

Does Financial Sophistication Matter in Retirement Preparedness of U.S Households? Evidence from the 2010 Survey of Consumer Finances

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Abstract

We extend previous studies of retirement adequacy by testing the effect of financial sophistication on projected retirement adequacy. In an analysis of the 2010 Survey of Consumer Finances (SCF) dataset, we found that only 42% of households are adequately prepared for retirement compared to 58% in 2007. We tested the effects of three proxies for financial sophistication based on previous studies: (1) education, (2) use of financial planning services, and (3) understanding of the SCF survey questions. Our multivariate analysis shows that households with college education are more likely to have an adequate retirement than those with less than high school. Households using a financial planner are more likely to have an adequate retirement than non-user households. However, good understanding of the SCF survey questions is not significantly related to the likelihood of having an adequate retirement.

Keywords: Financial Sophistication, Retirement Adequacy, 2010 Survey of Consumer Finances (SCF)

Introduction

Lusardi and Mitchell (2011) concluded that lack of financial sophistication is one of the reasons for retirement plan failure. A link between financial sophistication and people's success in retirement has been developed by previous researchers. Most of the past financial sophistication studies analyzing the link, however, have focused on retirement preparedness of workers age 51 and older by using Health and Retirement Study (HRS) datasets. Relatively little research on financial literacy has been conducted on younger persons. Therefore, the main purpose of this study is to investigate the impact of financial sophistication on retirement adequacy of U.S. households, including those with heads under age of 51. We use the most recent dataset of the Survey of Consumer Finance (SCF), the 2010 dataset, released in April, 2012. Since the SCF does not provide direct measurement of financial sophistication, we propose three proxies based on previous literature.

Methods

Data and Sample Selection

In this study, the 2010 SCF dataset is used to test the relationship between proxies for financial sophistication and projected retirement adequacy. The Federal Reserve Board has triennially released the SCF since 1983, and the most recent survey, released in April 2012, is the 2010 SCF. Our analytical sample is composed of households with a head and/or spouse/partner who is age 35 to 70, and employed full time, based on previous retirement studies such as Yuh, Montalto and Hanna (1998), Yao, Hanna and Montalto (2003), and Chen (2007).

Dependent Variable

The dependent variable is a dichotomous indicator of projected retirement adequacy coded as 1 if the replacement ratio is greater than the benchmark replacement ratio, otherwise it is coded as 0. We calculate the mean income replacement ratio (IRR) by using Chen's (2007) retirement income stage method, with benchmark ratios for different income levels estimated from the 2010 Consumer

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Expenditure Survey. Each household's IRR is compared to the benchmark ratio for that household's income category, and if the household's IRR is at least as high as the benchmark, it is counted as having retirement adequacy. For the multivariate analysis, we use logistic regression (logit), which is widely used for analyzing the relationship between several explanatory variables and a binary outcome.

Independent Variables

The SCF does not provide a direct measurement for financial literacy or sophistication. Based on research related to financial sophistication, we use three proxies for financial sophistication three proxies of financial sophistication: (1) education, (2) use of financial planning services, and (3) understanding of the SCF survey questions. In this study, highest educational attainment of the household is coded as five dummy variables: less than high school, high school graduate, some college, bachelor degree, and post-bachelor degree. Moreover, the SCF has a variable with the interviewer's assessment of how well the respondent understood the SCF questions, with four levels, excellent, good, fair, and poor. For the purpose of this study, we code responses of excellent and good understanding as good understanding of the SCF survey, and responses of fair and poor understanding as not having good understanding of the SCF survey. Lastly, we create a dummy variable of financial planner usage based on the respondent reporting that a financial planner was used for savings and investment decisions. In addition to the financial sophistication variables, demographic variables, economic status variables, and financial attitude variables are used as independent variables.

Results

Descriptive patterns of projected retirement adequacy by three financial sophistication proxies are shown in Table 1. The proportion of retirement adequacy is highest, at 53%, for households having a post-bachelor degree, compared to 46% for households with a bachelor degree, 41% for households with some college, 32% for those with a high school diploma, and 16% for those with less than high school. Households using a financial planner have higher projected retirement adequacy (50%) than do non-users (38%). Only 31% of households with poor understanding of the survey questions but 43% of households with good understanding of the survey questions are adequately prepared for retirement. There are significant differences of mean projected retirement adequacy for each proxy.

Table 1

Projected Retirement Adequacy by Proxies for Financial Sophistication, Bivariate Analysis (Means Test)

Variable	Category ^a	Retirement Adequacy	Mean Difference ^b	P-value ^c
Education of household	Post-bachelor	53.4%	37.5%	<.0001
	Bachelor degree	46.1%	30.2%	<.0001
	Some college	41.3%	25.4%	<.0001
	High school graduate	31.8%	15.9%	<.0001
	Less than high school	15.9%	N/A	N/A
Use of a financial planner for savings and investment decisions	Yes	49.9%	11.5%	<.0001
	No	38.4%	N/A	N/A
Good understanding of SCF survey questions	Yes	42.8%	11.7%	<.0001
	No	31.1%	N/A	N/A

^a The reference category used in the means test is indicated in bold face.

