

This PDF is a selection from a published volume from the National Bureau of Economic Research

Volume Title: Women Working Longer: Increased Employment at Older Ages

Volume Author/Editor: Claudia Goldin and Lawrence F. Katz, editors

Volume Publisher: University of Chicago Press

Volume ISBNs: 978-0-226-53250-9 (cloth); 978-0-226-53264-6 (e-ISBN)

Volume URL: <http://www.nber.org/books/gold-12>

Conference Date: May 21-22, 2016

Publication Date: April 2018

Chapter Title: Older Women's Labor Market Attachment, Retirement Planning, and Household Debt

Chapter Author(s): Annamaria Lusardi, Olivia S. Mitchell

Chapter URL: <http://www.nber.org/chapters/c13801>

Chapter pages in book: (p. 185 – 215)

Older Women's Labor Market Attachment, Retirement Planning, and Household Debt

Annamaria Lusardi and Olivia S. Mitchell

Economic research has shown convincingly that young and middle-aged women's attachment to the paid labor force has risen substantially over time in America.¹ To examine whether this pattern might also characterize older women, we examine several cohorts of older women in the Health and Retirement Study (HRS) to document the size of possible future changes and to pinpoint which groups might be most likely to extend their work lives. In addition, we investigate what role debt might play in older women's continued work. For this, we examine the 2012 National Financial Capability Study (NFCS), which provides detailed information on how older women appear to be managing their debt and their retirement planning efforts. Our focus throughout is on descriptive analysis rather than proving causal links between retirement and debt.

Our findings from the HRS show that recent cohorts of older women were

Annamaria Lusardi is the Denit Trust Chair of Economics and Accountancy at the George Washington University School of Business and a research associate of the National Bureau of Economic Research. Olivia S. Mitchell is the International Foundation of Employee Benefit Plans Professor, as well as Professor of Insurance/Risk Management and Business Economics/Policy, Executive Director of the Pension Research Council, and Director of the Boettner Center on Pensions and Retirement Research, all at the Wharton School of the University of Pennsylvania and a research associate of the National Bureau of Economic Research.

The authors thank Julie Agnew, Claudia Goldin, Larry Katz, and participants at the Women Working Longer conference for comments, and Noemi Oggero and Yong Yu for expert programming and research assistance. Research support was provided by the TIAA Institute and the Pension Research Council/Boettner Center at the Wharton School of the University of Pennsylvania. Opinions and conclusions expressed herein are solely those of the authors and do not represent the opinions or policy of the funders or any other institutions with which the authors are affiliated. For acknowledgments, sources of research support, and disclosure of the authors' material financial relationships, if any, please see <http://www.nber.org/chapters/c13801.ack>.

1. See, for instance, Goldin (2006, 2014) and the citations included therein.

more likely to be working at both ages fifty-one to fifty-six and fifty-seven to sixty-one than the earliest cohort of the same age, first surveyed in 1992.² Effects differ significantly over time, in that the mean probability of being at work for the baseline HRS sample ages fifty-one to fifty-six when surveyed was 64.9 percent, and 54.8 percent for ages fifty-seven to sixty-one. All subsequent cohorts displayed higher rates of work, particularly for the fifty-one- to fifty-six-year-old group, controlling on other factors. Thus, there is a rising probability of working among older women across cohorts.

We also find that recent cohorts of women drawing near to retirement have more debt than before, and their increased debt is positively associated with these women being more likely to work currently, as well as to plan to continue to work in the future. Somewhat surprisingly, total debt more than doubled in constant dollars and, in recent waves, older women were increasingly likely to hold mortgage debt in excess of half their residential value. Additionally, the percentage of women having less than \$25,000 in savings for recent cohorts is roughly double that of the earlier cohorts.

We also draw on data from the 2012 NFCS to explore the factors associated with retirement planning, debt and debt management, and an indicator of financial fragility. As shown in previous work, planning for retirement is associated with better retirement security (Lusardi and Mitchell 2007a, 2011a, 2014). Moreover, many people are found to pay high interest and fees on the debt they carry, and debt is part of household balance sheets throughout the lifetime and even close to retirement (Lusardi and Mitchell 2013; Lusardi and Tufano 2015). Correlates of retirement planning include having higher income, more education, and greater financial literacy, for both age groups we evaluate (ages fifty-one to fifty-six and fifty-seven to sixty-one). Factors associated with overindebtedness and financial fragility include lower financial literacy, having more financially dependent children, and experiencing unexpected large income declines. Accordingly, shocks do play a role in the accumulation of debt close to retirement. Nevertheless, it is not enough to have resources: people also need the capacity to manage those resources, if they are to stay out of debt and find retirement security at older ages.

6.1 Prior Studies

Many prior studies have explored American women's labor supply patterns over time (see, e.g., Attanasio, Low, and Sánchez-Marcos 2008; Goldin 2006; Michaud and Rohwedder 2015). Yet there has been relatively little

2. The fifty-one to fifty-six age groups of women were surveyed in 1992 (the HRS baseline group, born 1936 to 1941), the 1998 War Babies (WB) group (born 1942 to 1947), the 2004 Early Baby Boomers (EBB) cohort (born 1948–1953), and the 2010 Middle Baby Boomer (MBB) group (born 1954 to 1959). The three fifty-seven to sixty-one age cohorts of women were surveyed in 1992 for the baseline HRS cohort, in 2004 for the WB, and in 2010 for the EBB.

work focusing on cohort changes in older women's participation patterns and debt, as well as financial literacy. In this section, we review relevant literature on these issues.

Several authors have evaluated the links between debt management and financial literacy, and they have concluded that the least financially literate incurred high fees and used high-cost borrowing. The least financially knowledgeable also report that their debt loads were excessive and they were often unable to judge their debt positions (Lusardi and Tufano [2015], and the references therein). This group was also more likely to borrow from their 401(k) and pension accounts (Lu et al. 2017; Utkus and Young 2011) and to use high-cost methods of borrowing such as payday loans (Lusardi and de Bassa Scheresberg 2013).

Some research has linked the quality of financial decision making and age, and the findings offer little reason for complacency. For instance, one influential study (Agarwal et al. 2009) found that the quality of financial decision making fell at older ages in ten financial areas, including credit card balance transfers, home equity loans and lines of credit, auto loans, credit card interest rates, mortgages, small-business credit cards, credit card late-payment fees, credit card over-the-limit fees, and credit card cash-advance fees. Older persons pay higher financial service fees and interest.

