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UNDERSTANDING DEBT IN THE OLDER POPULATION

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Abstract

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JEL Classification: G40, G41, G51, G53, H31

Keywords: retirement, debt, medical bills, Student Loans, Mortgages, financial literacy, financial fragility

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December 12, 2020

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1. Introduction

Recent research has demonstrated that older Americans are increasingly likely to carry debt into retirement, and over time, the volume of that debt has also grown substantially (Lusardi and Mitchell, 2020; Lusardi, Mitchell, and Oggero, 2018, 2020a). This reality is giving rise to concerns regarding retirement security for several reasons. For one, the increased debt burden may affect how much older persons can contribute to their retirement accounts and how they will manage their retirement savings. Additionally, when interest rates rise, near-retirees and retirees will be required to allocate larger fractions of their income to service their debts. Rising debt can also prompt delayed retirement in order to recover one's financial standing.

In this paper, we first evaluate an experimental debt module that we devised and fielded in the 2018 U.S. Health and Retirement Study (HRS), seeking to better understand older persons' attitudes toward and understanding of debt. To this end, we have developed a new set of questions permitting us to examine how people perceive their financial situations and the role of debt. While there are many studies about wealth and wealth accumulation, we know much less about debt and debt management, and many data sets provide only information on highly aggregated measures of debt.¹ In our module, by contrast, we are able to examine the prevalence of debt in the form of student loans and unpaid medical bills, evaluate peoples' assessment of their credit records, and examine their understanding of fundamental concepts related to debt such as interest compounding. This information is helpful in evaluating debt and debt management close to retirement. Second, we examine the same age group using the 2018 National Financial Capability Study (NFCS), a survey we also helped design, to better understand debt among older respondents, in addition to assessing whether findings from our HRS module are confirmed in larger samples.

We contribute to the literature in three ways. First, we collect new data on debt close to retirement, a topic which is becoming very important both for academic research and policy. Second,

¹ For some of the few exceptions to this point, see M. Brown et al. (2020), J. Brown, Dynan, and Figinski (2020), and Li and White (2020).

we show that, even in later life, people face many difficulties managing their debt. This can inform studies on both financial literacy and personal finance. Third, we highlight the need for researchers and policymakers to devote attention to two specific types of debt, student loans and medical debt, and also to especially vulnerable groups such as African-Americans, women, and the least-educated. These topics are of growing importance in the current economic climate, though many of these issues were beginning to be evident even prior to the COVID-19 crisis.

Results in both the HRS and the NFCS document that many older Americans do carry debt close to retirement. These individuals are also more likely to have dependent children and have faced negative income shocks, leading to them feeling over-indebted and dissatisfied about their financial situations. People most subject to financial distress are being contacted by debt collectors, hold outstanding student loans, and carry medical debt. The least-educated, low income, African-Americans, and women prove to be the most vulnerable. Conversely, we show that financial literacy contributes to positive financial perceptions and behaviors, such as reporting an above average credit record and planning for retirement.

In what follows, we first describe our datasets and methodology. Next, we report our findings from the 2018 HRS debt module, providing both descriptive statistics and results from multivariate analyses to assess who is most affected by debt and financial outcomes related to debt. Next, we turn to the 2018 NFCS which includes larger sample of older respondents; with this, we shed additional light on the effects of debt close to retirement. A final section offers a discussion and conclusions.

2. Methodology and Data

First, we turn to one of the best datasets on older Americans, the Health and Retirement Study (HRS). The HRS is a nationally representative longitudinal survey following persons over the age of 50 every other year until they die or otherwise attrite from the sample. For this survey, we designed a special experimental module to gain a better understanding of debt, including its effects on household well-being. In 2018, the module was offered to 1,679 HRS participants; of these, 1,336

individuals agreed to fill it out, resulting in an 80% response rate (in line with other modules). Our study sample of people age 51-61 has 446 observations. To help assess whether the high levels of debt we observe at older ages are a cause for concern, we take as a frame of reference the intertemporal economic model which posits that people save to protect against shocks and for retirement. By focusing on respondents age 51-61, we can study respondents close to or at the peak of their wealth accumulation, and before they are eligible to claim their Social Security benefits. We then link the module responses to a rich variety of other variables available in the core HRS for these same respondents, to generate insights into debt and debt management.

Our goal is to evaluate the causes and consequences of debt late in life, and whether, in the spirit of intertemporal decision making models, people anticipated having the amount of debt they currently have. Specifically, in addition to a question about planning related to debt, the module asked about whether people were satisfied with their financial situations, whether they believed they had too much debt, how they rated their credit records, and whether they had student loans outstanding (on their own account or for partners/children/grandchildren). In addition, we asked whether they had past due medical debt, as this type of debt is becoming increasingly common for Americans (Lusardi and Mitchell, 2020). To judge the severity of their debt, we also asked respondents whether they had been contacted by debt collectors. Finally, our module asked a question about interest rates in the context of debt, namely whether people knew how many years it would take for a loan at a 20% interest rate to double, to assess whether basic financial knowledge most relevant for debt and debt management was associated with larger debt burdens. These questions were inspired by our prior research documenting a rise in debt close to retirement and they aim to shed light on how we can interpret the statistics related to debt at older ages (Lusardi, Mitchell, and Oggero, 2020b).

Many, but not all, of our HRS module questions were also present in the National Financial Capability Study (NFCS), an online survey commissioned by the FINRA Investor Education Foundation (FINRA, 2018). Below, we use the 2018 wave to assess debt data for persons in the same

age range as in the HRS, but now for a larger set of observations. This survey provides uniquely valuable information on how households manage their assets and liabilities, including subjective measures of financial distress and debt burden. In particular, the 2018 NFCS added several new questions about how people perceived their personal financial situations. The NFCS also includes information on the potential determinants of financial perceptions and behaviors, such as negative income shocks. Finally, and very importantly, the NFCS has included a set of financial literacy questions since its inception in 2009, which have become known as the Big Five (Hastings, Madrian, and Skimmyhorn, 2013).² These questions permit us to assess respondents' understanding of basic concepts related to interest rates, inflation, risk diversification, bond prices, and mortgages. In more recent waves, there is also a question on interest compounding in the context of debt, the same question included in the HRS module. As in the HRS, we focus on respondents age 51-61 to look at 4,422 respondents on the cusp of retirement.

In what follows, we first offer a descriptive overview of each dataset followed by a multivariate analysis of the responses to the new questions of interest. The key survey questionnaires are provided in Appendices A and B. While the most recent data we have available refer to 2018, this analysis can shed light on older Americans' vulnerability to the COVID-19 pandemic.

3. Debt at Older Ages in the HRS

The bottom panel of Table 1 reports the demographic characteristics of our HRS sample, combining the debt module with the HRS core data.³ About 58% of the respondents were women; most were married, white, and had at least a high school degree. Moreover, many respondents (69%) stated they were in good health or better. Household income averaged \$103,000 and average net assets amounted to \$274,000. Thus, this is a sample of relatively high-asset and high-income respondents.

