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Debt Close to Retirement and Its Implications for Retirement Well-being

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We analyze debt and debt management of Americans nearing retirement age, and we show that older people have numerous financial obligations that can lead to financial distress. Drawing on the 2015 National Financial Capability Study and an extensive literature review, we find that lack of financial literacy, lack of information, and behavioral biases help explain the prevalence of debt later in life. Our evidence also indicates that debt at older ages can negatively influence retirement well-being.

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Debt Close to Retirement and Its Implications for Retirement Well-being

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Older Americans (age 65+) appear increasingly vulnerable to financial distress in old age, implying that they may not be resilient to sudden financial shocks, such as an unexpected loss of income or an unforeseen increase in expenditures. One indicator of this condition is the substantial increase in borrowing by older households: the Federal Reserve Board (2017) reported that median debt for seniors grew by over 400% between 1989 and 2016, and the probability of older households having borrowed rose substantially over time. In prior work, we have documented that the percentage of people arriving close to retirement age with debt grew from 64% in 1992 to 71% in 2010 (Lusardi, Mitchell, and Oggero, 2018). Moreover, the value of debt held by people on the verge of retirement (age 56-61) also grew sharply: thus, median household debt for this group in 1992 was under $6,800, but by 2004 it had more than quadrupled in real terms. In 2010, it was $32,700, nearly five times the 1992 level (in 2015 dollars). Similar findings have been reported by Brown et al. (2016) who documented that debt held by borrowers between the ages of 50 and 80 increased by roughly 60% from 2003 to 2015, while aggregate debt balances of younger borrowers declined modestly over the same period. In 2015, older borrowers held substantially more of nearly all types of debt than did borrowers in the same age group in 2003. Much of the rise resulted from larger home mortgages, yet other debt including credit card and medical debt also swelled over time (Lusardi, Mitchell, and Oggero, 2017).

One aspect of this change over time is that some components of debt, such as credit card and other non-collateralized borrowing, charge high interest rates; these, in turn, can contribute to financial distress in the older population. For example, Pottow (2012) found that elder debtors carried 50% more credit card debt than did younger debtors, and that interest and fees on credit cards were a reason for elders' greater bankruptcy filings compared to younger filers. In addition to holding more credit card debt, people near retirement also engage in other expensive financial

behaviors, such as making late credit card payments and exceeding limits on credit card charges (Lusardi, 2011; Lusardi and Tufano, 2015). They also rely on alternative methods of borrowing, such as payday loans.[1]

This trend has potentially important implications for retirement security. Despite the fact that concerns related to high indebtedness are widespread, much of the current discussion about retirement security has focused mainly on inadequate savings rather than household balance sheets. Yet if retirees are to do well in old age, they must be able to manage not only their assets but also their debt. This paper contributes to the literature by examining the factors associated with indebtedness among individuals who should be at the peaks of their wealth accumulation profiles. We also examine potential explanations for these behaviors and provide suggestions on how we can improve the resilience of Americans close to retirement.

For our empirical analysis, we use data from the 2015 wave of the National Financial Capability Study (NFCS). We show that a sizeable proportion of the older population is borrowing using methods associated with high interest payments and fees. There is also a strong correlation between the types of debt instruments held: that is, those who use one source of high-cost debt are also likely to use other expensive types of debt. We find that those carrying high-cost debt are disproportionately ethnic minorities and those with low income and dependent children. We investigate three potential explanations for the observed patterns: lack of financial literacy, lack of information, and behavioral biases. We demonstrate that each of these factors helps explain why many people nearing retirement still hold debt instruments.

In what follows, we first provide an overview of our data and methodology. Next, we study people nearing retirement and examine the demographic characteristics of indebted individuals. We also illustrate the correlation among different types of debt held. Additionally, we investigate the factors associated with carrying debt at older ages and evaluate the importance of several different

[1] Numerous media reports have also taken note of the increase in borrowing among the elderly and the reliance on high-cost methods of borrowing, such as payday loans (see for instance, Malito 2019).

explanations for the observed patterns. Last, we offer conclusions and recommendations for policymakers and the financial and pension industry.

The NFCS Sample

The canonical life cycle model of saving posits that adults nearing retirement will be at or near the peak of their wealth accumulation processes; accordingly, their major decision is about how to spend down their wealth so as to last them a lifetime. Given the likely drop in labor earnings they face, and the fact that pensions and Social Security do not replace 100% of preretirement earnings, it stands to reason that older people should seek to pay down their debt, and if possible, carry debt charging low interest rates to help them preserve their assets to cover consumption in retirement.

We examine whether many real-world households follow this prescription by examining the financial situations of older Americans approaching retirement using data from the 2015 wave of the National Financial Capability Study (NFCS). Supported by FINRA Investor Education Foundation, the NFCS is a triennial survey first conducted in 2009 with the goal of assessing and establishing a baseline measure of financial capability among American adults. The NFCS has a large number of observations (over 27,000 in 2015), allowing researchers to study population subgroups such as the ones we examine here, namely persons age 56-61 (before they are eligible to claim Social Security retiree benefits).[2] The 2015 wave included several questions available in two prior NFCS surveys (2009 and 2012), and it also includes new queries about several topics of key interest to our present research. In particular, it added several new questions about student debt and financial literacy related to debt and debt management. Additionally, and uniquely, it also provides information about non-traditional methods of borrowing, such as payday loans, pawnshops, rent-to-own products, and auto title loans. We note, however, that while respondents identify which sources

[2] This age range of respondents coincides with what we have examined in our previous work but using older data (Lusardi and Mitchell, 2013; Lusardi, Mitchell, and Oggero, 2017, 2018).

of borrowing they have, they do not indicate how much of each kind of debt they hold. Consequently, we lack information on the amounts of debt held.