In the wake of the financial crisis, these age-linked patterns are now translating into awareness that older Americans are nearing retirement with levels of debt that are of increasing concern.³ For instance, debt held by borrowers between ages fifty to eighty rose roughly 60 percent between 2003 and 2015, while aggregate debt balances held by younger borrowers declined modestly (Brown et al. 2016). Much of this rise consisted of home mortgages, held by over half (55 percent) of the American population ages fifty-five to sixty-four, and about the same fraction (50 percent) had credit card debt (Bucks et al. 2009). Moreover, among people ages sixty-five to seventy-four, two-thirds held some form of debt, almost half had mortgages or other loans on their primary residences, over one-third held credit card debt, and a quarter had installment loans. In recent years, on average, older borrowers held substantially more debt than did borrowers of the same age in the 1990s: for instance Lusardi and Mitchell (2013) showed that the percentage of people ages fifty-six to sixty-one having debt swelled to 71 percent in 2008, up from 64 percent in 1992. Additionally, the value of their debt rose sharply over time. Median household debt in 1992 was about \$6,200, but by 2002 it had more than tripled. By 2008, it was \$28,300—more than quadruple the 1992 level.

Accompanying this trend has been an increase over time in the proportion of older Americans filing for bankruptcy: people sixty-five years and

3. For a few recent examples, see AARP (2013), Cho (2012), Copeland (2013), Pham (2011), Securian (2013), Lusardi and Mitchell (2013), and the references therein.

older are the fastest-growing group in terms of bankruptcy filings, which stood at 2 percent in 1991 and rose to over three times that rate by 2007 (Pottow 2012). Credit card interest and fees was the most cited reason for bankruptcy filings by older people, with two-thirds of them providing this reason.⁴ Moreover, there is also a continuing tendency of women filing for bankruptcy more often than men, and women report being overextended on credit as the key reason for filing (Institute for Financial Literacy 2011).

Another key factor spurring the increase in debt over time has been the much higher prices paid by recent cohorts for housing, and their resulting larger residential mortgages. For example, the median amount older homeowners owed on mortgages increased 82 percent, from approximately \$43,400 in 2001 to \$79,000 in 2011. Further, data show older consumers owe more on their mortgages in relation to the value of their home than their peers did a decade ago. The outstanding balance on their mortgages relative to the value of their homes (debt-to-value ratio) increased from 30 to 46 percent between 2001 and 2011 (CFPB 2014). Until 2009, single women—the fastest growing segments of the housing market—purchased more homes than single men. Since, on average, women pay more for their mortgages than do men, it is unsurprising that mortgage debt is reported to be especially high among older women (Cheng, Lin, and Liu 2011; Clark 2015; Drew 2006).

A related point is that subprime mortgage lenders targeted minority, elderly, and female buyers in the years leading up to the financial crisis. Prior to the financial crisis, female homebuyers were 32 percent more likely to have subprime mortgage loans, despite having higher credit scores on average (US Congress Joint Economic Committee 2008). These mortgages, which made up only 13 percent of all home loans but accounted for 55 percent of foreclosure starts, left older Americans vulnerable, and when housing prices sharply declined many turned to delinquency (Leland 2008). This led to a fivefold rise in the serious delinquency rate between 2001 and 2011 for older mortgage holders ages sixty-five to seventy-four (CFPB 2014), underscoring the risk of holding such high levels of debt at older ages.

There is also evidence that rapid changes in housing prices altered older Americans' labor market attachment. For example, Begley and Chan (2015)

4. Other data sources confirm these findings. People fifty-five years and older hold widespread credit card debt and pay considerable fees for late payment and exceeding credit limits, when they should be at the peak of their wealth accumulation (Lusardi 2011; Lusardi and Tufano 2015). Data from the 2012 National Financial Capability Study highlighted that 60 percent of preretirees had at least one source of long-term debt, and 26 percent had at least two. Nearly 40 percent of preretirees used credit cards expensively, and the same percentage felt heavily indebted (Lusardi and de Bassa Scheresberg 2014). Other surveys suggest similar conclusions. The 2013 Survey of Consumer Finances showed that family net worth—the difference between families' gross assets and their liabilities—generally increases with age, with a plateau or modest decreases for the oldest age groups relative to the near-retirement age groups (Bricker et al. 2014). The median net wealth of near retirees (households headed by someone between the ages of fifty-five and sixty-four) was lower in 2013 than in 1989 (Rosenick and Baker 2014).

explored the relationship between unanticipated changes in housing wealth, such as those experienced during the Great Recession, and retirement behavior by examining how the variation in the timing of housing price influenced work effort. They showed that women experiencing large negative housing price shocks were 25 percent less likely to retire, relative to those experiencing positive shocks. Moreover, homeowners having mortgages were less likely to retire (if not yet retired) or more likely to reverse retirement (if already retired). Farnham and Sevak (2016) found that people responded to rising home prices by revising down their expected retirement ages. Specifically, they estimated that a 10 percent real increase in home value reduced expected retirement ages by about four months. One might anticipate that the mechanism worked in reverse when housing prices fell during the financial crisis and thereafter.

The trend in debt is beginning to attract attention from the media, with recent articles exhorting people to cut their debt as they near retirement (e.g., Drousseau 2016). Additionally, the high and rising levels of household debt are increasingly troubling older persons (FINRA 2006, 2007; United States Government Accountability Office 2015). For instance, just 9 percent of workers in 2016 who described their debt as a major problem said they were very confident of having enough money to live comfortably throughout retirement. Yet retirement saving efforts are still lagging, according to the 2016 Retirement Confidence Survey (RCS) (Blakely, VanDerhei, and Copeland 2016). Instead, people who admitted they were undersaving indicated that they would likely cope with the shortfall by either saving more or working longer.⁵

Our contribution here examines cohort changes in older women's work plans and debt burdens using the HRS, as well as the links between financial literacy and debt stresses in the NFCS. Our results point to the need for boosting older women's retirement security and the important role of managing debt later in life.

6.2 Cohort Trends in Continued Work and the Role of Debt in the HRS

In this section we analyze cohorts of women observed in the HRS, a nationally representative survey of respondents older than fifty years. Specifically, we focus on four birth cohorts of women first surveyed when ages fifty-one to fifty-six and three cohorts of women surveyed when ages fifty-seven to sixty-one, to evaluate each of them on the verge of retirement. We utilize extensive information gathered by the HRS about these women's current employment status and future work plans, along with their socio-demographic characteristics including marital and family histories. In so

5. A worrisome point is that some retirees indicate that they could not work longer because they were forced to leave the workforce earlier than planned (for reasons such as health problems or disability) (Banerjee 2014).

doing, we evaluate whether there are statistically significant differences across the cohorts after controlling on other factors.⁶ We also evaluate whether debt is correlated with anticipated future work. Finally, we assess the extent to which birth cohorts of older women differ with regard to how much debt they held as they entered their fifties, permitting us to judge whether rising levels of debt are associated with plans to work longer.