² One of the authors designed those questions in collaboration with the NFCS data team.

³ Appendix A describes all key HRS variables.

Table 1 here

The top panel of Table 1 provides an overview of key financial perceptions and behaviors, differentiating between positive versus negative ones. Starting with the positive outcomes, we find that only about one quarter (24%) of the HRS respondents in our age range (51-61) were completely/very satisfied with their personal financial situations, and only around two-fifths (39%) believed they had very good/excellent credit scores. Turning to the negative perceptions, we find that about two-fifths (41%) of respondents agreed/strongly agreed that they had too much debt, and almost one-quarter (23%) said that they had been contacted by a bill collector in the previous year. These are disquieting percentages, given that these are older respondents who should be close to the peak of their wealth accumulation. Moreover, about one-quarter (24%) indicated that they had unpaid/past due bills from a healthcare or medical service provider, while 15% had outstanding student loans for themselves or partners. We consider outstanding student loans as a negative behavior because of the age range considered, with such individuals having only limited possibilities to take advantage of long-term payoffs from education. Overall, these statistics indicate that debt looms large for substantial groups of pre-retirees, perhaps because of their inability to manage their debt appropriately.

This interpretation is supported by additional evidence about older persons' lack of understanding regarding interest compounding in the context of debt. When asked how long it would take for debt to double if a loan's interest rate was 20%, fewer than one-third (31%) of our older respondents could answer this correctly. Evidently, financial illiteracy regarding compound interest is a widespread phenomenon, even in the older population, despite the fact that this group has likely already dealt with several types of debt over their lifetimes. When it comes to financial literacy, experience does not seem to be a great teacher, confirming earlier findings (Lusardi and Mitchell, 2014). We also find that most of our older respondents (66%) indicated that 10 years earlier, they had given no thought to how much debt they would hold today.

The top panel of Table 2 reports the extent of heterogeneity in positive financial perceptions and behaviors among this older population. Generally speaking, the more financially satisfied were more likely to be men, college-educated, higher income, and white. A similar pattern applies to peoples' beliefs that they had a good credit score; in fact, whites were twice as likely to report having good credit scores compared to nonwhites. The least-educated systematically reported less satisfaction with personal finance and worse credit scores.

Table 2 here

The lower panel of Table 2 reports which types of respondents felt they had too much debt. Women, the less educated, those with low income, and nonwhites were all far more likely to report feeling overburdened by debt, with the largest difference between whites (37%) versus nonwhites (47%). Whereas almost one-quarter (23%) of this population had been contacted by a debt collector, the rate was higher among low-income households (31%) and high school dropouts (28%). Women were more likely (29%) to report having unpaid medical bills than men (20%), and low-income respondents versus their highest paid counterparts (13%). Nonwhites (28%) were more likely to report having unpaid medical bills than whites (21%). Differences by sociodemographic status were narrower for student loans, though again 17% of the older women said they held these, versus 12% of the men. The college educated and higher paid were more likely to have student loans; these loans therefore appear to be carried into later life. The final row of Table 2 shows that lack of thought to debt was more prevalent among the least educated (76%), those with low income (79%), and nonwhites (77%). In sum, a majority of the HRS respondents confirmed that they had devoted very little attention to financial planning for later life, including planning related to debt.

To assess how peoples' positive and negative financial perceptions and behaviors are associated, Table 3 reports simple correlations between the key outcomes measured in the HRS module. Two things stand out. First, those who have medical debt are also likely to be contacted by debt collectors; the correlation coefficient is as high as 0.55, highlighting that this type of debt is quite likely to have negative consequences. Medical debt is also highly correlated with the feeling of having

too much debt (0.35). Thus, even in this sample of higher-asset and higher-income older respondents, many feel that medical debt is out of control and creates repayment problems. Second, having too much debt is highly negatively correlated with peoples' satisfaction with their own personal finances. Other results are commensurate with expectations. The least financially satisfied had student loans, and they were less likely to have given thought to debt 10 years previously. In sum, debt and debt mismanagement behaviors appear to have serious implications for older people's financial situation and well-being. Next, we examine which variables are associated with these outcomes.

Table 3 here

Tables 4 and 5 offer multivariate analyses of the positive and negative financial perceptions and behaviors, respectively. In each case, we estimate OLS models; nonlinear models are not essential in our case (and the OLS models are easier to interpret). The first column of both tables includes only sociodemographic controls, an indicator of whether the respondent knew the correct answer to the interest compounding question, and household income indicators (by quartile). The subsequent column adds to these controls total net wealth (by quartiles) to account broadly for different levels of resources.

Tables 4 and 5 here

Table 4 focuses on the two positive outcomes: whether people reported that they were satisfied with their personal finances, and whether they believed that their credit scores were at least good or better. Factors not consistently linked to positive financial outcomes include education, being married, and race. Nevertheless, having more children was negatively associated with personal financial satisfaction and credit scores, by 2-3 percentage points (equivalent to 9% and 7% changes on a base of 0.24 and 0.39, respectively). Being in good/excellent health was associated with a 52% higher probability of being financially satisfied (12 percentage points on a base of 0.24), and a 31% higher probability of reporting better credit scores (12 percentage points on a base of 0.39), perhaps because these people had smaller medical bills. Interestingly, the variable measuring knowledge of

interest compounding was not statistically significantly associated with either outcome. All told, our set of controls account for at most one-quarter of the variation in outcomes.

Results in Table 5 summarize the factors associated with five negative financial perceptions and behaviors, namely whether the respondent reported having too much debt, had been contacted by a debt collector, had unpaid medical bills, had a student loan (for self or partner), or had given no thought to debt 10 years prior. As anticipated from the statistics reported above, women were 11 percentage points (or 47% on a base of 0.24) more likely to indicate they had unpaid medical bills. Older individuals were slightly less likely of not having thought about debt a decade earlier, and 3 percentage points (or 8% on a base of 0.41) less likely to report having too much debt, even after controlling for many variables. Nevertheless, relatively few controls were systematically and robustly linked to negative financial outcomes. Those with more children were weakly more likely to have been contacted by a debt collector or have given no thought to debt a decade prior, but not to having unpaid medical bills or student loans. Those with some college were 14 percentage points (or 96% on a base of 0.15) more likely to hold student loans, possibly meaning that they did not complete the educational program for which they borrowed money and still had to repay their student debt. Moreover, they were 18 percentage points (or 77% on a base of 0.24) more likely to report having unpaid medical bills, all else equal. By contrast, those in good health were 16 percentage points (or 72% on a base of 0.23) less likely to report being contacted by debt collectors. The lowest-income households were not more likely to report negative financial outcomes, though being wealthier was strongly correlated with fewer negative outcomes. Finally, knowing about interest compounding and debt was not statistically associated with positive outcomes. Insights about who does some financial planning, as reported in the last column of Table 5, are also useful. Here we see that older individuals were slightly more likely to have thought about debt. Different from the other negative behaviors, being white and college-educated was associated with a 15% and 29% lower probability of not having planned for debt, respectively (10 and 19 percentage points on a base of 0.66). No significant differences were found for women, those in better health, or by income; moreover, only those in the

highest wealth quartile appeared to have thought about debt a decade earlier. Finally, those who answered the interest compounding question were no more likely to have thought about debt 10 years previously than their less-informed counterparts.