To construct our analysis sample, we first extract from the 2015 NFCS all 2,942 respondents age 56-61. Next, we exclude respondents lacking information about borrowing behaviors or other key characteristics. Our final analysis sample includes 2,672 respondents who are observationally comparable to the full sample of older respondents in the chosen age range (see Appendix A for descriptive statistics).

Assessing Near-Retirees' Borrowing Behaviors

Though the economics literature has to date devoted sparse attention to older Americans' balance sheets, the 2015 NFCS data show that 56 to 61-year-old respondents engage in many different types of borrowing near retirement, both long- and short-term. Moreover, they tend to hold high-cost debt, which typically charges more than the rates older people are likely to earn on their assets.

Table 1 offers a first perspective on our findings. Over 7 of 10 near-retirees own a home, but over one-third (37%) still have a home mortgage, and 11% have outstanding home equity loans. For some, managing mortgages is difficult and/or they are under water: 10% of those with mortgages have been late with mortgage payments at least once in the previous year, and 9% of those with mortgages or equity loans reported owing more on their homes than they believe they could sell them for. In Lusardi, Mitchell and Oggero (2018), we showed that those nearing retirement today hold higher mortgage debt than did previous generations.

Even though they are close to retirement, many respondents in our sample still carry student loan debt, for their own student loans and/or that of others, such as children. Additionally, many

have already tapped into their retirement accounts; about 8% of those who have retirement accounts had taken a loan or a hardship withdrawal in the previous 12 months.[3]

Table 1 here

This group of near-retirees also engages in shorter-term borrowing behaviors likely to imply fees and steep interest payments. For instance, over one-third of our respondents (36%) carry a balance on their credit cards and are charged interest, while 23% exhibit what we call expensive credit card behaviors, such as paying the minimum only, paying late or over-the-limit fees, or using credit cards for cash advances, as described in Lusardi and Tufano (2015). Moreover, 18% of our respondents have borrowed from alternative financial services in the past five years, using, for example, payday loans, auto title loans, rent-to-own, and pawnshops. These non-bank financial services are high-cost borrowing methods, as they tend to charge much higher interest than people can earn on their assets, sometimes higher than 300% per year.

Debt by Socio-Demographic Characteristics

Table 2 reports debt experience by education, income, and ethnicity. Almost all debt behaviors show a monotonic relationship with educational levels, which we group into three categories: High school degree or less (≤High School), some college, and a Bachelor's degree or higher education (College+). Those with the highest education are much less likely to use high-cost borrowing, such that one-tenth of the College+ engage in alternative financial services, compared to twice that many (21%) of those without a Bachelor's degree. The opposite is observed for home mortgages and to a lesser extent, home equity loans; 42% of the College+ have a home mortgage, compared to one-third (35%, 33%) of respondents with some or no college.

Table 2 here

[3] We exclude borrowing from retirement accounts in our analysis, because just 58% of people age 56-61 have retirement plans where they get to choose how the money is invested, or other retirement accounts they have set up themselves.

In addition to the educational divide reported above, our data also reveal a clear difference in types of debt by income. Respondents with household income below $35,000 are 13 percentage points (30% versus 17%) more likely to use alternative financial services compared to those with income $35,000-$75,000, while just 7% of those with income over $75,000 did so. While the highest- and lowest-income groups are equally likely to carry credit card debt, the lowest-income group is more likely to report expensive credit card behaviors.[4]

Turning to long-term debt, we see that the highest-income group is, not surprisingly, more likely to have mortgages, home equity loans, and auto loans. By contrast, people in the lowest-income group are more likely to have an outstanding student loan for their own education. Interestingly, 74% of the lowest-income respondents with student loans had not earned a Bachelor's degree, making it more difficult to earn income needed to repay their student debt.

Finally, Table 2 reports a breakdown of debt by type for different ethnic groups, and we see that some population subgroups are relatively more likely than others to use expensive forms of credit. In particular, older African Americans are far more likely to use alternative financial services, and exhibit expensive credit card behaviors. They are also much more likely to still carry student loans for their own education: 17% of our older African American sample still has student debt, compared to 5% of Whites, 6% of Hispanics, and just 1% of Asians.

In summary, older Americans drawing near to retirement hold distinct types of debt. Older higher-income and better-educated people tend to have long-term debt, in particular, mortgages. Lower-income and less-educated older persons are more likely to have borrowed from alternative financial services. As for credit card debt, those with more education are less likely to carry card balances, but there is no pattern with regards to income. Those with a college degree and higher income are less likely to engage in other expensive credit card practices. In the next section, we explore correlations across debt types.

[4] In our previous research, expensive credit card behaviors have been defined as paying the minimum amount due, running late fees, incurring over-the-limit fees, and using the credit card to get cash advances (Lusardi and Tufano, 2015).

Are Types of Debt Held at Older Ages Correlated?

Since people can hold several types of debt simultaneously, we next look to identify whether older Americans engage in multiple forms of borrowing, and if so, what types of debt do they carry. To this end, we analyze correlations among different types of debt behaviors on the verge of retirement.