6.2.1 Cohort Differences

For the cohort analysis, we examine four groups of women initially surveyed when they were ages fifty-one to fifty-six, and three groups surveyed between ages fifty-seven to sixty-one. This analysis is facilitated by the structure of the HRS (see volume appendix, figure VA.1), which periodically enrolls refresher cohorts over time. For the age fifty-one to fifty-six group, we include those first surveyed in 1992 (the HRS baseline group, born 1936 to 1941), the 1998 War Babies (WB) group (born 1942 to 1947), the 2004 Early Baby Boomers (EBB) cohort (born 1948 to 1953), and the 2010 Middle Baby Boomer (MBB) group (born 1954 to 1959). The three cohorts of fifty-seven to sixty-one-year-old women were surveyed in 1992 for the baseline HRS cohort, in 2004 for the War Babies, and in 2010 for the Early Baby Boomers.⁷

Our empirical modeling involves multivariate analysis of each respective outcome variable (y) on a vector of cohort dummies, where the HRS baseline is the reference category. The main outcomes analyzed are an indicator of the respondents' current employment status, and their estimated chances of working at age sixty-five. In both cases, the estimated coefficients on the cohort dummies refer to the differential behavior of subsequent cohorts versus the HRS baseline 1992 cohort. In all cases, we control for the respondent's age, race (white versus other), and ethnicity (Hispanic versus other). These factors are, of course, most likely to be exogenous to past work patterns. We also control on the respondent's level of education, whether she had experienced marital disruption (ever divorced or widowed), whether she was in fair or poor (subjective) health, her number of children, and ratios of her household primary residence and other debt to, respectively, housing value and liquid assets. These factors permit us to ascertain whether what might appear to be cohort differences could instead be associated with differences in socioeconomic and demographic factors over time, including changes in financial markets and the increased opportunities to borrow and take on debt. The entire sample includes slightly more than 6,700 women ages fifty-one to fifty-six, and around 4,200 women ages fifty-seven to sixty-one.

Our first set of results examines whether women reported working for pay at the time of their interview, and table 6.1 reports coefficient estimates of the linear probability analysis. Panel A provides results for current work

6. See also Goldin and Katz (chapter 1, this volume).

7. Descriptive statistics for our sample appear in appendix table 6A.1.

Table 6.1 Factors associated with older women's current employment in the Health and Retirement Study (HRS)

	A. Women ages 51–56		B. Women ages 57–61	
WB	0.069*** (0.017)	0.067*** (0.017)	0.029 (0.023)	0.018 (0.024)
EBB	0.051*** (0.018)	0.047*** (0.018)	0.061*** (0.023)	0.045* (0.024)
MBB	0.041** (0.018)	0.034* (0.018)		
Age	-0.001 (0.004)	-0.001 (0.004)	-0.028*** (0.007)	-0.026*** (0.007)
White	0.005 (0.016)	0.005 (0.016)	0.039 (0.025)	0.038 (0.025)
Hispanic	0.003 (0.024)	0.003 (0.024)	-0.050 (0.037)	-0.046 (0.037)
Education, HS	0.101*** (0.019)	0.096*** (0.019)	0.112*** (0.027)	0.106*** (0.027)
Education, come college	0.153*** (0.019)	0.146*** (0.019)	0.172*** (0.028)	0.172*** (0.028)
Education, college +	0.195*** (0.019)	0.188*** (0.020)	0.223*** (0.029)	0.219*** (0.029)
Marital disruption	0.083*** (0.015)	0.088*** (0.015)	0.064*** (0.022)	0.067*** (0.022)
Fair/poor health self-reported	-0.300*** (0.019)	-0.300*** (0.019)	-0.291*** (0.024)	-0.287*** (0.024)
Number of children	-0.008** (0.004)	-0.009** (0.004)	-0.004 (0.005)	-0.006 (0.005)
All primary res. loans/primary res. value		0.062*** (0.022)		0.090** (0.035)
Other debt/liquid assets		0.001* (0.000)		-0.001 (0.001)
<i>N</i>	6,677	6,677	4,160	4,160
<i>R</i> -squared	0.107	0.112	0.100	0.104
Mean of dep. var.	0.709	0.709	0.607	0.607
St. dev. of dep. var.	0.454	0.454	0.488	0.488
Mean of dep. var., HRS only	0.649	0.649	0.548	0.548
St. dev. of dep. var., HRS only	0.477	0.477	0.498	0.498

Note: Coefficient estimates from linear probability analysis, standard errors in parentheses. Controls for missing values included where relevant. Four cohorts of women ages fifty-one to fifty-six were surveyed: in 1992 the HRS baseline group (born 1936–1941); the 1998 War Babies (WB) group (born 1942–1947); the 2004 Early Baby Boomers (EBB) cohort (born 1948–1953); and the 2010 Middle Baby Boomer (MBB) group (born 1954–1959). Three cohorts of women ages fifty-seven to sixty-one were surveyed: in 1992 for the baseline HRS cohort, in 2004 for the WB, and in 2010 for the EBB. Marital disruption defined as divorced/separated or widowed, all primary res. loans/primary res. value is defined as the value of all primary residence loans divided by the value of the primary residence, and other debt/liquid assets is defined as the ratio of other debt to liquid assets (excluding the home). (See also appendix table 6A.1.)

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

among the women ages fifty-one to fifty-six when surveyed, while panel B looks at the same outcomes for the older ages fifty-seven to sixty-one. For both age groups, the first column excludes debt-to-asset ratio variables, while the second includes them to allow comparison of results.

Looking across the first three rows of coefficient estimates, it is clear that, compared with the first HRS baseline group, recent cohorts of women were increasingly likely to be working in their fifties. The mean probability of being at work for the baseline HRS sample age fifty-one to fifty-six when surveyed was 64.9 percent, and 54.8 percent for those age fifty-seven to sixty-one. All subsequent cohorts displayed higher rates of work, particularly for the age fifty-one to fifty-six cohort. For instance, younger War Babies women ages fifty-one to fifty-six had about a 7 percentage point greater labor force attachment, or around 11 percent higher, than the HRS reference cohort. Early Boomer women ages fifty-one to fifty-six were 4.7–5.1 percentage points more attached to the labor force, or about 8 percent more than the HRS, while the older group (ages fifty-seven to sixty-one) had participation rates of 4.5 to 6.1 percentage points higher, or 8 to 11 percent more than the HRS reference group. The younger Middle Boomers (MBB) also were working more than the reference group, with 3.4 to 4.1 percentage point greater employment rates, or about 6 percent over the HRS reference cohort.

The measured effects are robust to the inclusion or exclusion of the financial variables, as are virtually all of the other coefficient estimates.⁸ In other words, these estimates confirm that the probability of working rose across the cohorts compared with the HRS baseline. Nevertheless, the magnitudes were somewhat larger for the younger War Babies group, a bit less for the Early Boomers, and smallest (though still statistically significantly different from zero) for the Middle Baby Boomer group. Among the older women, the Early Boomers were substantially more likely to be working compared with the baseline HRS.