While there is no single strong driver of the negative financial perceptions and experiences summarized in Table 5, some groups such as women and the less educated do emerge as persistently vulnerable. Health is also a very important factor, and perhaps one of the channels it affects financial well-being is via the cost of health care. Overall, the evidence suggests that researchers must look beyond preferences and economic circumstances to understand debt and outcomes related to debt. It also shows that some groups who were subsequently hit particularly hard by the COVID-19 pandemic were already vulnerable before the spread of the virus.

In overview, then, the HRS dataset confirms that, despite being on the verge of retirement, a sizeable proportion of older Americans expresses negative financial satisfaction and carries debt, including student loans and unpaid medical bills. Debt management is also a concern, in view of the fact that so many of our respondents were contacted by debt collectors, thought they had too much debt, and had failed to plan about debt 10 years prior. We turn now to the NFCS, with its larger number of observations and additional questions, to help us understand these and other facets of debt behavior close to retirement.

4. Findings in the NFCS

The NFCS sample size for the same age group is roughly 10 times larger than the HRS module examined above; accordingly, estimated effects should be measured with more precision here than in the smaller HRS debt module. The NFCS contains a set of questions comparable to those in the HRS to assess debt at older ages. Moreover, the NFCS included additional questions relevant to

understanding debt and debt management. For example, the NFCS included the Big Five financial literacy questions in addition to the interest compounding question.⁴

We start by examining the questions most similar to those in the HRS module. The top panel of Table 6 shows that only 33% of the older NFCS respondents were satisfied with their personal financial situations (answering 8 to 10 out of a 10-point scale), similar to the HRS respondents. Almost three-fourths of the NFCS sample (70%) believed they had above-average credit records. While the NFCS does not ask about planning related to debt, we have information on whether people have planned for retirement, a variable which has been shown to be a strong predictor for wealth accumulation (Lusardi and Mitchell, 2014). Among our respondents, a little over half (55%) said they had tried to figure out how much to save for retirement.

Table 6 here

While the top panel of Table 6 displays positive financial perceptions and behaviors, the lower panel reports negative outcomes. Once again, the NFCS data confirm the HRS results: over one-third (36%) of older adults reported being over-indebted. Specifically, on a scale from 1 to 7, they answered 5, 6, or 7 to the question, “How strongly do you agree or disagree with the following statement? ‘I have too much debt right now.’” Moreover, 15% had been contacted by a debt-collection agency in the previous year, 20% had unpaid medical bills that were past due, and 9% had student loans for themselves or spouses and partners. Again, these percentages underscore the fact that older Americans are likely to carry debt not only close to but also into retirement.

We also note that the NFCS asked respondents the interest compounding question cited above. Here we find again that fewer than one-third (32%) of older adults could answer the question correctly, and 43% overestimated the amount of time it would take for debt growing at 20% to double (consistent with the 45% reported in the HRS). Accordingly, both datasets confirm that older people have limited knowledge about interest compounding, even though many hold debt close to retirement.

⁴ More information about these questions and summary statistics on sociodemographics of the NFCS analysis sample are provided in Appendix B.

When we look at the Big Five financial literacy questions, we see that older respondents were also uninformed about other and even simpler economic concepts, such as the workings of inflation, risk diversification, mortgages, and basic asset pricing. On average, older respondents were able to answer only 3.25 of the five financial literacy questions.

Table 7 reports correlations for positive and negative perceptions and behaviors. As before, there is a strong positive correlation (0.49) between having unpaid medical bills and being contacted by a debt collector. Both variables are also strongly positively correlated with having too much debt (0.32/0.33) and negatively correlated with personal finance satisfaction (-0.22). Having student loans is also strongly positively correlated with having too much debt (0.19), underscoring the difficulty of carrying this type of debt close to retirement.

Table 7 here

Tables 8 and 9 dig more deeply into the NFCS data using multivariate models of individuals' financial perceptions and behaviors, similar to the HRS analysis. Here we again explore both positive and negative outcomes associated with sociodemographic controls similar to those used previously, along with two additional important pieces of information available in the NFCS. The first indicates whether respondents had experienced a large and unexpected income drop in the previous year, and the second is a comprehensive measure of respondents' financial knowledge. In particular, we constructed a financial literacy index ("Big 5 FinLit"), which is the sum of the correct answers to the Big Five financial literacy questions.⁵ In addition, we include a separate question identical to that asked in the HRS module on interest compounding knowledge to be able to compare the results.

Tables 8 and 9 here

Table 8 reports results for positive perceptions and behaviors, where the responses equal 1 if the respondent indicated satisfaction with his/her personal finances (a score greater than 8 out of a 10-point scale), or having at least a good credit score, and 0 otherwise. In the NFCS, we also have

⁵ Appendix B reports the Big Five financial literacy questions.

information on retirement planning, set equal to 1 if the respondent had planned for retirement and 0 otherwise. As above, we use OLS estimation.

Here too, and confirming the HRS evidence, older people are slightly more likely to be satisfied with their personal financial conditions and report having a good credit score. The larger NFCS sample size provides additional statistical power to the results here, in that married persons were more likely to have positive financial perceptions; singles were 5 percentage points (or 9% on a base of 0.55; see Appendix Table B) less likely to have planned for retirement, and separated/divorced individuals were between 9% and 16% less likely to report all the positive financial perceptions and behaviors. Also, widowed persons were less satisfied with their credit scores and less likely to plan for retirement. Having dependent children again contributed to poorer financial satisfaction, lower credit scores, and less retirement planning. We also show that African-Americans were significantly less sanguine about their financial situations: they were 18 percentage points less likely to report good credit scores compared to whites (25% on a base of 0.70). Interestingly, better-educated respondents were more likely to report good credit scores and plan for retirement, but their financial satisfaction was no better than average. Individuals who had experienced an income shock in the previous year were 14 percentage points (or 21% on a base of 0.70) less likely to report good credit scores, and 15 percentage points (or 45% on a base of 0.33) less likely to be satisfied with their personal finances compared to those without such an income shock.

