financial condition. They also may be ingrained and not easily influenced. When new information is received regarding an investment, any change in beliefs was dependent on the alignment between the new information, current beliefs, and past choices (Kuhnen & Knutson, 2011). While a leverage strategy suggests that a retiree should maintain a mortgage if borrowing costs are low and market expectations are bullish, perceptions of carrying that debt may be critical for a retiree's financial satisfaction (Hira & Mugenda, 1998). Retirees may experience "retirement anxiety" when they are uncertain of whether future income will meet future expenses (Drentea, 2000; Hayslip, Bezerlein, & Nichols, 1997). Conversely, a generally positive attitude towards the use of credit has been found to be associated with higher installment loan balances (Chien & Devaney, 2001). Consequently, a retiree's comfort and beliefs surrounding the suitability of their debt load may provide a more direct understanding of the effect debt has on an individual's financial satisfaction.

Given the risk level involved within a potential leverage strategy, evaluation of an individual's risk tolerance is important. Financial risk tolerance has been found to be associated with financial satisfaction, although there were mixed results related to the direction of this relationship. Whereas Joo & Grable (2004) found a negative relationship between risk tolerance and financial satisfaction, other research indicated that financial risk tolerant individuals may derive greater financial satisfaction from their financial decisions (Grable & Lytton, 1998; Roszkowski, 1999).

Other Factors Associated with Financial Satisfaction

Previous literature also provides for a base understanding of the factors that influence an individual's financial satisfaction. Financial satisfaction has consistently found to be influenced by the demographic and socio-economic characteristics such as age, ethnicity, gender, education, marital status, income, and homeownership (Ackerman & Paolucci, 1983; Davis & Helmick, 1985; Davis & Schumm, 1987; George, 1992; Hira & Mugenda, 1999a, 1999b; Hong & Swanson, 1995; Joo, 1998; O'Neill, 1995; Porter, 1990). In addition, financial satisfaction has been found to be associated with an individual's contentment with objective and subjective financial circumstances (Joo & Grable, 2004).

An individual's objective and perceived ability to meet economic needs may influence their contentment with their financial situation (Draughn, LeBoeuf, Wozniak, Lawrence, & Welch, 1994). Consequently, objective factors such as the presence of an emergency fund, multiple income sources, and financial asset holdings may increase financial satisfaction. Financial stressors associated with the inability to meet current consumption needs and pre-existing excessive consumer debt tends to lower financial satisfaction (Freeman, Carlson, & Sperry, 1993; Joo, 1998). Thus, financial constraints of having difficulty paying bills, spending more than current income, and having existing debt may lower financial satisfaction. Additionally, the level of mortgage debt of a homeowner, especially if loan values exceed home values, may influence the mortgage holder's financial satisfaction.

Mortgages and Retirement

The notion of holding a mortgage into retirement based on a leverage strategy is a dichotomy between what is in the best financial interest of the retiree versus the retiree's customs, values, and perceived financial satisfaction. Mann (2011) suggested a moral stigma associated with borrowing, which contributes to debt aversion. Wolfe (1989) suggested that mortgage borrowing behaviors have been based on customs through an analysis of historical patterns, finding that mortgage lending was not based on market principles but on a moral life cycle. There is also significant evidence that housing equity has been seen as an equity source of last resort among older Americans, and that given the choice they would prefer not to reduce equity (Venti & Wise, 1990; 2004). Many retirees avoided taking on housing debt, specifically reverse mortgages, in retirement because they viewed home equity as insurance against living and health expenses (Munnell, Soto, & Aubry, 2007). This body of literature suggests strong beliefs may be embedded in an individual's decision making related to holding a mortgage in retirement.

Financial decisions made in pre-retirement and during the retirement years have an impact on financial satisfaction and overall well-being. Debt has a unique impact on financial satisfaction based on the type of debt and individual's perception of debt. Higher objective and subjective financial knowledge and higher risk tolerance may be associated with using more sophisticated debt products, including a leverage strategy of holding a low-interest mortgage in retirement. More Americans are heading into retirement as mortgage holders but little is known about the impact of this debt on retirees' financial satisfaction.

Theoretical Framework

From the viewpoint of the traditional Life-Cycle (LC) hypothesis (Ando & Modigliani, 1963), utilizing a mortgage in retirement as a financial leverage strategy may be a strategy to maximize resources, dependent on the viability of the current market conditions and appropriate investment strategies. Through the possibility of generating higher expected returns from investments compared to the borrowing cost of a mortgage, an individual would have the opportunity to increase overall lifetime wealth. This increase in wealth would result in an increase in permanent lifetime income and, consequently, be associated with an increase in an individual's utility. With the different components of wealth (e.g. income and assets) considered fungible under the LC hypothesis, negative psychological outcomes associated with carrying a mortgage for leverage purposes would not be expected if an individual's overall wealth has been maximized.