Table 3 shows there is positive and significant correlation across types of long-term (collateralized) debt such as having a mortgage, having a home equity loan, and having an auto loan. We also find that having a home mortgage is negatively correlated with using alternative financial services and having student loans at older ages, a finding in line with the analysis across demographic characteristics discussed earlier. Interestingly, those still holding student loans for their own education are most likely to use non-traditional methods of borrowing. Moreover, those who pay interest on credit cards carry other types of debt (mortgages, auto loans, and student loans) and those who use credit cards in expensive ways also use alternative financial services, such as payday loans. In sum, these correlations again point to a clear differentiation between people's use of debt.

Table 3 here

Multivariate Analysis of Debt Close to Retirement

To shed more light on what explains debt close to retirement, in Table 4 we report marginal effects from multivariate Probit regressions of our debt variables on a set of demographic controls. Here we see that African-Americans are more likely to carry student loans close to retirement as well as to carry high-interest debt such as credit cards and payday loans. Those with dependent children are also significantly more likely to carry high-cost debt. There is an income divide when it comes to debt. While higher-income people carry loans such as mortgages, home equity lines of credit or auto loans, they are much less likely to carry high-cost debt, such as credit cards, or use

alternative financial services. Those with low income pay interests on their credit card balances and use credit cards in expensive ways.

Table 4 here

In sum, these results underscore some of the descriptive results mentioned earlier. Nevertheless, more remains to be learned about why people approach retirement with so much debt. Accordingly, in the next section, we turn to some additional explanations for the observed patterns.

Inside the Black Box of Debt at Older Ages

To delve more deeply into the explanations driving debt at older ages, we next investigate three potential factors: low financial literacy, lack of information, and behavioral biases. Our analysis relies both on insights from related research, and on the 2015 NFCS along with other information available from previous waves detailed below.

Low financial literacy. Prior research has found compelling evidence linking financial literacy to debt management. For instance, less financially savvy persons tend to incur higher fees and borrow at higher rates (Lusardi, 2011; Lusardi and Tufano, 2009, 2015). Moreover, those less financially literate tend to report that their debt loads are excessive and they tend to use alternative financial services (Lusardi and de Bassa Scheresberg, 2013).

To this end, we turn to the so-called "Big Five" questions devised to evaluate people's capacity to do simple interest rate calculations, to understand inflation and risk diversification, to evaluate how mortgages work, and to understand asset pricing. In addition, to hone in on the problem of debt at older ages, we also considered a sixth question about interest compounding in the context of debt in the 2015 wave of the NFCS. The precise wording of the questions is given below, with the correct answers indicated in bold.

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

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

Risk diversification question
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

Mortgage question
Please tell me whether this 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
- Do not know
- Prefer not to say

Bond pricing 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 rates
- Do not know
- Prefer not to say

Compounding interest question in the context of debt
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
- Do not know
- Prefer not to say

Some might anticipate that people nearing retirement would have acquired the financial knowhow required to manage financial decisions, and borrowing in particular, but older Americans only answered 3.69 questions of the six financial literacy questions correctly, on average, performing only moderately better than the entire NFCS sample (scoring 3.15 correct on average).[5]

A deeper analysis of the determinants of debt appears in Table 5, where we now include financial literacy as an additional control. Financial literacy matters, in particular for the high-cost debt; those who have higher financial literacy are less likely to use alternative financial services or to use credit cards in expensive ways. They are also less likely to have auto loans close to retirement. Other coefficient estimates are similar to those reported in Table 4. The estimates in Table 5 demonstrate that financial literacy is also a predictor of debt close to retirement. That is, even after controlling for all the other factors discussed above, financial knowledge helps people manage their resources and stay out of high-cost debt as they approach retirement.

Table 5 here

While we are aware that financial literacy could be an endogenous variable, we note that Probit estimates such as those reported in Table 5 could even underestimate the importance of financial literacy given research indicating that instrumental variables analysis tends to generate even larger effects (Lusardi and Mitchell, 2011).

Lack of information. Another problem facing those nearing retirement is that making financial decisions requires knowing what information to obtain if one is to successfully manage one's resources in old age. To explore debt decisions, the 2009 NFCS dataset does provide additional insight about the information people gathered during their decision process. Because age was not recorded as a continuous variable in that survey, we focus on individuals age 55-64 in what follows.[6]

[5] Appendix B reports financial literacy scores by education, income, and ethnicity.
[6] In the 2009 wave of the NFCS, 4,543 of the 28,146 respondents were age 55-64.

In this older sample, we learn that people had little or no information on critical variables. For instance, Table 6 shows that 31% of those with auto loans did not know the interest rate they were paying, and 11% of individuals with a mortgage did not know their mortgage interest rates. Almost one in four (24%) of those with mortgages did not know whether they had an interest-only mortgage or a mortgage with an interest-only option. While individuals may understandably forget their mortgage interest rates, this information is nonetheless crucial when deciding whether to refinance or, alternatively, to lock in low interest rates before interest rates rise. Our results also show that many people are unaware of the interest charged on their current loans. Among near-retirees having at least one credit card, almost one-fifth (23%) of those who did not always pay their credit card in full stated that they did not know the interest charged on the card where they had the largest balance. Clearly, many near-retirees make borrowing decisions without knowing much about the debt they are assuming.

Table 6 here

Another way to examine how individuals borrow is provided by answers to questions about whether they compare types of credit offered by different providers. Over half (51%) of near-retirees with an auto loan and 38% of those with a mortgage did not compare offers, and only one-third of credit card holders collected information from more than one card company. In other words, people with years of borrowing experience apparently do little to learn about pricing options, nor do they shop around to get good terms.