In table 6.2 we focus on intentions to keep working, where among the baseline HRS cohort, 22.5 percent of the younger group (ages fifty-one to fifty-six) and 23.4 of the older group (ages fifty-six to sixty-one) reported they would still be working at age sixty-five. Interestingly, there is no significant difference between the baseline HRS cohort and the War Babies in terms of women's plans to continue working, but both Boomer cohorts were significantly more likely to say they intended to work at age sixty-five, compared with the original HRS cohort.⁹ Moreover, intentions to work at age sixty-five rose over time. That is, the age fifty-one to fifty-six Early Boomers were about 3.3 to 3.6 percentage points (or 16 percent) more likely to work at

8. In results not detailed here, we have explored additional models where we interacted the debt variables with marital disruption to test whether including these terms alters the estimated cohort effects. Doing so does not change conclusions reported in the text.

9. The reader is reminded that the question about chances of working at age sixty-five was asked only of those working when surveyed at a younger age.

Table 6.2 Factors associated with older women's anticipated future work (HRS)

	A. Women ages 51–56		B. Women ages 57–61	
WB	-0.590 (1.517)	-0.603 (1.517)	1.777 (1.852)	1.456 (1.852)
EBB	3.451** (1.430)	3.332** (1.428)	4.894*** (1.705)	4.455*** (1.702)
MBB	7.643*** (1.427)	7.422*** (1.427)		
Age	-0.628* (0.350)	-0.592* (0.349)	-1.033* (0.562)	-0.988* (0.560)
White	3.550*** (1.209)	3.536*** (1.210)	4.436*** (1.671)	4.616*** (1.671)
Hispanic	2.442 (1.937)	2.406 (1.941)	-2.005 (2.328)	-1.768 (2.328)
Education, HS	4.398*** (1.691)	4.133** (1.691)	1.485 (2.155)	1.304 (2.149)
Education, some college	6.972*** (1.807)	6.519*** (1.814)	6.283*** (2.422)	6.264*** (2.417)
Education, college +	9.043*** (1.904)	8.597*** (1.911)	5.694** (2.598)	5.581** (2.593)
Marital disruption	9.602*** (1.309)	9.731*** (1.310)	8.390*** (1.693)	8.473*** (1.694)
Fair/poor health self-reported	-10.860*** (1.385)	-10.870*** (1.384)	-14.460*** (1.772)	-14.215*** (1.769)
Number of children	-0.371 (0.322)	-0.399 (0.322)	-0.141 (0.394)	-0.201 (0.396)
All primary res. loans/primary res. value		2.635** (1.034)		2.364** (1.001)
Other debt/liquid assets		0.014* (0.008)		0.052 (0.059)
Intercept	47.610** (18.750)	45.271** (18.734)	77.168** (32.996)	74.089** (32.885)
<i>N</i>	5,152	5,152	2,976	2,976
<i>R</i> -squared	0.060	0.063	0.064	0.066
Mean of dep. var.	26.289	26.289	25.737	25.737
St. dev. of dep. var.	32.484	32.484	33.338	33.338
Mean of dep. var., HRS only	22.537	22.537	23.379	23.379
St. dev. of dep. var., HRS only	31.617	31.617	32.773	32.773

Note: Question about the probability of working at age sixty-five asked only of those working at survey date. (See also notes to table 6.1.)

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

age sixty-five, where the Middle Boomers were 7.4 to 7.6 percentage points (or about 35 percent) more likely to plan to work longer, compared to the benchmark. For the older group (ages fifty-seven to sixty-one) the increase was similar in percentage points (4.5 to 4.9), but as it was measured on a slightly higher base, the 20 percent increase was slightly lower. In any case, the most recent cohorts for which we have data appear to be notably more attached to the labor force into their midsixties. As before, comparing panels A in tables 6.1 and 6.2, we again see that the magnitudes of the cohort effects are relatively invariant to including additional controls.¹⁰ Therefore little of what we have attributed to cohort differences is associated with more recent waves of older women having more education, higher rates of marital disruption, and fewer children.

6.2.2 Impacts of Other Factors

We also seek to analyze the impact of other factors on women's current and future work patterns. Looking across tables 6.1 and 6.2, we see that age has a generally negative effect when it is statistically significant, indicating that even within these narrow age bands, older women's labor market attachment does decline. Nevertheless, the estimated age coefficients are only weakly significant in table 6.2 across the board, and not significant for the younger women in table 6.1. Thus, older women's workforce attachment does not decline in lockstep with age, by any means. Another factor consistently significant and positively associated with work is additional educational attainment. For instance, having a college degree raised labor force participation by around 20 percentage points for both age groups in table 6.1, compared to being a high school dropout, and raised the probability of working at age sixty-five by 6–9 percentage points (table 6.2). Interestingly, widowed/divorced women were 6 to 8 percentage points more likely to be working currently, and they have an 8 to 9 percentage point greater expectation of working at age sixty-five.¹¹ Women in poor health are much less likely to be employed: thus, those in fair or poor health were 29 to 30 percentage points less likely to be working than those reporting being healthier. Among workers, those in fair/poor health were 11 to 15 percentage points less likely to project that they would still be working at age sixty-five, compared to their healthier counterparts. Finally, the number of children has a significant negative effect on older women's current employment, but only for the fifty-one to fifty-six age group and the impact is small (–0.9 percentage points).

10. In results not detailed here we have also explored models where we interacted the debt variables with marital disruption, to test whether including these terms alters the estimated cohort effects. Doing so does not change conclusions reported in the text.

11. Consistent with our results, Olivetti and Rotz (chapter 5, this volume) found that changes in marital history and marital status can explain a fraction of the increase in women's employment later in life.

6.2.3 What Role for Debt?

The last two rows of tables 6.1 and 6.2 speak to the question of how debt is associated with older women's work patterns, a topic of substantial current interest (Lusardi, Mitchell, and Oggero 2016). Our findings show that having mortgage debt, in particular, is associated with a higher probability of women working for pay and expecting to be working at age sixty-five. For instance, an increase of a standard deviation in the ratio of mortgage debt to home value in table 6.2 is associated with a large increase in women's anticipated probability of working at age sixty-five for both age groups.¹² This finding is in line with Fortin (1995), who suggested that liquidity constraints related to home down payments prompted many women to work more. The effect we discern here is complementary, suggesting that women may defer retirement due to the need to help repay their mortgage debt. The second debt variable we included in the model, the ratio of nonmortgage debt to liquid assets, is generally small and not statistically significant across tables 6.1 and 6.2.

To further examine the role of debt, we note that previous research has reported that people are reaching retirement age today holding more debt than in the past.¹³ Accordingly, we devote some additional attention to various measures of older women's debt and financial fragility across cohorts in table 6.3.