However, when a leverage strategy is viewed through the lens of the Behavioral Life-Cycle (BLC) hypothesis, the associated costs and benefits become more muddled. The BLC hypothesis relaxes the fungibility assumption of the LC hypothesis and incorporates psychological variables that the LC hypothesis does not, providing for a more behaviorally realistic framework to evaluate an individual's economic action (Shefrin & Thaler, 1988). The BLC hypothesis indicates that the different components of wealth are non-fungible and are framed by an individual into three distinct money accounts: current income, current assets, and future income. According to the BLC hypothesis, the financial gains realized from employing an asset leverage strategy would be psychologically coded as an increase in future income, while a current drag would be felt on current income due to the increased monthly obligations of mortgage payments. An asset leverage strategy may be viewed as a savings plan utilizing current income. Therefore, the increased burden on current income to support this savings plan may carry a high psychological cost, given that the marginal propensity to consume is greater for current income. The unintended consequence of the asset leverage strategy may be increased financial distress and reduced overall utility when viewed through the BLC hypothesis lens. Overall, the BLC hypothesis framework indicates that there may be a psychological cost associated with holding a mortgage, even when current resources are not objectively constrained.

The purpose of this study is to evaluate the relationship between holding mortgage debt into retirement and financial satisfaction. Through framing, the BLC hypothesis indicates reduced financial satisfaction may be associated with holding a mortgage into retirement, whether or not wealth is maximized or resources are constrained when compared to retirees who do not hold a mortgage. However, the LC hypothesis suggests that financial satisfaction may increase if an individual's overall wealth is maximized when compared to retirees who do not hold a mortgage. The potential for divergent psychological outcomes suggests a complicated relationship exists between mortgage holders and financial satisfaction in retirement. Informed by the LC hypothesis and the BLC hypothesis, the hypotheses for this study are as follows:

H1: The inclusion of variables representing the framing function of the BLC hypothesis provides more explanatory power in determining financial satisfaction among retired homeowners.

H2: A relationship exists between the BLC hypothesis framing variables and financial satisfaction in retirement.

Methods

Data and Sample

This study used data from the 2012 National Financial Capability Study (NFCS). The Financial Institution Regulatory Authority (FINRA) is a non-governmental securities regulator that acts as a self-regulatory organization for its member brokerage firms and securities exchange markets. The FINRA Investor Education Foundation (FINRA Foundation) commissioned the first NFCS in 2009 in consultation with the U.S. Department of the Treasury to assess financial capability and evaluate differences associated with attitudes, behaviors, demographics, and financial literacy characteristics. The 2012 study updated key measures from the 2009 study and further explored topics such as student loan debt and medical debt.

The NFCS state-by-state data was collected from online surveys of 25,509 adults in the United States, with roughly 500 observations per state plus the District of Columbia. Respondents were drawn from established online panels and collected using a non-probability quota sampling methodology with inclusion criteria based upon age, gender, ethnicity, education level, and income. Weighting information is provided to normalize the data to be representative of the U.S. population based on estimates from the American Community Survey. To explore the relationship between holding a mortgage in retirement and financial satisfaction, the sample for this study included retired homeowners over the age of 55, providing an analytic sample of 3,124 respondents.

Dependent Variable

The dependent variable for this study was financial satisfaction. The 2012 NFCS contains a single item Likert-type measure of financial satisfaction. Specifically, respondents were asked the following question, "Overall, thinking of your assets, debts and savings, how satisfied are you with your current personal financial condition?" Potential responses ranged from 1 (not at all satisfied) to 10 (extremely satisfied), with higher responses associated with higher levels of financial satisfaction in retirement. Although a more comprehensive measure of financial satisfaction might be ideal, previous work has commonly used a similar single item measure (Archuleta, Britt, Tonn, & Grable, 2011; Archuleta, Dale, & Spann, 2013; Prawitz et al., 2006; Robb & Woodyard, 2011, Xiao et al., 2014).

As indicated by the BLC hypothesis and the LC hypothesis, a complicated relationship exists between holding a mortgage into retirement and financial satisfaction. In order to better understand this relationship, the variables in the statistical analysis were organized into two blocks within a hierarchical regression model. In addition to demographic variables, model one included only block one variables that represent the objective economic variables associated with the LC hypothesis. Model two added in the block two variables, which are associated with how individuals might frame their current mortgage holding strategy, as informed by the framing function of the BLC hypothesis.

Block 1 Independent Variables

Previous literature indicates that demographic characteristics and economic characteristics can significantly impact financial satisfaction. These variables served to provide a baseline understanding of the factors associated with financial satisfaction from an LC hypothesis perspective.