The 2009 NFCS also shows that many near-retirees were unaware of their credit scores, a key factors driving the interest rates charged on mortgages, loans, and other instruments (Lusardi, 2011). In fact, 55% of people age 55-64 in the 2009 NFCS had not checked their credit scores in the previous year, and almost the same percentage (54%) did not obtain their credit reports.

We previously noted that 6% of near-retirees still hold student loans taken out for their own education. Additional information in the 2015 NFCS also shows that many older people have taken on student loans for others, including spouses, partners, children, and grandchildren. Considering all

educational debt, 15% of respondents age 56-61 hold student debt in the 2015 NFCS. It is concerning that many borrowers did not fully comprehend what they were getting into when they took out these loans (FINRA Investor Education Foundation, 2016). Specifically, over half (56%) of borrowers in this age group did not try to figure out how much their future monthly payments would be, before taking out the loans. Not surprisingly, 44% of those with student loans at older ages express concern about their ability to pay off this debt, and the percentages are far higher for the lower income subgroup.

Many, but not all, student debt repayment plans are income-driven to make student debt more manageable, yet one in five of older student loan borrowers indicated that they did not know whether their payments were determined by their income. This suggests that many of those who borrow collect insufficient information about the consequences of this debt (Lusardi, de Bassa Scheresberg, and Oggero, 2016). Interestingly and alarmingly, over half (51%) of these older student loan borrowers indicate that if they could go do it all again, they would behave differently.

In Table 7, we correlate 2015 NFCS respondents' lack of information and negative perceptions of their student loans with their levels of financial literacy. Borrowers that do not know whether their payments are determined by their income or concerned about their ability to pay off the debt have lower financial literacy scores (older Americans scored 3.69 on average).

Table 7 here

Behavioral biases. The evidence on heavy debt burdens held by many Americans may suggest that behavioral biases could also be responsible for observed borrowing patterns. In what follows, we review some of the literature regarding biases influencing decision-making around debt, and we offer an assessment of the extent to which these can explain the evidence provided in the previous sections.

The emergent field of behavioral economics extends the standard understanding of financial decision-making with insights from psychological research, which could be relevant to understand debt and debt management. One of its central contributions is to recognize psychological factors

driving behavior, such as, for example, lack of self-control (Benton, Meier, and Sprenger, 2007). Gathergood (2012a) showed that consumers having self-control problems were more likely to report over-indebtedness and make greater use of high-cost credit products, such as store cards and payday loans. Similarly, individuals favoring immediate gratification had higher levels of unsecured debts on revolving accounts like credit cards (Benton, Meier, and Sprenger, 2007). Additional research by Achtziger et al. (2015) suggested that compulsive buying serves as a link between self-control skills and debt: that is, people lacking self-control buy compulsively, in turn affecting debt. Impulsivity driving debt decisions has also been confirmed by Ottaviani and Vandone (2011), who showed that impulsivity predicted unsecured debt like consumer credit, but it was not significantly associated with secured debt such as mortgages. This finding may explain the relatively high percentage of older individuals with short-term high-cost debt we found above.

Lack of self-control and impulsive spending behavior can also help explain the "co-holding puzzle," i.e., the co-existence of high-cost revolving consumer credit together with low-yield liquid savings (Gathergood and Weber, 2014; Bertaut, Haliassos, and Reiter, 2009). The notion is that consumers can minimize their vulnerability to impulsive spending by maintaining revolving consumer debt while simultaneously holding money in bank accounts. Laibson, Repetto, and Tobacman (2003) identified hyperbolic time preferences as a possible resolution of this debt puzzle: that is, some consumers act inconsistently, acting patiently when accumulating illiquid wealth, but impatiently when using credit cards. In such a scenario, simulated consumers with hyperbolic time preferences would tend to borrow on credit cards and accumulate relatively large stocks of illiquid wealth by retirement. Telyukova (2013) also suggested that households that accumulate credit card debt may not be able to pay it off using their bank accounts because they anticipate needing that money in situations where credit cards cannot be used.

Another source of suboptimal decision-making related to credit cards is termed "anchoring." This arises since credit card companies indicate on their bills the "minimum amount due," an amount generally less than the full bill. Keys and Wang (2019) showed that this minimum payment

acts as a lower psychological repayment bound for a majority of consumers, so anchoring can generate suboptimally high debt levels. This may explain why so many older individuals in our sample continue to carry credit debt and pay only the minimum.

Still another behavioral bias linked to household decision-making around debt refers to "exponential growth bias," or people's tendency to linearize exponential growth and hence to underestimate the future value of a variable growing at a constant rate. For example, Stango and Zinman (2009) suggested that this could explain people's propensity to underestimate the effect of high interest rates leading them to borrow more and save less. Although this bias is conceptually distinct from people's lack of financial literacy, Almenberg and Gerdes (2012) discovered that exponential growth bias was negatively correlated with financial literacy. Accordingly, studies of the relationship between the bias and household financial decisions should include controls for financial literacy to isolate the effect of this bias.