Results show that Baby Boomer cohorts are more likely to have debt later in life for both age groups (fifty-one to fifty-six and fifty-seven to sixty-one), compared with the baseline HRS cohort (panel 1). Moreover, recent cohorts have higher levels of total debt late in life (panel 2). It is also striking that cohort mean and medial debt levels have been steadily rising over time. For example, while the median (*p*50) debt of the HRS baseline was a little more than \$15,000 for women ages fifty-one to fifty-six, this level almost tripled for the Middle Baby Boomers (\$43,200; all values are in \$2015). Increases in debt are even more striking for the older group of women ages fifty-seven to sixty-one: the Early Baby Boomer cohort had almost eight times as much debt as the baseline HRS cohort (\$31,320 versus \$4,175).

One reason for the huge expansion in debt is that households have taken on larger mortgages in recent years. This is the pattern we observe for both of the age groups we examine (panel 3 of table 6.3). Mortgages along with loans related to the primary residence not only grew in absolute value, but they also rose as a percentage of the value of the primary residence. These ratios more than doubled for the older respondents. The older HRS baseline

12. We note that 80 percent of the sample owns a home.

13. See, for instance, AARP (2013), Bucks et al. (2009), Butrica and Karamcheva (2013), Copeland (2013), Lusardi and Mitchell (2013), Lusardi, Mitchell, and Oggero (2016), and Pottow (2012).

Table 6.3 Differences in older women's debt by type, by cohort and age group (HRS)

	<i>p</i> 50	Mean	<i>N</i>	<i>p</i> 50	Mean	<i>N</i>
3. All primary res. loans/primary res. value > 0.5 (0/1)						
1. Have debt (0/1)						
Age group 51–56	HRS	0	0.42	2,806	HRS	0
	WB	0	0.41	847	WB	0
	EBB	0	0.44	1,207	EBB	0
Age group 57–61	MBB	1	0.51	1,872	MBB	0
	HRS	0	0.37	2,056	HRS	0
	WB	0	0.39	699	WB	0
	EBB	0	0.44	1,424	EBB	0
4. Have less than \$25,000 in savings (0/1)						
2. Total debt (\$2015)						
Age group 51–56	HRS	15,030	59,003	2,806	HRS	0
	WB	27,360	62,990	847	WB	0
	EBB	37,386	91,398	1,207	EBB	0
Age group 57–61	MBB	43,200	98,210	1,872	MBB	0
	HRS	4,175	32,976	2,056	HRS	0
	WB	23,560	68,066	699	WB	0
	EBB	31,320	96,701	1,424	EBB	0

Note: Total debt includes the value of mortgages and other loans on the household's primary residence, other mortgages, and other debt (including credit card debt, medical debt, etc.). All dollar values in \$2015. Savings is defined as total net worth or total assets minus total debt. (See also notes to table 6.1.)

cohort (age fifty-seven to sixty-one) neared retirement with a ratio of mortgages and loans to the value of the primary residence of 0.11, but the ratio grew to 0.28 for the Early Boomers. Moreover, older women are more likely to be in households where the ratio of mortgage debt to residential value has doubled, from 18 to 32 percent, comparing the Middle Boomers to the HRS baseline cohort. Many older women will need to manage mortgage debt well into their older years, consistent with the findings reported by Lusardi, Mitchell, and Oggero (2016). In other words, during retirement Boomer cohorts will have to use their income and assets to repay debt, in contrast to the earlier cohort.

Even more striking is the fact that higher proportions of older women are in financially fragile circumstances, compared to two decades ago. Only 18 percent of the younger HRS cohorts had less than \$25,000 in savings,¹⁴ whereas one-third of the Middle Baby Boomer group reported having so little savings (panel 4). We conclude that higher debt levels in later life could well be contributing to rising labor force attachment among older women.

We provide four panels in table 6.4 to identify the key factors associated with financial fragility, using the measures introduced in table 6.3. Panel A provides a multivariate probit analysis for the probability that women had any debt (marginal effects reported). Here we see that the Middle Boomers are significantly more likely to have debt than previous cohorts. Being in fair/poor health is also statistically significantly associated with having debt, and for the younger age group, owning a home plays a role. Panel B summarizes the correlates of total debt (in \$10,000, for 2015 dollars), and again we confirm that debt is higher for the more recent cohorts versus the HRS baseline, particularly among homeowners. Panel C focuses on which groups have the highest ratio of residential mortgage relative to the value of their primary residence. Here we see that relative to the HRS baseline, all subsequent cohorts prove to be more indebted. And once again, homeowners are particularly likely to have relatively higher mortgages, compared to their home values. Finally, panel D summarizes the key factors associated with financial fragility, which we measure as someone reporting that she had less than \$25,000 in savings. The recent cohorts are once again far more likely to be financially fragile by this measure, with the Middle Boomers being two to three times as likely to be in poor financial shape compared to their earlier counterparts. Interestingly, in this table, homeowners appear to be less vulnerable, as they are less likely to report being cash-poor. Overall, the impact of poor health is uneven, reducing the chance of having any debt but raising the probability of not having savings worth \$25,000.

14. Savings is defined as total net worth or total assets minus total debt.

Table 6.4 Factors associated with debt among HRS women

	A. Women ages 51–56	B. Women ages 57–61
<i>A. Having any debt (marginal effects reported from probit models)</i>		
WB	–0.020 (0.021)	0.020 (0.024)
EBB	0.013 (0.020)	0.077*** (0.023)
MBB	0.091*** (0.020)	
Age	–0.014*** (0.005)	–0.002 (0.007)
White	–0.020 (0.018)	–0.058** (0.024)
Hispanic	–0.024 (0.026)	–0.145*** (0.032)
Education, HS	0.097*** (0.024)	0.109*** (0.029)
Education, some college	0.110*** (0.025)	0.042 (0.032)
Education, college +	0.076*** (0.027)	0.036 (0.035)
Marital disruption	0.035* (0.018)	0.041* (0.022)
Fair/poor health self-reported	0.053*** (0.019)	0.063** (0.024)
Number of children	0.006 (0.004)	0.010** (0.005)
Own home	0.040* (0.020)	–0.018 (0.027)
<i>N</i>	6,732	4,179
<i>R</i> -squared	0.013	0.021
Mean of dep. var.	0.453	0.401
St. dev. of dep. var.	0.498	0.490
Mean of dep. var., HRS only	0.417	0.368
St. dev. of dep. var., HRS only	0.493	0.482
<i>B. Total household debt (OLS)</i>		
WB	–0.322 (0.515)	3.011*** (0.467)
EBB	2.240*** (0.544)	5.658*** (0.583)
MBB	3.163*** (0.594)	
Age	–0.317*** (0.108)	–0.646*** (0.199)
White	–0.131 (0.437)	0.570 (0.417)

Table 6.4 (continued)