Financial characteristics. Several measures of an individual's financial characteristics and situation were contained within the NFCS. Related to income, data were collected about household's income and the type of income sources. Income was measured through a single item question that utilized income ranges: (a) less than $35,000; (b) $35,000 to $50,000; (c) $50,000 to $75,000; (d) $75,000 to $100,000; and (e) more than $100,000. For the purposes of this analysis, income was treated as a categorical variable. In addition, binary variables were created to measure whether a respondent indicated receipt of Social Security benefits and/or pension income. Lastly, in order to control for major fluctuations of income, a binary variable was included that identified households that experienced an unexpected large drop in income (income shock) in the past 12 months.

While no direct measure of net worth was collected, a variety of information was collected about asset ownership. Specifically, ownership of the following assets were identified: (a) an emergency fund that covered three months of expenses; (b) an employer retirement plan (e.g. 401k); (c) a non-employer retirement plan (e.g. IRA and SEP); (d) investments in stocks, bonds, mutual funds, or other securities outside of retirement accounts; (e) a savings account, money market account, or certificate of deposit; and (f) real estate other than a primary residence. Although no information was available about the value of these assets, the presence of these assets provided significant information about a household's financial situation.

Financial constraints. Measures of financial constraints were included to control for potential financial stressors facing an individual that may impact their ability to pay their mortgage. Financial constraints may come from a variety of situations arising from both behavioral and environmental factors, including: overspending on discretionary expenses (e.g. clothing or vacations), experiencing an increase in fixed expenses (e.g. rising insurance rates or real estate taxes), or experiencing a reduction in income (e.g. from employment changes or investment losses). Binary variables were included to identify if a household reported having a car loan or any unpaid medical bills. Moreover, respondents' objective and subjective views of financial constraints were assessed through the following questions:

- "Over the past year, would you say your [household's] spending was less than, more than, or about equal to your [household's] income?"
- "In a typical month, how difficult is it for you to cover your expenses and pay all your bills?"

Spending relative to income was measured in three categories: (a) those that indicated spending less than their income; (b) those that indicated spending the same as their income; and (c) those that indicated spending more than their income. Similarly, reported difficulty in covering expenses and paying bills was coded according to the three possible response categories: (a) *very difficult*; (b) *somewhat difficult*; and (c) *not at all difficult*.

Home characteristics. Home mortgage characteristics were included to identify the association of mortgage holding with financial satisfaction and to control for differences between mortgage holders with home equity and those with mortgage balances exceeding the home's value. The three separate home mortgage categories included: (a) no current home mortgage; (b) current home mortgage balance less than the current fair market value of the home; and (c) current home mortgage greater than the current fair market value of the home (underwater).

Socio-demographic variables. An individual's socio-demographic characteristics have been found to contribute to their financial satisfaction level (Joo & Grable, 2004; Loibl & Hira, 2005). Consequently, measures of age, gender, education, marital status, race, and the presence of financially dependent children were included in the analyses.

Block 2 Independent Variables

In addition to the objective economic characteristics as viewed through an LC hypothesis lens, how an individual frames their current mortgage holding strategy may be associated with the financial satisfaction they experience as a result of that strategy. The framing function of the BLC hypothesis was operationalized through four measures of financial capability and two measures of financial beliefs. The four measures of financial capability included: financial advice, task specific financial knowledge, subjective financial knowledge, and assessment of retirement needs. Additionally, the two components of financial beliefs included: debt beliefs and risk tolerance.

Financial advice. With financial knowledge directly associated with financial satisfaction, those who have received financial advice may possess more financial knowledge than those who have not received financial advice, thereby potentially impacting how a financial strategy is framed and the resulting financial satisfaction level (Joo & Grable, 2004). Given the potential relationship between financial advice and financial satisfaction, two separate measures of financial advice relevant to a leverage strategy were included within the analysis: (a) financial advice for savings or investments; and (b) financial advice for taking out a mortgage or a loan. Two binary variables were included to identify whether a respondent reported receiving advice related to debt or investments in the last 5 years.

Task specific financial knowledge. Two variables related to an individual's understanding of mortgages and compound interest were included as measures of objective financial knowledge. These variables served as proxies for an individual's ability to understand and frame the leverage strategy at a basic level. These questions were drawn from the 5-question scale developed and employed by Lusardi and Mitchell (2006, 2009). The use of the full scale was evaluated; however, testing found it to be unreliable for the current sample. The first question measured whether an individual understands mortgages and mortgage interest given loan duration. The second measured a respondent's understanding of compound interest. Binary variables were created to signify whether the respondent answered the question correctly. The questions used were as follows:

- Compound Interest: "Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?"
- Mortgages: "A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less."