Stango and Zinman (2006) also documented a pervasive bias among US consumers who systematically underestimated the interest rate associated with a loan principal amount and stream of repayments. They found that biased consumers held loans with higher interest rates but mainly when they borrowed from non-bank lenders. This result is consistent with the fact that non-bank lenders emphasize monthly payments rather than interest rates levied. It is not clear whether this is a true bias, or simply an indicator of lack of financial literacy. A more complete study by Gathergood and Weber (2017) investigated behavioral biases in the presence of low financial literacy, and they showed that poor financial literacy and impatience boosted the likelihood of choosing mortgages with lower up-front costs but larger eventual payments. Indeed, the key feature of many alternative mortgage products is that payments often cover only the interest due, or in some cases, are less than the value of the interest due for an initial period. As suggested by Cocco (2013), more complex mortgages paired with low levels of financial literacy may result in people not realizing that low initial mortgage payments imply larger future loan balances. Others have found that people with present-biased preferences are also more likely to have credit card debt and higher credit card

balances (Meier and Sprenger, 2010), and fail to stick to their self-set debt paydown plans (Kuchler and Pagel, 2018). Campbell et al. (2011) argued that many present-biased consumers would display greater patience if they could commit to a plan of savings and future consumption.

Besides the behavioral biases discussed so far, individual debt choices may also be affected by social norms including shared ideals that drive behavioral expectations around finances. For instance, Almenberg et al. (2018) argued that higher debt levels could be due to a cultural shift in attitudes toward debt, and their study concluded that individuals who reported being uncomfortable with debt had considerably lower debt-to-income ratios than others. Moreover, there may be an intergenerational transmission of attitudes toward debt which can change over time (Baum and O'Malley, 2003). This point was underscored by Gathergood (2012b), who reported that people who faced difficulties repaying their unsecured debt in high-bankruptcy areas experienced less psychological stress. This could be due to reduced social stigma associated with debt problems in areas where such problem is more prevalent. Moreover, Lea, Webley, and Levine (1993) found that serious debtors had slightly more permissive attitudes towards debt, as they knew more people who were in debt and were less likely to think that their friends or relatives would disapprove if they knew. We cannot directly test these hypotheses in our data, yet exploring these explanations is surely an important area for future research.

Discussion and Conclusions

This paper has reported that a sizeable proportion of older Americans carry debt on the verge of retirement. There is also some important heterogeneity with regard to the types of debt people hold. Using the 2015 NFCS, we show that low-income people, those with financially dependent children, and African Americans tend to be more likely to hold high-cost debt at older ages. Those with higher income tend to be better protected against these stresses.

Several explanations can help explain why individuals carry debt late in their life cycles. In addition to explanations related to demographic factors and income, we also investigated the role of

financial illiteracy, lack of information, and behavioral biases. While more research is necessary to pin down the precise quantitative importance of each explanation, our analysis indicates they are all likely explanations for why so many individuals carry debt close to retirement, with potentially erosive implications for retirement well-being.

Our analysis has several implications for academics, policymakers, practitioners, and the financial and pension industry. While much attention in the life cycle literature has been devoted to savings, our work demonstrates that it is also crucial for researchers to pay attention to debt and the problems people have with carrying debt in later life. To help people cope with such real-world problems, programs could be targeted at workers to discuss debt and debt management; for example, workplace financial wellness programs could cover topics beyond investing and saving. In view of the fact that so many people carry student loans late in their lifetimes, it may also be important to add financial education in high school, to college, and beyond, with lessons explicitly devoted to debt and debt management. Moreover, with the growth of fintech, new products are being developed to help people manage their spending and credit card debt (Agnew and Mitchell, forthcoming; NCOA 2017). Insights from behavioral economics can also offer new ways to help people manage debt; for instance the AARP has been working to establish “rainy day savings accounts” to help workers avoid taking funds from their retirement accounts (Dixon 2018). As the responsibility to save for retirement continues to shift to individuals over time, it is important to ensure that individuals have the skills not only to manage their assets, but also their debts. Without this, retirees will face the need to allocate ever-larger fractions of their incomes to cover their borrowing.

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Table 1. Financial Assets, Obligations, and Debt among Older Households: 2015 NFCS

		Debt or Financial Obligation		
	% having		% conditional on holding asset	% unconditional
Home	72.6	Home mortgage	51	37
		Home equity loan	14.8	10.8
		House value underwater*	8.9	3.7
		Late w/ mortgage payments (≥once)*	9.6	3.6
College degree	33.6	Own student loan	8.4	6.4
Student loan debt	14.6		na	14.6
Altern. fin. services	17.5		na	17.5
Auto loan	29.6		na	29.6
Credit card	81.5	Pay interest on credit card balance	44.6	36.4
		Credit card fees/ expensive behaviors	28.2	23
Retirement account**	57.5	Retirement account: loan or hardship withdrawal	8	4.6

Note: 2015 NFCS respondents age 56-61 (see text; N=2,672). *Use alternative financial service* refers to the use of payday loans, auto title loans, rent-to-own or pawnshops. *Credit card fees/ expensive behaviors* include paying the minimum only, paying late or over-the-limit fees, and using the card for cash advances.

* Percentages conditional on having a mortgage or home equity.

** Having retirement plans through an employer where choosing how the money is invested or any other retirement accounts not through an employer, like an IRA, Keogh, SEP, myRA, or any other type of retirement account that individuals have set up themselves.