	A. Women ages 51–56	B. Women ages 57–61
Hispanic	1.088 (0.780)	-1.295*** (0.474)
Education, HS	1.245*** (0.481)	0.788** (0.400)
Education, some college	3.514*** (0.511)	1.250** (0.490)
Education, college +	7.573*** (0.760)	6.938*** (0.831)
Marital disruption	-1.739*** (0.380)	-2.045*** (0.416)
Fair/poor health self-reported	-0.933** (0.412)	-0.805** (0.394)
Number of children	0.257** (0.118)	0.311*** (0.102)
Own home	7.552*** (0.328)	5.344*** (0.358)
Intercept	14.123** (5.691)	34.750*** (11.774)
<i>N</i>	6,732	4,179
<i>R</i> -squared	0.129	0.169
Mean of dep. var.	8.007	6.895
St. dev. of dep. var.	14.176	12.373
Mean of dep. var., HRS only	5.900	3.298
St. dev. of dep. var., HRS only	17.315	6.801
<i>C. Having housing loan > half of primary residence value (marginal effects from probit models)</i>		
WB	0.022*** (0.008)	0.019*** (0.005)
EBB	0.030*** (0.008)	0.034*** (0.007)
MBB	0.069*** (0.010)	
Age	-0.004** (0.002)	-0.003*** (0.001)
White	-0.023*** (0.007)	-0.003 (0.003)
Hispanic	0.006 (0.010)	-0.008*** (0.003)
Education, HS	0.024** (0.010)	0.006* (0.004)
Education, some college	0.049*** (0.012)	0.003 (0.004)
Education, college +	0.044*** (0.012)	0.006 (0.004)

(continued)

Table 6.4 (continued)

	A. Women ages 51–56	B. Women ages 57–61
Marital disruption	0.003 (0.006)	0.004 (0.003)
Fair/poor health self-reported	0.002 (0.007)	0.002 (0.003)
Number of children	0.003* (0.001)	0.002*** (0.001)
Own home	0.321*** (0.008)	0.245*** (0.010)
<i>N</i>	6,682	4,156
<i>R</i> -squared	0.159	0.158
Mean of dep. var.	0.257	0.209
St. dev. of dep. var.	0.437	0.406
Mean of dep. var., HRS only	0.178	0.106
St. dev. of dep. var., HRS only	0.383	0.308
	<i>D. Having < \$25,000 in savings (OLS)</i>	
WB	0.051** (0.022)	0.043** (0.021)
EBB	0.078*** (0.021)	0.135*** (0.021)
MBB	0.183*** (0.023)	
Age	-0.007 (0.004)	-0.012** (0.005)
White	-0.105*** (0.017)	-0.087*** (0.019)
Hispanic	-0.015 (0.020)	0.027 (0.024)
Education, HS	-0.074*** (0.018)	-0.029 (0.019)
Education, some college	-0.112*** (0.017)	-0.069*** (0.018)
Education, college +	-0.155*** (0.017)	-0.123*** (0.017)
Marital disruption	0.126*** (0.018)	0.086*** (0.018)
Fair/poor health self-reported	0.161*** (0.021)	0.120*** (0.020)
Number of children	0.005 (0.004)	0.011*** (0.004)
Own home	-0.592*** (0.020)	-0.602*** (0.025)
<i>N</i>	6,732	4,179
<i>R</i> -squared	0.412	0.483

Table 6.4 (continued)

	A. Women ages 51–56	B. Women ages 57–61
Mean of dep. var.	0.244	0.202
St. dev. of dep. var.	0.430	0.402
Mean of dep. var., HRS only	0.184	0.161
St. dev. of dep. var., HRS only	0.388	0.367

Note: See also notes to tables 6.1–6.3.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

6.3 Financial Frailty at Older Ages: Findings from the NFCS

To further explore how older women are managing their debt and retirement planning, we draw on the 2012 wave of the National Financial Capability Study (NFCS).¹⁵ The overarching research objectives of the NFCS are to benchmark key indicators of financial capability and evaluate how these indicators vary with underlying demographic, behavioral, attitudinal, and financial literacy characteristics.¹⁶ The 2012 NFCS is a state-by-state online survey of approximately 25,000 American adults (roughly 500 per state, plus the District of Columbia) that is representative of the US population.¹⁷ In order to thoroughly explore the financial capability of Americans, the NFCS covers several aspects of behavior including how people manage their resources, how they make financial decisions, what skill sets they use in making these decisions, and how they search for information when making these decisions (Lusardi 2011).

Consistent with the HRS analysis above, we again focus on two separate age groups of women in the NFCS: those ages fifty-one to fifty-six, and fifty-seven to sixty-one. There are over 1,800 observations for the first age group, and around 1,300 women for the second. The empirical analysis evaluates whether older women tried to figure out how much they need to

15. The data are publicly available at <http://www.usfinancialcapability.org/>. The first survey was fielded in 2009, and it is slated to be repeated triennially.

16. FINRA Investor Education Foundation commissioned the NFCS in 2009 in consultation with the US Department of the Treasury and the President's Advisory Council on Financial Literacy. The 2012 study—similarly developed in consultation with the US Department of the Treasury, other federal agencies, and President Obama's Advisory Council on Financial Capability—updated key measures from the 2009 study and deepened the exploration of topics that are highly relevant for research and policy. Lusardi serves as academic advisor to the study.

17. In our analysis, data are weighted to be representative of the national population in terms of age, gender, ethnicity, and education based on the Census Bureau's American Community Survey. However, breakdowns of subpopulations may not necessarily be representative.

save for retirement, their perceived level of indebtedness, and their financial fragility, which relies on respondent answers to whether they could come up with \$2,000 in thirty days if an unexpected need arose.¹⁸

Descriptive statistics for older women in the NFCS data set appear in appendix table 6A.2. The sample is mostly married, white, working, and has at least some college education. Women of ages fifty-seven to sixty-one indicated they were more likely to plan for retirement (or to have planned, if they had retired), but fewer than half (45 percent) had tried to figure out how much they needed to put aside for retirement. Moreover, many of them (39–43 percent) indicate they are carrying too much debt, and that they are financially fragile (39–43 percent). This is consistent with the HRS evidence showing high levels of debt on the verge of retirement.

Other indicators of financial distress are reported in table 6.5. Results show that about a third of women (ages fifty-one to fifty-six) are able to cover easily their expenses in a typical month, or have set aside emergency or rainy day funds that would cover expenses for three months. The NFCS data confirm that mortgage debt and other debts turn out to be problematic for a relatively large subset of women. Twenty percent of the female homeowners in the younger age group, and 15 percent in the older age group, report being underwater, owing more on their homes than they thought they could sell them for. As far as nonmortgage debt is concerned, many women said they did not pay off credit card balances in full (if they had them), and they engaged in many costly credit card behaviors such as paying only the minimum due, using the card for cash advances, being charged fees for late payment or exceeding the limits. These findings underscore the point that many older women are exposed to illiquidity and/or problems in debt management. Turning to other indicators, many older women reported having unpaid medical bills, and having engaged in high-cost borrowing using alternative financial services, such as rent-to-own stores, pawn shops, payday loans, auto title loans, and tax refund loans.