Subjective financial knowledge. Three questions were provided within the NFCS that addressed subjective financial knowledge (Robb et al., 2012). What individuals think they know about financial matters may impact how they frame financial strategies. Potential Likert-type responses to the following separate questions ranged from 1 to 7 with higher values representing higher levels of subjective financial knowledge. Each question was included separately as a continuous variable in the second block of the hierarchical regression model. The following questions were used:

- "How strongly do you agree or disagree with the following statements? —I am good at dealing with day-to-day financial matters, such as checking accounts, credit and debit cards, and tracking expenses."
- "How strongly do you agree or disagree with the following statement? — I am pretty good at math."
- "On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your overall financial knowledge?"

Retirement needs. Active retirement planning and mental engagement in the process has been found to be associated with increased financial satisfaction (Power & Hira, 2004). The process of computing retirement savings needs may provide an individual with additional knowledge and experience important to the framing process of the BLC hypothesis. As a measure of active engagement in planning for retirement, respondents who attempted to compute their retirement savings needs prior to retirement were identified through the following question:

- "Before you retired, did you try to figure out how much you needed to save for retirement?"

Responses were binary coded to identify participation in this activity.

Debt beliefs. A respondent's subjective assessment of their current debt level was included within the analysis in order to evaluate the psychological relationship between mortgage debt and financial satisfaction. A person's view of their debt could have an association with how a leverage strategy is framed according to the BLC hypothesis. Debt belief was operationalized through the following question from the NFCS: "How strongly do you agree or disagree with the following statement? — I have too much debt right now." Potential responses ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

Risk tolerance. Given the risk inherent in an asset leverage strategy and the role risk tolerance plays in shaping a respondent's view of different financial instruments and strategies, a measure of self-reported risk tolerance was included in the analysis. Respondents' risk tolerance was assessed through the following single question:

- "When thinking of your financial investments, how willing are you to take risks?"

Potential responses ranged from 1 to 10, with higher scores associated with an increased willingness to take risks.

Data Analysis

Given the complicated relationship between debt and financial satisfaction, as illustrated by the potential for divergent psychological outcomes of the LC hypothesis compared to the BLC hypothesis, a two-block hierarchical regression was employed. Hierarchical regression is used to compare successive regression models to isolate the effect of the inclusion of additional variables to an analysis. The BLC hypothesis is considered a "behavioral enrichment" of the LC hypothesis (Shefrin & Thaler, 1988, p. 609). Thus, a preliminary analysis was conducted to provide a basic understanding of the relationship between mortgage holding and financial satisfaction through the lens of the LC hypothesis. This analysis sought to provide a baseline understanding of how an individual's financial satisfaction level was affected by their demographic and economic characteristics. Consequently, measures of socio-demographics (age, gender, education, marital status, race, and presence of dependent children), financial constraints (difficulty paying bills, spending relative to income, and existing car loan or medical debt), financial characteristics (income, presence of income shock, receipt of pension and social security income, emergency fund, retirement plans, stocks, liquid savings, and other real estate), and housing characteristics (whether they had a mortgage and whether the house was underwater) were included.

Next, measures of internal characteristics were added that may affect an individual's ability to evaluate the mortgage decision and comfort level with the leverage strategy through the framing process of the BLC hypothesis. These measures of financial capability (objective financial knowledge, subjective financial knowledge, and calculation of retirement needs) and financial beliefs (debt beliefs and risk tolerance) were included to provide a more behaviorally realistic view between debt and financial satisfaction according to the BLC hypothesis. The addition of the variables in the second block of the hierarchical regression provided for a more in-depth understanding of

the relationship between psychological characteristics and financial satisfaction after controlling for the effects of demographic and economic characteristics.

Results

Sample Characteristics

An overview of sample characteristics can be found in Table 1. Unweighted sample descriptives are reported here, although sample characteristics after applying normalized weights are available below. The majority of the respondents were over the age of 65 (72%), White (90%), and were married (74%). The sample was roughly split between males (53%) and females (47%). The vast majority of respondents had at least a high school diploma, with 36% having at least a college degree. The sample's income was slightly higher than population averages, as 64% of respondents reported household income of at least $50,000 annually. As far as income sources, 69% reported having a pension and 84% reported receiving Social Security. Relatively high levels of assets ownership were present in the sample, as 72% of respondents had an emergency fund, 70% had an employer retirement plan, 59% had a separate retirement plan, 63% owned stocks, 89% had liquid savings, and 28% owned other real estate. Almost half of respondents reported receiving advice related to investments, whereas only 20% reported receiving advice related to debts.