As noted above, the NFCS includes the questions needed to construct respondents' financial literacy index, which we lacked in the HRS module. In the NFCS, this index was positively related to reporting good credit scores and planning for retirement, even above and beyond the role of education. In particular, being able to answer one additional financial literacy question correctly was associated with a 11% higher probability of planning for retirement (6 percentage points on a 0.55 base) and a 4% rise in the chance of reporting good credit scores (3 percentage points on a 0.70 base). Confirming the HRS evidence, those who could answer the interest compounding question correctly in the NFCS were not systematically more likely to express positive views of their financial situation,

although they were more likely to say they planned for retirement. Thus, the interest compounding question alone may be insufficient to capture financial knowledge affecting older persons' debt outcomes; instead, a more comprehensive set of financial skills is needed to explain debt at older ages.

Table 9 reports multivariate results of four negative perceptions and behaviors related to respondents' debt position in the NFCS data. Here again we see that older individuals were less likely to report having too much debt, being contacted by a debt collector, holding medical debt, and having student loans for themselves or partners. The fact that indebtedness and over-indebtedness decrease as people age echoes what has been found in prior HRS studies as well (Lusardi, Mitchell, and Oggero, 2020a). This implies that debt continues to be repaid at older ages, though debt remains pervasive among people approaching retirement and there are signs of financial distress, as indicated, for instance, by the percentage of older people contacted by debt collectors.

In Table 9 we also see that having dependent children contributes to feeling over-indebted among older individuals, by 8 percentage points (or 21% on a base of 0.36). Moreover, African-Americans were disproportionately more likely to report negative debt perceptions and behaviors, despite controlling on income and other demographic characteristics: they were 9 percentage points (or 59% on a base of 0.15) more likely to be contacted by a debt collector, 9 percentage points (or 44% on a base of 0.20) more likely to have unpaid medical bills, and 11 percentage points (or 120% on a base of 0.09) more likely to have student loans. Interestingly, people reporting an income shock were up to 22 percentage points more likely to report any of the four negative outcomes, exacerbating their debt situations. In particular, they faced a sharply higher probability to be contacted by a debt collector (a 119% increase on a base of 0.15) and have unpaid medical bills (a 96% increase on a base of 0.20). By contrast, those scoring higher on the financial literacy index questions were slightly less likely to report negative debt perceptions, while those who knew the correct answer to the interest compounding question were similar to those who did not. Accordingly, we conclude that having basic

and general financial literacy helps limit debt exposure at older ages.⁶ We are able to explain up to 14% of the variation in the dependent variables for negative outcomes, and 25% for positive perceptions.

Given the large sample size in the NFCS, we also considered a narrower age group (56-61) to look at respondents very close to retirement, to determine whether results changed and whether debt was concentrated among the younger versus the older age group. In results not detailed here, we show that findings are similar overall, i.e., there is evidence of distress related to debt even in the older age group.⁷

5. Conclusions and Implications

Our analysis of two rich datasets on older Americans confirms that many older individuals carry debt even as they near retirement. This turns out to have consequences: many felt that the debt they held was excessive, creating stress and problems including being contacted by debt collectors. Our analysis also highlights the importance of demographic characteristics, such as being nonwhite, having low income, having children, and being separated or divorced, as drivers of negative outcomes. The HRS data show that older women were almost 50% more likely to indicate they had unpaid medical bills; conversely, being in good health was associated with a much higher probability (52%) of being financially satisfied, and a larger chance (31% higher) of reporting better credit scores. The NFCS dataset highlights the negative role of being hit by shocks and the positive role of financial literacy. Specifically, individuals experiencing an income shock in the previous year were less likely to report good credit scores and less likely to be satisfied with their personal finances, while they faced about double the probability to be contacted by a debt collector or have unpaid medical bills. The more financially literate reported more positive financial perceptions and behaviors: being able

⁶ Prior research has demonstrated that loans are complex products for consumers (van Ooijen and van Rooij, 2016), and poor financial literacy increases the likelihood of holding high-cost credit (Disney and Gathergood, 2013), choosing mortgages with larger balloon payments (Gathergood and Weber, 2017) and not taking advantage of refinance opportunities (Barbi and Bajo, 2018).

⁷ For brevity, findings are not reported here but are available from the authors upon request.

to answer one additional financial literacy question correctly was associated with a 11% increase in the probability of planning for retirement and a 4% rise in the likelihood of reporting a good credit score. Accordingly, it is clear that older people also require financial knowledge if they are to better manage their debt exposure. We also found that African-Americans on the verge of retirement were significantly more financially vulnerable than whites.

To date, the household economics literature has devoted relatively little attention to debt and debt management, particularly at older ages. Accordingly, our paper contributes to knowledge by identifying which older individuals may need assistance coping with money mismanagement problems. We also suggest that guidance and training programs could be effective in enhancing financial literacy, capability, and retirement planning/saving outcomes, even at older ages. In other words, in addition to focusing on retirement savings as means to enhance retirement security, it is crucial to understand debt at older ages.

More generally, if we are to better understand how people are positioned to manage their finances in retirement, additional research on older peoples' complete balance sheets would be informative. For instance, in view of the high rates of older peoples' medical debt, more attention could be brought to bear on how to better protect against health shocks and high medical costs in later life. Moreover, the extent and prevalence of student loans at older ages could benefit from additional policymaker attention. Finally, employer-provided retirement security programs could explore not only how to foster savings, but also how to help protect people against high debt as they near retirement. Enhancing financial literacy is another way to help improve a variety of debt-related outcomes at older ages.

References

- Barbi, M., Bajo, E., 2018. Financial illiteracy and mortgage refinancing decisions. *Journal of Banking & Finance* 94, 279-296.
- Brown, J., Dynan, K., Figinski, T., 2020. The risk of financial hardship in retirement: A cohort analysis. In: Mitchell, O.S., Lusardi, A. (Eds.), *Remaking Retirement: Debt in an Aging Economy*. Oxford, UK: Oxford University Press, 60-85.
- Brown, M., Lee, D., Scally, J., van der Klaauw, W., 2020. The graying of American debt. In: Mitchell, O.S., Lusardi, A. (Eds.), *Remaking Retirement: Debt in an Aging Economy*. Oxford, UK: Oxford University Press, 35-59.
- Disney, R., Gathergood, J., 2013. Financial literacy and consumer credit portfolios. *Journal of Banking & Finance* 37(7), 2246-54.
- FINRA, 2018. *The state of U.S. financial capability: The 2018 National Financial Capability Study*. Washington, D.C., USA.
- Gathergood, J., Weber, J., 2017. Financial literacy, present bias and alternative mortgage products. *Journal of Banking & Finance* 78, 58-83.
- Hastings, J., Madrian, B., Skimmyhorn, W., 2013. Financial literacy, financial education, and economic outcomes. *Annual Review of Economics* 1(5), 347-373.
- Li, W., White, J., 2020. Financial distress among the elderly: Bankruptcy reform and the financial crisis. In: Mitchell, O.S., Lusardi, A. (Eds.), *Remaking Retirement: Debt in an Aging Economy*. Oxford, UK: Oxford University Press, 89-105.
- Lusardi, A., Mitchell, O.S., 2014. The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature* 52(1), 5-44.
- Lusardi, A., Mitchell, O.S., 2020. Introduction: Debt in an Aging Economy. In: Mitchell, O.S., Lusardi, A. (Eds.), *Remaking Retirement: Debt in an Aging Economy*. Oxford, UK: Oxford University Press, 1-11.