Table 2. Demographics of Older Adult Borrowing Behavior: 2015 NFCS (%)

	Full sample	≤High school	Some college	≥College	Income <$35K	Income $35-75K	Income >$75K	White	African American	Hispanic	Asian	Other
Home mortgage	0.37	0.33	0.35	0.42	0.18	0.38	0.52	0.38	0.30	0.43	0.31	0.30
Home equity loans	0.11	0.07	0.11	0.13	0.04	0.10	0.17	0.11	0.06	0.14	0.20	0.04
Auto loan	0.29	0.32	0.30	0.28	0.15	0.34	0.38	0.31	0.26	0.29	0.17	0.24
Own student loan	0.06	0.02	0.07	0.08	0.11	0.06	0.02	0.05	0.17	0.06	0.01	0.15
Use altern. fin. service	0.17	0.21	0.21	0.10	0.30	0.17	0.07	0.14	0.36	0.21	0.10	0.28
Pay interest on credit card balance	0.36	0.39	0.38	0.31	0.33	0.43	0.33	0.35	0.43	0.4	0.2	0.41
Credit card fees/ expensive behaviors	0.23	0.27	0.24	0.19	0.25	0.28	0.16	0.21	0.38	0.25	0.13	0.17
Loan or hardship withdrawal from retirement	0.05	0.03	0.05	0.05	0.03	0.05	0.05	0.04	0.06	0.05	0.07	0.04
N	*2,672*	*621*	*1,154*	*897*	*815*	*903*	*954*	*2,092*	*280*	*147*	*71*	*82*

Note: 2015 NFCS respondents age 56-61 (see text). *Use alternative financial services* refer to the use of payday loans, auto title loans, rent-to-own or pawnshops. *Credit card fees/ expensive behaviors* include paying the minimum only, paying late or over-the-limit fees, and using the card for cash advances.

Table 3. Correlation of Borrowing Behaviors among Older Respondents: 2015 NFCS

	Home mortgage	Home equity loans	Auto loan	Own student loan	Use altern. fin. service	Pay interest on credit card balance
Home equity loans	0.15					
Auto loan	0.19	0.06				
Own student loan	-0.06	-0.04	0.02			
Use altern. fin. service	-0.10	-0.05	0.03	0.19		
Pay interest on credit card balance	0.16	0.09	0.20	0.05	0.06	
Credit card fees/ expensive behaviors	0.06	0.07	0.09	0.05	0.15	0.54

Note: 2015 NFCS respondents age 56-61 (see text; N=2,672). *Use alternative financial services* refer to the use of payday loans, auto title loans, rent-to-own or pawnshops. *Credit card fees and expensive behaviors* include paying the minimum only, paying late or over-the-limit fees, and using the card for cash advances.

Table 4. Factors Associated with Respondents' Debt and Debt Behaviors: 2015 NFCS (Probit marginal effects)

	Home mortgage	Home equity loans	Auto loan	Own student loan	Use altern. fin. service	Pay interest on credit card balance	Credit card fees/ expensive behaviors
Female	0.05**	0.01	0.01	0.01	-0.01	0.03	0.04**
	(0.02)	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)
Age	-0.00	0.00	-0.01*	-0.01***	-0.01*	-0.00	-0.00
	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)
African American	0.00	-0.02	0.03	0.06***	0.17***	0.08**	0.14***
	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)
Hispanic	0.06	0.02	-0.01	0.00	0.04	0.05	0.03
	(0.04)	(0.03)	(0.04)	(0.01)	(0.03)	(0.04)	(0.04)
Asian	-0.11**	0.06	-0.13***	-0.03***	-0.01	-0.14***	-0.08*
	(0.05)	(0.04)	(0.04)	(0.01)	(0.05)	(0.05)	(0.04)
Other	0.00	-0.05***	0.01	0.05*	0.10**	0.09	-0.04
	(0.06)	(0.02)	(0.05)	(0.03)	(0.05)	(0.06)	(0.04)
≤High school	0.11	0.08	-0.02	0.01	-0.03	-0.02	0.01
	(0.09)	(0.09)	(0.07)	(0.04)	(0.04)	(0.07)	(0.06)
Some college	0.11	0.10	-0.05	0.09*	-0.02	-0.03	-0.02
	(0.08)	(0.08)	(0.07)	(0.05)	(0.04)	(0.07)	(0.06)
≥College	0.11	0.11	-0.11*	0.16**	-0.08**	-0.10	-0.04
	(0.09)	(0.09)	(0.07)	(0.08)	(0.04)	(0.07)	(0.06)
Single	-0.14***	-0.05***	-0.08***	0.01	-0.03	0.01	0.03
	(0.03)	(0.01)	(0.03)	(0.01)	(0.02)	(0.03)	(0.03)
Separated /divorced	-0.07***	-0.05***	-0.06***	0.04***	0.03	0.01	0.01
	(0.03)	(0.01)	(0.02)	(0.01)	(0.02)	(0.03)	(0.02)
Widow	-0.03	-0.05***	-0.02	0.01	0.03	-0.01	0.06
	(0.04)	(0.02)	(0.04)	(0.02)	(0.03)	(0.04)	(0.04)
Has dependent children	0.08***	0.01	0.02	0.01	0.04*	0.09***	0.10***
	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)
Income $15-25K	0.10*	0.23**	0.15***	-0.02***	-0.03	0.23***	0.15***
	(0.05)	(0.11)	(0.06)	(0.01)	(0.02)	(0.05)	(0.04)
Income $25-35K	0.23***	0.25**	0.27***	-0.02**	-0.02	0.28***	0.15***
	(0.05)	(0.12)	(0.06)	(0.01)	(0.03)	(0.05)	(0.05)
Income $35-50K	0.27***	0.28**	0.32***	-0.03***	-0.07***	0.28***	0.14***
	(0.05)	(0.11)	(0.05)	(0.01)	(0.02)	(0.04)	(0.04)
Income $50-75K	0.35***	0.29***	0.41***	-0.04***	-0.10***	0.31***	0.14***
	(0.05)	(0.10)	(0.05)	(0.01)	(0.02)	(0.04)	(0.04)
Income $75-100K	0.39***	0.34***	0.43***	-0.04***	-0.13***	0.25***	0.06
	(0.05)	(0.11)	(0.05)	(0.01)	(0.02)	(0.05)	(0.04)
Income $100-150K	0.48***	0.38***	0.42***	-0.05***	-0.15***	0.25***	0.07
	(0.04)	(0.12)	(0.05)	(0.01)	(0.01)	(0.05)	(0.04)
Income $150K+	0.39***	0.38***	0.42***	-0.04***	-0.15***	0.08	-0.10**
	(0.05)	(0.13)	(0.06)	(0.00)	(0.01)	(0.06)	(0.04)
Pseudo R-squared	0.09	0.08	0.07	0.18	0.11	0.04	0.05