A substantial number of respondents reported difficulty paying bills on a regular basis, with 27% of respondents reporting some difficulty and almost 5% of respondents reporting that it was very difficult to pay their bills. Similarly, 13% of respondents reported spending more than their income on an annual basis, with another 40% reporting that they spent the same amount as they make. Meanwhile, a total of 42% of respondents reported having a mortgage, with 5% of respondents indicating that their home was underwater. Limited other debt sources were indicated, with 25% indicating they had a car loan and 8% reporting they had outstanding medical bills. Very high levels of content specific objective knowledge were revealed, with 89% and 86% of respondents answering questions related to understanding mortgages and compound interest, respectively. Lastly, roughly two thirds of respondents indicated that they had computed their retirement needs prior to retirement.

Sample means can be found in Table 2. Financial satisfaction was relatively high for the sample, with a mean score of 6.76 out of 10. Similarly, individuals reported relatively high average scores related to subjective financial knowledge (5.63 out of 7), perceived ability to do day-to-day financial activities (6.28 out of 7), and perceived ability to perform math (5.98 out of 7). The average risk tolerance was relatively low, with a mean score of 4.31 out of 10. On average, respondents disagreed that they had too much debt, with a mean score of 2.68 out of 7.

Regression Results

Results of the two-block hierarchal regression model can be found in Table 3. Analyses were weighted using normalized weights and robust standard errors were computed. Variance inflation factors were checked to test for any potential multicollinearity issues in both models, but were found to be well within the acceptable range (less than 3). In model one, evidence of a negative relationship was revealed between holding a mortgage and financial satisfaction. Specifically, retired mortgage holders reported financial satisfaction scores .23 units lower than comparable individuals who did not hold a mortgage when controlling for socio-demographic characteristics, financial constraints, financial characteristics, and housing characteristics. Although the data to compute a loan-to-value ratio was not available, it is important to note that this model controlled for difficulty in paying bills and whether respondents reported spending more than their income. Similarly, individuals with mortgage balances exceeding their home value reported satisfaction scores .91 units lower than individuals who did not hold a mortgage. No association was found between financial satisfaction and the presence of either a car loan or medical debt.

Additional results from this model suggest a strong relationship between income and financial satisfaction, holding all else equal. Similarly, the presence of a shock to income was associated with a decrease in financial satisfaction of .82 units, holding all else constant. The presence of financial assets was positively associated with financial satisfaction, as individuals with emergency funds, separate retirement plans, and stock holdings reported higher levels of financial satisfaction, holding all else equal.

Strong evidence of a negative relationship was found between the presence of financial constraints and financial satisfaction. As compared to those who reported no difficulty paying bills, individuals reporting that it was somewhat difficult or very difficult to pay bills reported financial satisfaction scores 1.53 and 2.50 lower, respectively. Lastly, individuals that spent the same or more than their income reported financial satisfaction scores .35 and .62 units lower, respectively, compared to those who spent less than their income.

Table 1. Sample Demographics (n = 3,142)

Variable	n (unweighted)	% (unweighted)	% (weighted)
Age			
55 to 64	871	27.72%	28.54%
65 and above	2271	72.28%	71.46%
Race			
White	2843	90.48%	87.54%
Other	299	9.52%	12.46%
Gender			
Male	1659	52.80%	51.24%
Female	1483	47.20%	48.76%
Education			
Less than college	866	27.56%	33.05%
Some college	1148	36.54%	41.00%
College graduate	525	16.71%	12.37%
Graduate school	603	19.19%	13.57%
Marital status			
Married	2339	74.44%	74.29%
Not married	803	25.56%	25.71%
Dependent children			
Yes	315	10.03%	10.10%
No	2827	89.97%	89.90%
Income			
Less than $35,000	640	20.37%	20.62%
$35,000 to $50,000	485	15.44%	16.02%
$50,000 to $75,000	775	24.67%	24.17%
$75,000 to $100,000	487	15.50%	15.10%
Above $100,000	755	24.03%	24.09%
Income shock			
Yes	434	13.81%	14.48%
No	2708	86.19%	85.52%
Income sources			
Pension	2179	69.35%	69.07%
Social security	2642	84.09%	83.69%
Financial assets			
Emergency fund	2274	72.37%	71.13%
Employer sponsored retirement plan	2193	69.80%	69.60%
Separate retirement plan	1864	59.33%	57.35%
Individual stocks	1969	62.67%	60.32%
Liquid savings	2810	89.43%	89.74%
Other real estate	894	28.45%	26.88%
Received financial advice			
Investments	1529	48.66%	45.89%
Loans	637	20.27%	19.89%

Table 1 Continued. Sample Demographics (n = 3,142)