^b Weighted data; RII technique is used

^c Significance test is for mean difference from reference category for each variable.

The logit results of financial sophistication proxies, demographic, economic status, financial status affecting households' projected retirement adequacy are presented in Table 2. College educated households are more likely to have projected retirement adequacy than those with less than a high school education. Households using a financial planner are more likely to have an adequate retirement than otherwise similar households not using a financial planner for savings and investment decisions. The 2-tail p value shown in Table 2, 0.0535, is greater than the usual .05 threshold for significance, but because we tested a directional hypothesis, it is reasonable to divide the p value by 2 for a 1-tail test (c.f., Wang & Hanna, 2007). Therefore, the effect of using a financial planner can be judged to be significant. Interviewer assessment of the respondent as having good understanding of the SCF survey is not related to the likelihood of having an adequate retirement. The likelihood of having an adequate retirement is lower for those who expect to retire before 62 than for those who expect to retire at 62 or after. Households with a head age 25 to 34 are less likely and those with a head age 65 to 70 are more likely than those with a head age 35 to 44 to have retirement adequacy. Having a defined benefit pension and having a defined contribution pension are positively related to the likelihood of adequate retirement. This result is consistent with empirical results reported by Yuh, et al. (1998), Chen (2007), Kim, Chen and Hanna (2012). The likelihood of retirement adequacy increases with normal income. Households willing to take average or above average risk are more likely to have retirement adequacy than those unwilling to take any risk. Couple and single male households are more likely to have an adequate retirement than single female households. The 83.7% concordance shows the model does a very good job of predicting retirement adequacy.

Table 2

Logistic Regressions of Retirement Adequacy based on the 2010 SCF

Variable	Coefficient	2-tail p-value ^a	Standard Error	Odds Ratio
Education of household (reference category: less than high school)				
High school	0.5922	0.0118	0.2353	1.808
Some college	0.6155	0.0124	0.2461	1.851
Bachelor degree	0.8560	0.0004	0.2418	2.354
Post-bachelor degree	0.8286	0.0016	0.2621	2.290
Use of financial planner	0.2097	0.0535	0.2097	1.233
Good understanding of the SCF survey questions	-0.0206	0.9153	-0.0206	0.980
Expected retirement age (reference category: before 62)				
62 ≤ Retirement age ≤ 65	0.6677	<.0001	0.1389	1.950
65 < Retirement age ≤ 70	0.6743	<.0001	0.1382	1.963
Have defined contribution plan	0.4191	<.0001	0.1032	1.521
Have defined benefit plan	0.4816	0.0005	0.1381	1.619
Log of income	0.5953	<.0001	0.0565	1.814
Age of head (reference category: age 35 to 44)				
25 – 34	-1.2544	0.0277	0.5699	0.285
45 – 54	-0.0401	0.7329	0.1175	0.961
55 – 64	0.0937	0.4883	0.1351	1.098
65 – 70	1.1428	<.0001	0.2680	3.136
Couple vs. single (reference category: single female)				
Couple	0.6595	<.0001	0.1454	1.934
Single male	0.3522	0.0555	0.1840	1.422
Racial-ethnic category (reference category: White)				
Black	-0.1898	0.2481	0.1643	0.827
Hispanic	-0.2283	0.2006	0.1783	0.796
Asian or others	-0.2386	0.3259	0.2429	0.788
Risk tolerance (reference category: Take no risk)				
Average risk	0.4339	0.0004	0.1224	1.543
Above average risk	0.5741	0.0002	0.1537	1.776
Substantial risk	0.3698	0.1745	0.2724	1.447
Concordance (mean)	83.7%			

^a Unweighted RII analysis of 2010 SCF dataset.

Discussion

To project retirement adequacy, this study follows Chen's (2007) retirement income stage method. By comparing the income replacement ratio with benchmark ratios we found that about 42% of households are adequately prepared for retirement. Compared to Kim et al.'s (2012) result, the overall proportion of retirement adequacy dropped by 16 percentage points between 2007 and 2010. One plausible reason would be the financial impact of the economic recession that began in December 2007.

We tested for the effects of three proxies for financial sophistication based on previous studies: (1) education, (2) use of financial planning services, and (3) understanding of the SCF survey questions. Each of these proxies was related to increased likelihood of retirement adequacy in the descriptive analyses. Two of the proxies were related to retirement adequacy when controlling for the effects of other variables. Our multivariate analysis shows that households with college education are more likely to have an adequate retirement than those with less than a high school education. Households using a financial planner are more likely to have an adequate retirement than non-user households. However, good understanding of the SCF survey questions is not significantly related to the likelihood of having an adequate retirement.

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