- Lusardi, A., Mitchell, O.S., Oggero, N., 2018. The changing face of debt and financial fragility at older ages. *American Economic Association Papers & Proceedings* 108, 407-411.
- Lusardi, A., Mitchell, O.S., Oggero, N., 2020a. Debt and financial vulnerability on the verge of retirement. *Journal of Money, Credit and Banking* 52(5), 1005-1034.
- Lusardi, A., Mitchell, O.S., Oggero, N., 2020b. Debt close to retirement and its implications for retirement well-being. In: Mitchell, O.S., Lusardi, A. (Eds.), *Remaking Retirement: Debt in an Aging Economy*. Oxford, UK: Oxford University Press, 15-34.
- Van Ooijen, R., van Rooij, M., 2016. Mortgage risks, debt literacy and financial advice. *Journal of Banking & Finance*, 72, 201-217.

Table 1. Descriptive statistics on key variables: HRS

	N	Mean	St Dev
Positive financial perceptions and behaviors			
Personal finance satisfaction	444	0.24	0.43
Good credit score	419	0.39	0.49
Negative financial perceptions and behaviors			
Too much debt	444	0.41	0.49
Contacted by a debt collector	442	0.23	0.42
Unpaid medical bills	445	0.24	0.43
Own/partner student loan	445	0.15	0.36
No debt thought	436	0.66	0.47
	N	Mean	St Dev
Female	446	0.58	0.49
Age	446	56.71	2.81
Married	446	0.57	0.50
Number of children	446	2.52	1.74
White	446	0.57	0.50
Hispanic	446	0.18	0.39
<High school	446	0.13	0.34
High school	446	0.30	0.46
Some college	446	0.29	0.45
≥College	446	0.27	0.44
Good health	446	0.69	0.46
HH income (/100k, 2018\$)	446	1.03	3.92
Interest compounding knowledge	446	0.31	0.46
Total net assets (/100k, 2018\$)	446	2.74	7.61

Sample: HRS respondents (age 51-61) in the 2018 Debt Module.

Table 2. Demographics of self-reported financial behaviors and perceptions: HRS (%)

	Total	Male	Female	≤High school	Some college	≥College	Income <\$35K	Income \$35K-75K	Income >\$75K	White	Non-white
Positive financial perceptions and behaviors											
Personal finance satisfaction	23.6	25.3	22.5	21.6	20.0	30.8	13.7	25.0	30.8	26.8	19.5
Good credit score	38.7	39.0	38.4	26.4	43.2	52.9	18.2	34.1	55.5	50.6	22.2
Negative financial perceptions and behaviors											
Too much debt	41.0	38.2	43.0	45.1	39.2	36.1	50.6	38.5	34.5	36.6	46.8
Contacted by a debt collector	23.3	20.4	25.4	27.6	23.1	16.7	30.7	26.3	16.0	21.4	25.8
Unpaid medical bills	23.8	16.7	29.0	23.6	30.0	17.5	32.5	31.3	13.3	20.5	28.3
Own/partner student loan	15.3	12.4	17.4	7.2	16.9	26.7	9.7	26.0	14.4	14.6	16.1
No debt thought	66.3	63.7	68.1	76.0	63.0	53.8	78.5	71.3	54.4	58.3	76.7
<i>N</i>	<i>446</i>	<i>187</i>	<i>259</i>	<i>196</i>	<i>130</i>	<i>120</i>	<i>154</i>	<i>96</i>	<i>196</i>	<i>254</i>	<i>192</i>

Sample: HRS respondents (age 51-61) in the 2018 Debt Module.

Table 3. Correlation of self-reported financial behaviors and perceptions: HRS

	Personal finance satisfaction	Good credit score	Too much debt	Contacted by a debt collector	Unpaid medical bills	Own/partner student loan	No debt thought
Personal finance satisfaction	1.00						
Good credit score	0.27	1.00					
Too much debt	-0.30	-0.30	1.00				
Contacted by a debt collector	-0.21	-0.35	0.26	1.00			
Unpaid medical bills	-0.21	-0.34	0.35	0.55	1.00		
Own/partner student loan	-0.08	-0.15	0.15	0.08	0.08	1.00	
No debt thought	-0.13	-0.29	0.19	0.06	0.17	0.07	1.00

Sample: HRS respondents (age 51-61) in the 2018 Debt Module.

Table 4. Multivariate analysis of positive financial perceptions and behaviors: HRS

	<i>Personal finance satisfaction (0/1)</i>		<i>Good credit score (0/1)</i>	
	(1)	(2)	(3)	(4)
Female	-0.010 (0.042)	-0.010 (0.041)	0.003 (0.045)	0.007 (0.045)
Age	0.016 ** (0.007)	0.015 ** (0.007)	0.012 (0.008)	0.011 (0.008)
Married	0.014 (0.048)	-0.010 (0.048)	0.126 ** (0.052)	0.075 (0.054)
Number of children	-0.025 ** (0.011)	-0.021 ** (0.010)	-0.037 *** (0.013)	-0.028 ** (0.013)
White	0.055 (0.041)	0.036 (0.040)	0.199 *** (0.046)	0.162 *** (0.046)
Hispanic	0.046 (0.057)	0.054 (0.054)	-0.038 (0.058)	-0.044 (0.061)
High school	-0.043 (0.064)	-0.049 (0.062)	-0.033 (0.068)	-0.047 (0.069)
Some college	-0.107 (0.068)	-0.137 ** (0.066)	0.024 (0.076)	-0.023 (0.075)
≥College	-0.017 (0.078)	-0.057 (0.075)	0.043 (0.082)	-0.025 (0.081)
Good health	0.138 *** (0.040)	0.124 *** (0.041)	0.127 ** (0.050)	0.120 ** (0.049)
HH income 2nd quartile (\$24-60K)	0.098 * (0.055)	0.077 (0.056)	0.093 (0.063)	0.054 (0.066)
HH income 3rd quartile (\$60-113K)	0.123 * (0.068)	0.081 (0.072)	0.106 (0.072)	0.031 (0.074)
HH income 4th quartile (>\$113K)	0.106 (0.070)	-0.022 (0.078)	0.243 *** (0.080)	0.094 (0.090)
Interest compounding knowledge	-0.012 (0.043)	-0.003 (0.042)	0.048 (0.047)	0.056 (0.047)
Total net wealth 2nd quartile (\$10-94K)		0.027 (0.051)		0.068 (0.064)
Total net wealth 3rd quartile (\$94-281K)		0.065 (0.063)		0.266 *** (0.073)
Total net wealth 4th quartile (>\$281K)		0.292 *** (0.075)		0.328 *** (0.083)
Intercept	-0.758 * (0.410)	-0.710 * (0.401)	-0.589 (0.459)	-0.574 (0.453)
N	444	444	419	419
R-sq	0.10	0.14	0.23	0.27
Mean of dep. var.	0.236		0.387	
Std. dev. of dep. var.	0.425		0.488	