Variable	n (unweighted)	% (unweighted)	% (weighted)
Difficulty paying bills			
Very difficult	150	4.77%	5.09%
Somewhat difficult	871	27.72%	28.94%
Not difficult	2121	67.50%	65.97%
Spend relative to income			
Less than income	1454	46.28%	46.92%
Same as income	1285	40.90%	40.40%
More than income	403	12.83%	12.68%
Other debt sources			
Car loan	804	25.59%	26.12%
Medical bills	265	8.43%	8.73%
Mortgage			
No mortgage	1823	58.02%	58.50%
Have mortgage	1148	36.54%	35.74%
Mortgage underwater	171	5.44%	5.76%
Objective financial knowledge			
Mortgages	2783	88.57%	87.71%
Compound interest	2713	86.35%	85.38%
Computed retirement needs			
Yes	2032	64.67%	63.30%
No	1110	35.33%	36.70%

Note: Sample characteristic presented unweighted and with normalized population weights applied

Table 2. Sample Demographics-Continuous Variables (n = 3,142)

Variable	Mean (unweighted)	SD	Mean (weighted)	SD	Min	Max
Financial satisfaction	6.76	2.48	6.70	2.39	1	10
Subjective financial knowledge	5.63	1.02	5.59	0.99	1	7
Day-to-day matters	6.28	1.35	6.26	1.30	1	7
Math	5.98	1.45	5.95	1.39	1	7
Risk tolerance	4.31	2.44	4.20	2.34	1	10
Believe too much debt	2.68	2.04	2.72	1.96	1	7

Note: Sample characteristic presented unweighted and with normalized population weights applied

The addition of the financial capability and belief measures in model two significantly altered the relationship between mortgages and financial satisfaction. After controlling for financial capability and financial beliefs, there were no statistically significant differences in the financial satisfaction levels of mortgage holders with home equity (those not underwater) and non-mortgage holders. Additionally, a significant relationship was revealed between individuals' comfort with their debt levels and their financial satisfaction. Specifically, a one-unit increase in the debt comfort scale (representing further agreement with the statement "I have too much debt right now") was associated with a .20 unit decrease in reported financial satisfaction, holding all else equal. Testing of various additional models by the researchers indicated that the shift in significance for mortgage holders is directly related to the addition of the debt comfort variable.

Table 3. Results of Hierarchical Regression Predicting Financial Satisfaction Levels (n = 3,142)

	Model 1		Model 2	
Variable	B	SE B	B	SE B
Intercept	6.236**	0.284	5.183**	0.400
Age (65 and above)				
55 to 64	0.037	0.107	0.024	0.099
White (Non-White)	-0.077	0.132	0.035	0.129
Female (Male)	-0.011	0.078	0.067	0.077
Education (less than college)				
Some College	-0.159	0.101	-0.167	0.095
College graduate	-0.057	0.123	-0.121	0.113
Graduate school	-0.149	0.121	-0.153	0.113
Married (Single)	-0.09	0.101	-0.102	0.096
Dependent children (No Children)	0.052	0.130	0.027	0.120
Income (less than $35,000)				
$35,000 to $50,000	0.427**	0.146	0.434**	0.139
$50,000 to $75,000	0.204	0.143	0.272*	0.138
$75,000 to $100,000	0.563**	0.156	0.518**	0.147
Above $100,000	0.751**	0.158	0.584**	0.150
Income shock	-0.815**	0.146	-0.810**	0.139
Income sources				
Pension	0.175	0.094	0.163	0.091
Social security	-0.001	0.131	-0.058	0.118
Financial assets				
Emergency fund	0.981**	0.121	0.604**	0.123
Employer sponsored retirement plan	0.075	0.100	0.110	0.096
Separate retirement plan	0.182*	0.091	0.054	0.087
Individual stocks	0.561**	0.096	0.267*	0.097
Liquid savings	-0.006	0.154	-0.044	0.148
Other real estate	0.012	0.087	0.034	0.082
Difficulty paying bills (not difficult)				
Very difficult	-2.497**	0.291	-2.085**	0.273
Somewhat difficult	-1.529**	0.121	-1.259**	0.118
Spend relative to income (less than)				
Same as income	-0.352**	0.087	-0.306**	0.083
More than income	-0.618**	0.148	-0.490**	0.142
Other debt sources				
Car loan	-0.064	0.097	0.117	0.095
Medical bills	-0.064	0.172	-0.045	0.163
Mortgage (no mortgage)				
Have mortgage	-0.225**	0.086	-0.063	0.088
Mortgage underwater	-0.905**	0.196	-0.655**	0.189

Table 3 Continued. Results of Hierarchical Regression Predicting Financial Satisfaction Levels (n = 3,142)