Note: 2015 NFCS respondents age 56-61 (see text; N=2,672). *Use alternative financial services* refer to the use of payday loans, auto title loans, rent-to-own or pawnshops. *Credit card fees and expensive behaviors* include paying the minimum only, paying late or over-the-limit fees, and using the card for cash advances. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5. Multivariate Regression Model of Debt and Debt Behaviors among Older Respondents including Financial Literacy: 2015 NFCS (Probit marginal effects)

	Home mortgage	Home equity loans	Auto loan	Own student loan	Use altern. fin. service	Pay interest on credit card balance	Credit card fees/ expensive behaviors
Financial literacy index	-0.01	0.01	-0.01*	-0.00	-0.02***	0.00	-0.01*
	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.01)
Female	0.04**	0.02	0.00	0.01	-0.03*	0.03	0.03**
	(0.02)	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)
Age	-0.00	0.00	-0.01*	-0.01***	-0.01	-0.00	-0.00
	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)
African American	-0.00	-0.01	0.02	0.06***	0.15***	0.09***	0.13***
	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)
Hispanic	0.06	0.03	-0.02	0.00	0.03	0.05	0.03
	(0.04)	(0.03)	(0.04)	(0.01)	(0.03)	(0.04)	(0.04)
Asian	-0.11**	0.06	-0.13***	-0.03***	-0.01	-0.14***	-0.08*
	(0.05)	(0.04)	(0.04)	(0.01)	(0.05)	(0.05)	(0.04)
Other	-0.00	-0.05***	0.01	0.05	0.09*	0.09	-0.04
	(0.06)	(0.02)	(0.05)	(0.03)	(0.05)	(0.06)	(0.04)
≤High school	0.11	0.07	-0.01	0.02	-0.02	-0.02	0.02
	(0.09)	(0.09)	(0.07)	(0.04)	(0.04)	(0.07)	(0.06)
Some college	0.11	0.10	-0.04	0.09*	-0.00	-0.03	-0.01
	(0.08)	(0.08)	(0.07)	(0.05)	(0.05)	(0.07)	(0.06)
≥College	0.12	0.09	-0.10	0.17**	-0.06	-0.10	-0.02
	(0.09)	(0.08)	(0.07)	(0.08)	(0.04)	(0.07)	(0.06)
Single	-0.14***	-0.05***	-0.07***	0.01	-0.03	0.01	0.03
	(0.03)	(0.01)	(0.03)	(0.01)	(0.02)	(0.03)	(0.03)
Separated /divorced	-0.07***	-0.05***	-0.06***	0.04***	0.03	0.01	0.01
	(0.03)	(0.01)	(0.02)	(0.01)	(0.02)	(0.03)	(0.02)
Widow	-0.03	-0.04**	-0.02	0.01	0.03	-0.01	0.06
	(0.04)	(0.02)	(0.04)	(0.02)	(0.03)	(0.04)	(0.04)
Has dependent children	0.08***	0.01	0.02	0.01	0.03*	0.09***	0.09***
	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)
Income $15-25K	0.10**	0.22**	0.15***	-0.02***	-0.03	0.23***	0.15***
	(0.05)	(0.11)	(0.06)	(0.01)	(0.02)	(0.05)	(0.04)
Income $25-35K	0.23***	0.25**	0.27***	-0.02**	-0.02	0.28***	0.15***
	(0.05)	(0.12)	(0.06)	(0.01)	(0.03)	(0.05)	(0.05)
Income $35-50K	0.28***	0.27**	0.33***	-0.03***	-0.06***	0.28***	0.15***
	(0.05)	(0.11)	(0.05)	(0.01)	(0.02)	(0.04)	(0.04)
Income $50-75K	0.35***	0.28***	0.42***	-0.04***	-0.09***	0.31***	0.15***
	(0.05)	(0.10)	(0.05)	(0.01)	(0.02)	(0.04)	(0.04)
Income $75-100K	0.40***	0.33***	0.45***	-0.04***	-0.13***	0.24***	0.07
	(0.05)	(0.11)	(0.05)	(0.01)	(0.02)	(0.05)	(0.04)
Income $100-150K	0.48***	0.37***	0.44***	-0.05***	-0.14***	0.25***	0.08*
	(0.04)	(0.12)	(0.05)	(0.01)	(0.02)	(0.05)	(0.04)
Income $150K+	0.40***	0.36***	0.43***	-0.04***	-0.14***	0.07	-0.09**
	(0.05)	(0.13)	(0.06)	(0.01)	(0.01)	(0.06)	(0.04)
Pseudo R-squared	0.09	0.08	0.07	0.18	0.11	0.04	0.05