Note: HRS respondents (age 51-61) in the 2018 Debt Module. Coefficient estimates from OLS regression, standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 5. Multivariate analysis of negative financial perceptions and behaviors: HRS

	<i>Too much debt (0/1)</i>		<i>Contacted by a debt collector (0/1)</i>		<i>Unpaid medical bills (0/1)</i>		<i>Own/partner student loan (0/1)</i>		<i>No debt thought (0/1)</i>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(1)	(2)
Female	0,042 (0,047)	0,040 (0,048)	0,042 (0,040)	0,042 (0,040)	0,117 *** (0,039)	0,113 *** (0,039)	0,039 (0,034)	0,036 (0,034)	0,048 (0,047)	0,049 (0,046)
Age	-0,032 *** (0,008)	-0,031 *** (0,008)	-0,004 (0,007)	-0,003 (0,007)	-0,012 * (0,007)	-0,012 * (0,007)	-0,006 (0,006)	-0,006 (0,006)	-0,021 *** (0,008)	-0,020 *** (0,007)
Married	0,039 (0,055)	0,082 (0,056)	-0,127 ** (0,049)	-0,106 ** (0,051)	-0,053 (0,049)	-0,013 (0,051)	-0,052 (0,040)	-0,022 (0,039)	-0,120 ** (0,050)	-0,099 * (0,051)
Number of children	0,027 * (0,014)	0,021 (0,014)	0,028 ** (0,014)	0,024 * (0,014)	0,013 (0,014)	0,010 (0,014)	0,016 (0,010)	0,013 (0,010)	0,026 ** (0,013)	0,022 * (0,013)
White	-0,080 (0,049)	-0,051 (0,050)	0,006 (0,043)	0,021 (0,044)	-0,069 (0,043)	-0,048 (0,044)	-0,038 (0,037)	-0,022 (0,037)	-0,120 *** (0,044)	-0,101 ** (0,044)
Hispanic	-0,065 (0,060)	-0,061 (0,060)	-0,023 (0,056)	-0,022 (0,057)	-0,021 (0,056)	-0,026 (0,059)	-0,005 (0,039)	-0,008 (0,040)	0,132 ** (0,053)	0,129 ** (0,055)
High school	0,065 (0,077)	0,078 (0,076)	-0,029 (0,075)	-0,023 (0,075)	0,047 (0,071)	0,055 (0,071)	0,032 (0,041)	0,038 (0,044)	-0,122 ** (0,061)	-0,114 * (0,061)
Some college	0,061 (0,081)	0,096 (0,080)	-0,037 (0,078)	-0,018 (0,079)	0,162 ** (0,077)	0,185 ** (0,076)	0,125 ** (0,049)	0,144 *** (0,052)	-0,148 ** (0,069)	-0,116 * (0,069)
≥College	0,042 (0,087)	0,095 (0,085)	-0,051 (0,080)	-0,021 (0,081)	0,070 (0,079)	0,105 (0,079)	0,231 *** (0,057)	0,260 *** (0,060)	-0,228 *** (0,076)	-0,190 ** (0,075)
Good health	-0,096 * (0,057)	-0,079 (0,058)	-0,173 *** (0,054)	-0,165 *** (0,055)	-0,085 * (0,051)	-0,065 (0,050)	0,024 (0,040)	0,037 (0,040)	0,027 (0,050)	0,039 (0,049)
HH income 2nd quartile (\$24-60K)	-0,147 ** (0,071)	-0,111 (0,072)	0,076 (0,065)	0,093 (0,068)	-0,010 (0,066)	0,034 (0,067)	0,031 (0,049)	0,062 (0,053)	0,012 (0,061)	0,023 (0,062)
HH income 3rd quartile (\$60-113K)	-0,067 (0,080)	0,000 (0,081)	0,093 (0,071)	0,127 * (0,075)	-0,086 (0,070)	-0,015 (0,073)	0,027 (0,059)	0,079 (0,065)	-0,073 (0,074)	-0,048 (0,077)
HH income 4th quartile (>\$113K)	-0,208 ** (0,084)	-0,074 (0,091)	-0,008 (0,070)	0,067 (0,080)	-0,172 ** (0,073)	-0,056 (0,078)	-0,004 (0,058)	0,084 (0,070)	-0,061 (0,079)	0,050 (0,085)
Interest compounding knowledge	-0,022 (0,050)	-0,030 (0,049)	0,057 (0,042)	0,052 (0,043)	0,081 * (0,043)	0,070 (0,043)	-0,041 (0,036)	-0,049 (0,037)	0,023 (0,048)	0,017 (0,047)
Total net wealth 2nd quartile (\$10-94K)		-0,067 (0,072)		-0,024 (0,070)		-0,150 ** (0,068)		-0,099 * (0,055)		0,017 (0,062)
Total net wealth 3rd quartile (\$94-281K)		-0,219 *** (0,079)		-0,101 (0,076)		-0,190 ** (0,075)		-0,142 ** (0,061)		-0,049 (0,073)
Total net wealth 4th quartile (>\$281K)		-0,288 *** (0,084)		-0,162 ** (0,081)		-0,280 *** (0,076)		-0,207 *** (0,072)		-0,251 *** (0,083)
Intercept	2,274 *** (0,489)	2,258 *** (0,485)	0,519 (0,416)	0,503 (0,417)	0,918 ** (0,424)	0,956 ** (0,420)	0,362 (0,330)	0,384 (0,333)	2,013 *** (0,447)	1,939 *** (0,441)
N	444	444	442	442	445	445	445	445	436	436
R-sq	0,09	0,12	0,10	0,12	0,12	0,15	0,08	0,10	0,139	0,173
Mean of dep. var.	0,410		0,233		0,238		0,153		0,663	
Std. dev. of dep. var.	0,492		0,423		0,426		0,360		0,473	

Note: HRS respondents (age 51-61) in the 2018 Debt Module. Coefficient estimates from OLS regression, standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 6. Self-reported financial behaviors and perceptions: NFCS

	<i>Mean</i>	<i>Std</i>	<i>Median</i>
Positive financial perceptions and behaviors			
Personal finance satisfaction	0.33	0.47	0
Good credit score	0.70	0.46	1
Planning for retirement	0.55	0.50	1
Negative financial perceptions and behaviors			
Too much debt	0.36	0.48	0
Contacted by a debt collector	0.15	0.36	0
Complaint about debt collectors (conditional %)	N/A	N/A	N/A
Unpaid medical bills	0.20	0.40	0
Own/partner student loan	0.09	0.29	0

Note: 2018 NFCS respondents age 51-61 (N=4,422).