	Model 1		Model 2	
Variable	B	SE B	B	SE B
Received financial advice				
Investments			0.153	0.083
Loans			-0.121	0.095
Objective financial knowledge				
Mortgages			-0.372**	0.127
Compound interest			-0.169	0.119
Subjective financial knowledge			0.281**	0.045
Day-to-day matters			0.035	0.040
Math			-0.035	0.038
Computed retirement needs			0.369**	0.088
Risk tolerance			0.119**	0.019
Believe too much debt			-0.198**	0.027
Adjusted R^2		0.473		0.526
F for change in R^2				35.609**

Note: Analyses conducted using normalized population weights and robust standard errors
* $p<.05$, ** $p<.01$

However, holding all else constant, individuals whose homes were underwater were still significantly less financially satisfied as compared to individuals with no mortgage.

Other significant relationships were found between financial satisfaction and financial beliefs and capability. Holding all else equal, individuals who reported computing their retirement needs before retirement and those with higher risk tolerance levels reported higher levels of financial satisfaction, holding all else equal. Disparate results were found between objective and subjective financial knowledge and financial satisfaction. Whereas task specific objective financial knowledge, as measured by an individual's understanding of mortgages, was found to be slightly negatively associated with financial satisfaction, a positive relationship was revealed between subjective financial knowledge and financial satisfaction. No relationship was found between receiving investment or loan advice and financial satisfaction, holding all else equal. Do note that, when employing robust standard errors, the *p* value for the investment advice result was .067.

Two other changes occurred in model two related to variables included in model one. First, those with income between $50,000 and $75,000 were associated with higher financial satisfaction scores than those with income less than $35,000 Second, respondents with separate retirement plans were no longer associated with higher financial satisfaction scores, holding all else constant.

Discussion

This study sought to evaluate the relationship between holding mortgage debt into retirement and financial satisfaction. Through the Life Cycle (LC) and Behavioral Life Cycle (BLC) theoretical frameworks, a complex relationship between mortgage holding and financial satisfaction was expected. This complex relationship was observed within the results of this study through the analysis of data from the 2012 National Financial Capability Study (NFCS). Overall, the results combine to paint an interesting picture of the relationship between mortgage holding and financial satisfaction in retirement.

First, the results provide support for hypothesis one: the inclusion of variables representing the *framing* function of the BLC hypothesis provides more explanatory power in determining financial satisfaction among retired homeowners. This was demonstrated by a statistically significant increase in R^2 of .053 between model one and model two. Second, the results provide support for hypothesis two: a relationship exists between the BLC hypothesis *framing* variables and financial satisfaction after controlling for the LC hypothesis *objective* variables. The BLC hypothesis relaxes the fungibility assumption of the LC hypothesis and suggests that individuals frame their wealth into different money accounts, each of which carry different levels of psychological costs based upon a varying marginal propensity to consume from each account. The framing variables found to be associated

with retiree financial satisfaction after controlling for the block one variables were: (a) objective financial knowledge related to mortgages; (b) subjective financial knowledge; (c) computed retirement needs; (d) risk tolerance; and (e) debt beliefs.

In model one, the LC hypothesis approach suggests that retirees with mortgage debt (whether underwater or with equity) are less financially satisfied than non-mortgage holders, holding all else equal. This is contrary to what would be expected by the LC hypothesis if the mortgage holding strategy produced a wealth maximization outcome. However, the BLC hypothesis analysis of block two permits divergent financial satisfaction outcomes for mortgage holders with equity. Testing of various models by the researchers indicated that the shift in significance for mortgage holders is directly related to the addition of the debt comfort variable. Thus, in the absence of perceived resource constraints associated with debt levels, the use of mortgage debt as a leverage strategy to maximize resources and increase overall lifetime wealth is not associated with decreased financial satisfaction in retirement. However, the use of mortgage debt in retirement to pull resources from current income and transform it into future income may carry psychological costs in situations of perceived resource constraint related to debt levels. The differing results between debt classes in the first model would support previous work that suggested different debts may affect individuals differently (Brown et al., 2005; Plagnol, 2011), although the inability to determine the relative size of the debt loads may lead to some confounding in the results. However, results of the second model suggest that, instead of focusing on the type of debt, it is more beneficial to collect direct measures of individuals' comfort level with their debt. This result aligns with Hira & Mugenda (1998), and suggests that practitioners should limit reliance on rules of thumb like those suggested by Rose (2013) and Moss (2014). Furthermore, these results would tend to be supported by behavioral economics concepts that suggest framing and mental accounting drive consumer perceptions.