The NFCS also included a set of questions to assess respondents' levels of financial literacy. Five questions were asked to test fundamental concepts regarding numeracy and the capacity to do calculations related to interest rates, knowledge of inflation, risk diversification, understanding of interest

18. The precise wordings of the questions are (1) retirement planning: "Have you ever tried to figure out how much you need to save for retirement?" Or, if already retired: "Before you retired, did you try to figure out how much you needed to save for retirement?" Possible answers: yes, no, don't know, prefer not to say; (2) debt: "How strongly do you agree or disagree with the following statement: I have too much debt right now. Please give your answer from a scale from 1 to 7, where 1 = strongly disagree, 7 = strongly agree and 4 = neither agree nor disagree." Possible answers: 1–7; don't know, prefer not to say; (3) financial fragility: "How confident are you that you could come up with \$2,000 if an unexpected need arose within the next month?" Possible answers: I am certain I could come up with the full \$2,000, I could probably come up with \$2,000, I could probably not come up with \$2,000, I am certain I could not come up with \$2,000, don't know, prefer not to say.

Table 6.5 Indicators of financial distress in the NFCS

Variables	<i>N</i>	Mean	Median	Min.	Max.	SD
<i>A. Women ages 51–56</i>						
Making ends meet	1,844	.34	0	0	1	.47
Rainy day savings	1,844	.34	0	0	1	.47
Underwater with home value	886	.20	0	0	1	.40
Credit card fees	1,303	.41	0	0	1	.49
Loan on retirement accounts	908	.08	0	0	1	.27
Withdrawal from retirement accounts	908	.05	0	0	1	.22
Unpaid medical bills	1,844	.28	0	0	1	.45
High-cost borrowing	1,800	.25	0	0	1	.43
<i>B. Women ages 57–61</i>						
Making ends meet	1,332	.38	0	0	1	.49
Rainy day savings	1,332	.41	0	0	1	.49
Underwater with home value	606	.15	0	0	1	.35
Credit card fees	1,004	.38	0	0	1	.48
Loan on retirement accounts	713	.07	0	0	1	.26
Withdrawal from retirement accounts	713	.05	0	0	1	.23
Unpaid medical bills	1,332	.25	0	0	1	.43
High-cost borrowing	1,309	.22	0	0	1	.41

Note: The sample includes all age-eligible women ages fifty-one to fifty-six and fifty-seven to sixty-one in the 2012 NFCS. Making ends meet refers to the ability to balance monthly income and expenses. Statistics related to underwater with home value and credit card fees are conditional on holding the asset or debt. Statistics related to loan on retirement accounts and hardship withdrawal from retirement accounts are conditional to having a retirement account. High-cost methods of borrowing refer to auto title loans, payday loans, pawn shops, rent-to-own stores, and tax refund loans. All statistics are weighted using survey weights. (See also appendix table 6A.2.)

payments on a mortgage, and understanding of basic asset pricing (Lusardi 2011). Table 6.6 reports the proportion of correct and incorrect answers and the “do not know” responses to each of these questions. Overall, we find that financial literacy is rather low. A large fraction of women does not know simple financial concepts, and many indicate that they do not know the answer to the questions. The proportion of “do not know” responses was particularly high on the risk diversification question; as many as 52 percent of women ages fifty-one to fifty-six and 51 percent of women ages fifty-seven to sixty-one indicated that they did not know whether a single company stock is riskier than a stock mutual fund. There is also a high proportion of “do not know” responses for the question on asset pricing. These two questions will help us differentiate among different degrees of financial literacy among older women.

Next we present multivariate linear probability analyses of indicators of financial planning, debt, and financial fragility. For the first dependent

Table 6.6 Financial literacy in the NFCS

Questions	Correct (%)	Incorrect (%)	Don't know (%)	<i>N</i>
<i>A. Women ages 51–56</i>				
Interest rate question	72	15	12	1,844
Inflation question	63	13	22	1,844
Risk diversification question	42	5	52	1,844
Mortgage question	74	10	16	1,844
Basic asset pricing question	24	29	46	1,844
<i>B. Women ages 57–61</i>				
Interest rate question	71	17	11	1,332
Inflation question	66	14	18	1,332
Risk diversification question	41	6	51	1,332
Mortgage question	76	7	15	1,332
Basic asset pricing question	24	29	45	1,332

Note: The sample includes all age-eligible women ages fifty-one to fifty-six and fifty-seven to sixty-one in the 2012 NFCS. All statistics are weighted using survey weights.

variable, we use the NFCS question about whether respondents ever tried to figure out how much they need to save for retirement. The question is important in light of prior research showing that planners accumulate far more retirement wealth than nonplanners (Lusardi 1999; Lusardi and Beeler 2007; Lusardi and Mitchell 2007a, 2007b; Lusardi and Mitchell 2011a, 2011b). In the regressions, we control for the same factors as in the HRS analysis, namely age and ethnicity, marital status, education, and number of children. In addition, the richness of the NFCS allows us to control for whether respondents experienced a large and unexpected drop in income the previous year, and also the respondent's level of financial literacy (defined as the number of correct answers to the five financial literacy questions). Results are reported in the first column of table 6.7.

Both panels A and B in table 6.7 confirm that higher education and income are strongly positively correlated with women having tried to figure out how much to save for retirement. The number of dependent children is negatively associated with the probability of having tried to plan for women ages fifty-one to fifty-six but not the older group, suggesting some potential for a “catch-up” after children leave home. Interestingly, financial literacy is also an important determinant of financial planning: being able to answer one additional financial literacy question correctly is associated with a 4 to 6 percentage point higher probability of figuring out how much to put aside for retirement. Because only 39 to 45 percent of the respondents indicated

Table 6.7 **Determinants of having tried to figure out how much to save for retirement, having too much debt, and not being able to come up with \$2,000 (NFCS)**