Table 7. Correlation of self-reported financial behaviors and perceptions: NFCS

	Personal finance satisfaction	Good credit score	Too much debt	Contacted by a debt collector	Unpaid medical bills	Own/partner student loan
Personal finance satisfaction	1.00					
Good credit score	0.33	1.00				
Too much debt	-0.35	-0.33	1.00			
Contacted by a debt collector	-0.22	-0.50	0.33	1.00		
Unpaid medical bills	-0.22	-0.42	0.32	0.49	1.00	
Own/partner student loan	-0.13	-0.20	0.19	0.21	0.18	1.00

Note: 2018 NFCS respondents age 51-61 (N=4,422).

Table 8. Multivariate analysis of positive financial perceptions and behaviors: NFCS

	Personal finance satisfaction	Good credit score	Planning for retirement
Female	-0.011 (0.014)	0.024* (0.013)	0.020 (0.014)
Age	0.015*** (0.002)	0.013*** (0.002)	0.005** (0.002)
Single	-0.031 (0.020)	-0.029 (0.018)	-0.049** (0.020)
Separated or divorced	-0.052*** (0.019)	-0.080*** (0.018)	-0.048** (0.020)
Widow	-0.030 (0.035)	-0.076** (0.032)	-0.080** (0.036)
Having dependent children	-0.064*** (0.015)	-0.067*** (0.014)	-0.038** (0.015)
African American	-0.026 (0.026)	-0.176*** (0.024)	-0.037 (0.027)
Hispanic	0.027 (0.028)	-0.031 (0.025)	-0.037 (0.028)
Asian	0.077* (0.040)	0.050 (0.037)	-0.012 (0.041)
Others	-0.057 (0.039)	-0.101*** (0.036)	0.012 (0.040)
High school	0.038 (0.052)	0.206*** (0.047)	0.070 (0.053)
Some college	0.014 (0.052)	0.186*** (0.047)	0.136*** (0.052)
>=College	0.058 (0.053)	0.255*** (0.048)	0.200*** (0.054)
Income \$15-25K	-0.022 (0.033)	0.039 (0.030)	0.073** (0.033)
Income \$25-35K	0.073** (0.033)	0.143*** (0.030)	0.133*** (0.034)
Income \$35-50K	0.092*** (0.032)	0.209*** (0.029)	0.207*** (0.032)
Income \$50-75K	0.156*** (0.031)	0.323*** (0.028)	0.251*** (0.031)
Income \$75-100K	0.228*** (0.033)	0.367*** (0.030)	0.305*** (0.033)
Income \$100-150K	0.254*** (0.033)	0.407*** (0.030)	0.417*** (0.034)
Income \$150K+	0.434*** (0.036)	0.430*** (0.033)	0.480*** (0.037)
Income shock	-0.149*** (0.018)	-0.145*** (0.017)	-0.015 (0.018)
Big 5 FinLit	0.009 (0.006)	0.029*** (0.005)	0.061*** (0.006)
Interest compounding knowledge	0.015 (0.015)	0.015 (0.014)	0.047*** (0.015)
Observations	4,422	4,422	4,422
R-squared	0.147	0.247	0.218

Note: 2018 NFCS respondents age 51-61. Coefficient estimates from OLS regression, standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 9. Multivariate analysis of negative financial perceptions and behaviors: NFCS

	Too much debt	Contacted by a debt collector	Unpaid medical bills	Own/partner student loan
Female	0.023 (0.015)	-0.007 (0.011)	0.001 (0.012)	0.014 (0.009)
Age	-0.012*** (0.002)	-0.008*** (0.002)	-0.010*** (0.002)	-0.008*** (0.001)
Single	0.002 (0.021)	0.001 (0.015)	-0.087*** (0.017)	-0.008 (0.013)
Separated or divorced	-0.012 (0.020)	0.033** (0.015)	0.004 (0.017)	-0.006 (0.012)
Widow	-0.060 (0.037)	0.008 (0.027)	-0.008 (0.030)	-0.062*** (0.023)
Having dependent children	0.077*** (0.016)	0.030** (0.012)	0.034*** (0.013)	0.015 (0.010)
African American	-0.030 (0.028)	0.089*** (0.020)	0.089*** (0.023)	0.108*** (0.017)
Hispanic	0.009 (0.029)	0.016 (0.021)	-0.003 (0.024)	0.001 (0.018)
Asian	-0.172*** (0.042)	-0.040 (0.031)	-0.092*** (0.034)	-0.071*** (0.026)
Others	0.038 (0.041)	0.047 (0.030)	0.012 (0.033)	0.038 (0.025)
High school	0.008 (0.055)	-0.066* (0.040)	-0.115*** (0.044)	0.012 (0.033)
Some college	0.056 (0.054)	-0.044 (0.040)	-0.090** (0.044)	0.093*** (0.033)
>=College	0.016 (0.056)	-0.072* (0.041)	-0.143*** (0.045)	0.124*** (0.034)
Income \$15-25K	0.053 (0.035)	-0.017 (0.025)	0.046 (0.028)	-0.044** (0.021)
Income \$25-35K	-0.035 (0.035)	-0.067*** (0.026)	-0.012 (0.029)	-0.032 (0.021)
Income \$35-50K	-0.047 (0.034)	-0.101*** (0.025)	-0.032 (0.027)	-0.038* (0.020)
Income \$50-75K	-0.082** (0.033)	-0.160*** (0.024)	-0.073*** (0.026)	-0.053*** (0.020)
Income \$75-100K	-0.108*** (0.034)	-0.201*** (0.025)	-0.135*** (0.028)	-0.070*** (0.021)
Income \$100-150K	-0.171*** (0.035)	-0.220*** (0.025)	-0.186*** (0.028)	-0.096*** (0.021)
Income \$150K+	-0.245*** (0.038)	-0.211*** (0.028)	-0.213*** (0.031)	-0.127*** (0.023)
Income shock	0.218*** (0.019)	0.178*** (0.014)	0.192*** (0.015)	0.049*** (0.012)
Big 5 FinLit	-0.014** (0.006)	-0.012*** (0.004)	-0.015*** (0.005)	-0.006* (0.004)
Interest compounding knowledge	-0.006 (0.016)	-0.005 (0.011)	-0.022* (0.013)	-0.007 (0.009)
Observations	4,422	4,422	4,422	4,422
R-squared	0.098	0.139	0.140	0.060

Note: 2018 NFCS respondents age 51-61. Coefficient estimates from OLS regression, standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix A: HRS module questions

Please note that respondents could answer with “I do not know” or could refuse to answer any of these questions.