When looking at the magnitude of relationships, significant evidence indicated the importance of financial fundamentals. Specifically, the magnitude of the relationships between financial satisfaction and the presence of an emergency fund and difficulty paying bills were the highest noted. When combined with results related to spending relative to income and presence of an income shock, the important role of budgeting and access to liquid assets in an individual's financial life is reinforced. The ability of a financial counselor to affect an individual through basic financial education, budgeting, and balance sheet analysis appears to be quite large.

Limitations and Future Research

There are some notable limitations to this study. Foremost, detailed information about an individual's loan-to-value ratio was not available, causing mortgages to be lumped together. Although the data did allow for the separation of individuals who have underwater mortgages, a broad range of mortgages and loan-to-value ratios were combined. The differing results between mortgage holders with equity and those that are underwater may suggest the need and importance of a future analysis directly employing loan-to-value ratios. Additionally, despite data about the presence of assets, little to no information was available regarding the value of these assets or an individual's net worth. Although the effect of these omissions should be mitigated by the inclusion of control variables related to difficulty paying bills and general asset ownership, further research should be conducted with more detailed loan and asset information.

Implications

This study provides insights into the relationship between holding mortgage debt into retirement and financial satisfaction that may be useful for financial planners, counselors, and educators. Results suggesting there is no relationship between holding a mortgage in retirement (for those that were not underwater) and financial satisfaction after controlling for an individual's financial capability (objective financial knowledge, subjective financial knowledge, and calculation of retirement needs) and financial beliefs (debt beliefs and risk tolerance) may be particularly enlightening for financial planners and counselors and highlight the importance of considering an individual's internal characteristics when evaluating financial strategies. It should be noted that a strong negative effect of mortgage debt on financial satisfaction was consistently observed for households that were underwater as compared to those without a mortgage, suggesting that distress still occurs for households in these situations.

In practice, financial planners may find it useful to discover their clients' beliefs about debt when evaluating debt-related financial strategies in retirement. This discovery process may assist financial planners in developing recommendations that align with their clients' perspectives. The use of open-ended questions may be a useful tool in discovering clients' perspectives as they tend to illicit more thorough responses

than closed-ended questions. For example, an open-ended question such as: "Tell me how you feel about your current mortgage debt," may encourage a more thoughtful response than a closed-ended question, such as: "Do you think you have too much mortgage debt?" Furthermore, a client intake form could include a Likert-type scale to assess current beliefs about existing mortgage debt, such as: "On a scale from 1 (*strongly disagree*) to 5 (*strongly agree*), to what extent do you agree with the following statement: I have too much mortgage debt." The 8-item In Charge Financial Distress/Financial Well-Being Scale is another tool for financial advisers to measure these concepts and monitor any changes after strategy implementation (Prawitz et al., 2006). If a financial planner feels uncomfortable discussing such beliefs or handling the emotions this discussion might reveal, a financial counselor or financial therapist may be able to assist in exploring these areas.

Results of this study also indicate that retirees with higher financial risk tolerance experience higher levels of financial satisfaction. Due to the increased financial risk typically associated with leveraging assets, financial planners may need to understand their clients' willingness to accept this risk in order to evaluate the potential impact to their clients' financial satisfaction. In terms of financial capability, somewhat paradoxical results indicate that those with higher task specific financial knowledge about mortgages report lower levels of financial satisfaction, while conversely subjective financial knowledge was positively associated with financial satisfaction. These divergent relationships have been found in previous work with the 2009 NFCS data (Xiao et al., 2014). These knowledge results suggest people who think they know more subjectively are likely to be more satisfied, whereas those who are objectively more knowledgeable appear to report lower satisfaction levels. Further research is needed to tease out this relationship, as it appears increased objective knowledge levels may lead people to be harsher in their evaluation of their financial situation, holding all else equal. Overall, it may be beneficial for financial professionals to discover their clients' financial knowledge perceptions prior to delivering objective financial education when discussing a mortgage-related strategy.

Finally, financial fundamentals continue to be an important component to financial satisfaction. Financial planners and financial counselors can facilitate financial satisfaction by assisting clients in developing an emergency fund, navigating an income shock, and developing the ability to pay their bills. Furthermore, retirees who calculate their retirement needs prior to retirement have higher levels of financial satisfaction. The significant effects of these planning fundamentals on financial satisfaction highlight the impact that planners can have in a client's life simply by focusing on the basics. It is important to note that no relationship was found between the receipt of loan counseling or the receipt of investment advice and financial satisfaction. More research is needed to understand these results.

In summary, the decision to continue to hold mortgage debt into retirement is complex and highly dependent upon each client's unique emotional and financial circumstances. Financial professionals are trained to quantify the numbers, yet this study highlights the notion that the numbers may not provide the answer that is best suited for each client. Understanding and incorporating a client's financial capability and beliefs into planning actions may provide for more tailored recommendations and potentially improve financial satisfaction.

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