Note: 2015 NFCS respondents age 56-61 (see text; N=2,672). The variable *Financial literacy index* is the number of correct answers to the six financial literacy questions. *Use alternative financial services* refer to the use of payday loans, auto title loans, rent-to-own or pawnshops. *Credit card fees and expensive behaviors* include paying the minimum only, paying late or over-the-limit fees, and using the card for cash advances. Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 6. Self-Reported Financial Behaviors and Perceptions among Older Respondents: 2009 and 2015 NFCS

	% 2009 NFCS
Do not know the interest rate they are paying on their auto loan*	30.5
Do not know the interest rate they are paying on their mortgage*	11.1
Do not know whether they have an interest-only mortgage or a mortgage with an interest-only option*	23.8
Do not know the interest charged on their credit card with the largest balance*	22.6
When getting the most recent auto loan, did not compare offers from different lenders*	51.2
When getting the mortgage in previous 5 years, did not compare offers from different lenders*	38.1
When getting the most recent credit card, collected information about different cards from more than one company*	33.5
Did not check their credit score in the previous year	55.3
Did not obtain their credit report in the previous year	53.6
N	*4,543*

	% 2015 NFCS
Student loan for themselves, spouses/partners, children, grandchildren, or others	14.6
Did not try to figure out their future monthly payments*	55.8
Concerned about their ability to pay off student loans*	44.0
Do not know whether their payments are determined by their income*	20.0
If they could go through the borrowing process again, they would do something differently*	50.6
N	*2,672*

Note: 2009 NFCS respondents age 55-64, and 2015 NFCS respondents age 56-61 (see text).
* Values conditional on holding the asset or debt.

Table 7. Correlations between Self-Reported Financial Behaviors and Financial Literacy: 2015 NFCS

	Financial Literacy Score	
	Mean	*Median*
Student loan for themselves, spouses/partners, children, grandchildren, or others	3.71	4
Did not try to figure out their future monthly payments*	3.71	4
Concerned about their ability to pay off student loans*	3.37	4
Do not know whether their payments are determined by their income*	3.33	4
If they could go through the borrowing process again, they would do something differently*	3.64	4

* Values conditional on holding the asset or debt.

Appendix A: Descriptive Statistics for Respondents age 56-61 and our Analysis Sample: 2015 NFCS

	Analysis sample (N=2,672)			Full sample (N=2,942)		
	Mean	*Min*	*Max*	*Mean*	*Min*	*Max*
Female	0.53	0	1	0.54	0	1
Age	58.53	56	61	58.51	56	61
African-American	0.10	0	1	0.11	0	1
Hispanic	0.05	0	1	0.06	0	1
Asian	0.03	0	1	0.03	0	1
Other	0.03	0	1	0.03	0	1
≤High school	0.21	0	1	0.22	0	1
Some college	0.43	0	1	0.43	0	1
≥College	0.33	0	1	0.32	0	1
Single	0.17	0	1	0.17	0	1
Separated or divorced	0.18	0	1	0.19	0	1
Widow	0.05	0	1	0.05	0	1
Has dependent children	0.20	0	1	0.21	0	1
Income $15-25K	0.12	0	1	0.13	0	1
Income $25-35K	0.08	0	1	0.09	0	1
Income $35-50K	0.15	0	1	0.15	0	1
Income $50-75K	0.19	0	1	0.18	0	1
Income $75-100K	0.15	0	1	0.14	0	1
Income $100-150K	0.14	0	1	0.13	0	1
Income $150K+	0.07	0	1	0.06	0	1

Note: NFCS respondents age 56-61. Analysis sample refers to respondents with complete information on borrowing behaviors and other key characteristics. Full sample refers to all respondents in that age group.

Appendix B: Additional Information on Financial Literacy of Older Respondents: 2015 NFCS

Table 1. Financial Literacy by Education, Income, and Ethnicity

	Full sample	≤High school	Some college	≥College	Income <$35K	Income $35-75K	Income >$75K	White	African American	Hispanic	Asian	Other
Financial literacy index (0-6)	3.69	2.96	3.56	4.36	3.02	3.67	4.28	3.82	2.91	3.21	4.04	3.46
Interest Question Correct	0.82	0.72	0.82	0.90	0.73	0.83	0.89	0.85	0.70	0.74	0.86	0.77
Inflation Question Correct	0.77	0.63	0.76	0.87	0.68	0.77	0.85	0.80	0.57	0.66	0.84	0.74
Risk Question Correct	0.55	0.37	0.51	0.73	0.41	0.53	0.69	0.58	0.42	0.42	0.62	0.47
Mortgage Question Correct	0.84	0.75	0.83	0.91	0.71	0.85	0.93	0.86	0.68	0.79	0.82	0.82
Bond Question Correct	0.35	0.25	0.31	0.48	0.23	0.34	0.47	0.36	0.27	0.31	0.49	0.30
Compounding Question	0.35	0.23	0.32	0.48	0.26	0.34	0.44	0.37	0.27	0.28	0.41	0.35
N	*2,672*	*621*	*1,154*	*897*	*815*	*903*	*954*	*2,092*	*280*	*147*	*71*	*82*

Note: 2015 NFCS respondents age 56-61 (see text; N=2,672).

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