V201_SATISFD: SATISFACTION WITH PERSONAL FINANCIAL CONDITION

Overall, thinking of your assets, debts, and savings, how satisfied are you with your current personal financial condition? Are you completely satisfied, very satisfied, somewhat satisfied, not very satisfied, or not at all satisfied?

V202_2MUCH: TOO MUCH CURRENT DEBT

How strongly do you agree or disagree with the following statement? I have too much debt right now. Do you strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree?

V203_CREDIT: HOW RATE YOUR CREDIT RECORD

How would you rate your current credit record such as FICO score? (It's OK to guess if you aren't sure). Excellent, very good, good, fair, poor.

V204_STULOAN: R HAS ANY STUDENT LOANS OUTSTANDING

Do you currently have any outstanding student loans on which you are a signer or co-signer that are for your or someone else's education beyond high school?

V205_WHOFOR: PERSON THE EDUCATION LOANS WERE FOR

For whose education were the loans taken out? Select all that apply. Yourself, your spouse/partner, your child(ren), your grandchild(ren), other person.

V206_OWEMED: IF UNPAID BILLS FOR HEALTH CARE

Do you currently have any unpaid bills from a healthcare or medical service provider—for example, a hospital, a doctor's office, or a medical lab—that are past due?

V207_COLLECT: IF CONTACTED BY A DEBT COLLECTION AGENCY

Have you been contacted by a debt collection agency in the past 12 months?

V208_CMPLAIN: IF COMPLAINED ABOUT COLLECTOR TACTICS

Have you submitted complaints about debt collection in the past 12 months—for example, because the money is not owed, the amount is wrong, or collectors used coercive or misleading tactics?

V209_PLNDEBT: IF PLANNED TO HAVE CURRENT AMOUNT OF DEBT

As of 10 years ago, did you think you would have about the amount of debt that you have at this point in your life? No I planned to have less debt, Yes it's about what I was planning for, No I planned to have more debt, I wasn't planning at all

V211_LOANINT: IF 1000 DOLLAR LOAN AT 20PCT INTEREST

Suppose you owe \$1,000 on a loan and the interest rate you are charged is 20% per year compounded annually. If you didn't pay anything off, at this interest rate how many years would it take for the amount you owe to double? Would you say less than 2 years, at least 2 years but less than 5 years, at least 5 but less than 10 years, or at least 10 years?

Appendix B: NFCS questions

Please note that respondents could answer with “I do not know” or could refuse to answer any of these questions.

J1: PERSONAL FINANCE SATISFACTION

Overall, thinking of your assets, debts and savings, how satisfied are you with your current personal financial condition? Please use a 10-point scale, where 1 means “Not At All Satisfied” and 10 means “Extremely Satisfied.”

J8/J9: PLANNING FOR RETIREMENT

Have you ever tried to figure out how much you need to save for retirement?

[IF Q.A10a = 2 INSERT: Before you retired, did you try to figure out how much you needed to save for retirement?][IF Q.A10a = 3 INSERT: Before your [spouse/partner] retired, did you try to figure out how much you needed to save for retirement?]

J10: INCOME SHOCK

In the past 12 months, [IF Q.A7a = 3 INSERT: have you/IF Q.A7a = 1 OR 2 INSERT: has your household] experienced a large drop in income which you did not expect?

J32: GOOD CREDIT SCORE

How would you rate your current credit record? Very bad, bad, about average, good, or very good?

G20: UNPAID MEDICAL BILLS

Do you currently have any unpaid bills from a health care or medical service provider (e.g., a hospital, a doctor’s office, or a testing lab) that are past due?

G30: OWN/PARTNER STUDENT LOAN

Do you currently have any student loans? If so, for whose education was this/were these loan(s) taken out? Select all that apply. Yes, have student loan(s) for: yourself, your spouse/partner, your child(ren), your grandchild(ren), other person, or No, do not currently have any student loans.

G38: CONTACTED BY A DEBT COLLECTOR

Have you been contacted by a debt collection agency in the past 12 months?

G23: TOO MUCH DEBT

How strongly do you agree or disagree with the following statement? I have too much debt right now. Please give your answer on a scale of 1 to 7, where 1 = “Strongly Disagree,” 7 = “Strongly Agree,” and 4 = “Neither Agree nor Disagree.” You can use any number from 1 to 7.

M6: INTEREST QUESTION

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?

More than \$102

Exactly \$102

Less than \$102

Don’t know

Prefer not to say

M7: INFLATION QUESTION

Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?

More than today

Exactly the same

Less than today

Don’t know

Prefer not to say

M8: BOND QUESTION

If interest rates rise, what will typically happen to bond prices?

They will rise

They will fall

They will stay the same

There is no relationship between bond prices and the interest rate

Don't know

Prefer not to say

M9: MORTGAGE QUESTION

Please indicate whether each statement is true or false. 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.

True

False

Don't know

Prefer not to say

M10: RISK DIVERSIFICATION QUESTION

Please indicate whether each statement is true or false. Buying a single company's stock usually provides a safer return than a stock mutual fund.

True

False

Don't know

Prefer not to say

M31: INTEREST COMPOUNDING KNOWLEDGE

Suppose you owe \$1,000 on a loan and the interest rate you are charged is 20% per year compounded annually. If you didn't pay anything off, at this interest rate, how many years would it take for the amount you owe to double?

Less than 2 years

At least 2 years but less than 5 years

At least 5 years but less than 10 years

At least 10 years

Don't know

Prefer not to say

Appendix B Table: Descriptive statistics for the 2018 NFCS variables

	<i>Mean</i>	<i>Std</i>
Personal finance satisfaction	0.33	0.47
Good credit score	0.70	0.46
Planning for retirement	0.55	0.50
Interest compounding knowledge	0.32	0.47
Too much debt	0.36	0.48
Contacted by a debt collector	0.15	0.36
Unpaid medical bills	0.20	0.40
Own/partner student loan	0.09	0.29
Female	0.53	0.50
Age	56.05	3.17
Single	0.16	0.37
Separated or divorced	0.18	0.38
Widow	0.04	0.20
Having dependent children	0.29	0.45
African American	0.07	0.26
Hispanic	0.06	0.24
Asian	0.03	0.16
Others	0.03	0.17
High school	0.25	0.43
Some college	0.38	0.48
≥College	0.35	0.48
Income \$15-25K	0.09	0.29
Income \$25-35K	0.09	0.29
Income \$35-50K	0.12	0.33
Income \$50-75K	0.19	0.39
Income \$75-100K	0.15	0.36
Income \$100-150K	0.17	0.38
Income \$150K+	0.11	0.31
Income shock	0.16	0.37
Big 5 FinLit	3.25	1.37

Sample: NFCS respondents age 51-61 (N=4,422).