Variables	Retirement planning (1)	Having too much debt (2)	Financial fragility (3)
<i>A. Women ages 51–56</i>			
Age	0.004 (0.006)	–0.008 (0.030)	–0.006 (0.006)
Black	–0.021 (0.033)	0.453*** (0.159)	0.099*** (0.030)
Hispanic	–0.068** (0.034)	–0.456*** (0.164)	–0.010 (0.032)
Asian	–0.050 (0.058)	–0.397 (0.284)	–0.070 (0.054)
Others	–0.063 (0.068)	–0.193 (0.328)	–0.039 (0.063)
Single	0.079** (0.035)	–0.197 (0.174)	–0.063* (0.033)
Separated or divorced	0.011 (0.029)	–0.237* (0.140)	0.005 (0.027)
Widow	0.029 (0.050)	0.022 (0.239)	–0.126*** (0.046)
Number of dependent children	–0.027** (0.012)	0.121** (0.056)	0.023** (0.011)
High school	0.046 (0.042)	–0.042 (0.212)	0.107*** (0.039)
Some college	0.148*** (0.044)	0.169 (0.221)	0.034 (0.041)
College +	0.191*** (0.048)	0.152 (0.238)	0.058 (0.045)
\$15–25K	0.098** (0.040)	–0.038 (0.197)	–0.155*** (0.037)
\$25–35K	0.097** (0.044)	–0.161 (0.213)	–0.195*** (0.040)
\$35–50K	0.130*** (0.041)	–0.179 (0.200)	–0.364*** (0.038)
\$50–75K	0.227*** (0.042)	–0.072 (0.206)	–0.485*** (0.039)
\$75–100K	0.264*** (0.046)	–0.319 (0.226)	–0.535*** (0.043)
\$100–150K	0.365*** (0.048)	–0.693*** (0.236)	–0.677*** (0.044)
\$150K +	0.440*** (0.056)	–1.293*** (0.275)	–0.724*** (0.052)
Income shock	–0.025 (0.022)	0.779*** (0.109)	0.205*** (0.021)
<i>N</i> correct answers fin. lit. questions	0.061*** (0.008)	–0.105** (0.042)	–0.021*** (0.008)

(continued)

Table 6.7 (continued)

Variables	Retirement planning (1)	Having too much debt (2)	Financial fragility (3)
Constant	-0.253 (0.330)	4.834*** (1.601)	1.041*** (0.306)
Observations	1,844	1,813	1,844
R-squared	0.194	0.082	0.326
<i>B. Women ages 57–61</i>			
Age	0.023** (0.009)	-0.075* (0.042)	0.002 (0.008)
Black	0.001 (0.036)	0.080 (0.167)	0.116*** (0.032)
Hispanic	0.009 (0.049)	0.086 (0.228)	0.160*** (0.043)
Asian	-0.064 (0.070)	0.187 (0.332)	0.122** (0.062)
Others	-0.025 (0.091)	0.018 (0.426)	0.101 (0.081)
Single	-0.052 (0.043)	0.513*** (0.198)	-0.013 (0.038)
Separated or divorced	-0.032 (0.036)	0.304* (0.165)	0.040 (0.032)
Widow	0.049 (0.050)	0.675*** (0.231)	0.065 (0.044)
Number of dependent children	-0.024 (0.017)	0.330*** (0.079)	0.034** (0.015)
High school	0.098* (0.057)	-0.182 (0.262)	-0.159*** (0.050)
Some college	0.151** (0.059)	-0.269 (0.274)	-0.202*** (0.053)
College +	0.225*** (0.064)	-0.370 (0.295)	-0.201*** (0.057)
\$15–25K	0.087* (0.053)	0.250 (0.242)	-0.092** (0.047)
\$25–35K	0.212*** (0.051)	-0.078 (0.238)	-0.224*** (0.045)
\$35–50K	0.204*** (0.052)	-0.116 (0.242)	-0.360*** (0.047)
\$50–75K	0.251*** (0.053)	-0.173 (0.244)	-0.443*** (0.047)
\$75–100K	0.259*** (0.062)	-0.356 (0.290)	-0.504*** (0.055)
\$100–150K	0.373*** (0.064)	0.017 (0.299)	-0.607*** (0.057)

Table 6.7 (continued)

Variables	Retirement planning (1)	Having too much debt (2)	Financial fragility (3)
\$150K+	0.469*** (0.066)	-0.845*** (0.306)	-0.590*** (0.059)
Income shock	0.050* (0.028)	0.685*** (0.131)	0.153*** (0.025)
<i>N</i> correct answers fin. lit. questions	0.044*** (0.010)	-0.083* (0.049)	-0.029*** (0.009)
Constant	-1.398*** (0.541)	8.394*** (2.494)	0.760 (0.480)
Observations	1,332	1,312	1,332
<i>R</i> -squared	0.153	0.087	0.307

Note: "Retirement planning" coded as 1 for those who tried to figure out how much they need to save for retirement. "Having too much debt" ranges from 1 to 7, where 1 means I strongly disagree and 7 means I strongly agree with the statement "I have too much debt right now." "Financial fragility" coded as 1 for those certain or probably could not come up with \$2,000. Explanatory variables include age, race/ethnicity, marital status, number of financially dependent children, education, income, having experienced an income shock, and an indicator of financial literacy. Baseline categories: white, married, less than high school education, and income lower than \$15,000. Standard errors in parentheses; weighted data.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

they had tried to plan for retirement (table 6.4), the impact of the literacy question is large. The finding is consistent with data from the 2009 wave of the NFCS (Lusardi and Mitchell 2011b), where we use a similar empirical specification but all respondents and all age groups (Lusardi and Mitchell 2014).¹⁹

Next we turn to respondents' answers to the NFCS question about their degree of agreement with the statement: "I have too much debt right now." We use this variable to proxy for peoples' concerns about their debt, since debt levels (as reported in the HRS) are not available in the NFCS. Results are reported in column (2) of table 6.7 for both age groups (panels A and B).

Once again, we find that women reporting having too much debt are also those with more dependent children, with the effect among the older age group almost three times as large as for those ages fifty-one to fifty-six. Shocks also matter: those having had a large unexpected income drop in the prior year were 68 to 78 percentage points more likely to state that they

19. It is also consistent with data from a special module we designed for the HRS on retirement planning and financial literacy. In that work we showed that financial literacy is an important predictor of retirement planning for older women as well (Lusardi and Mitchell 2008).

were overindebted. Those with higher income (income greater than \$100,000 for women ages fifty-one to fifty-six and income greater than \$150,000 for women ages fifty-seven to sixty-one) are less likely to have too much debt. Once again, the more financially literate were less likely to report they had excessive debt (answering one more financial literacy question decreases the probability of “too much debt” by 8–10 percentage points), confirming findings in other surveys (Lusardi and Tufano 2015). In other words, shocks do contribute to debt concerns for women on the verge of retirement, but people who have the capacity to manage their resources are more likely to stay out of debt as they head into retirement.

The financial fragility measure available in the NFCS is a proxy for low savings. The HRS reports whether women have less than \$25,000 in savings. The NFCS, however, asks if they could come up with \$2,000 within a month (multiplying that figure by 12 would bring \$24,000). Findings in column (3) of table 6.7 show that, for both age groups, having more dependent children and having experienced an income shock are positively and significantly associated with the probability of being financially fragile. Those with higher income are less likely to be financially fragile. Moreover, those who are more financially literate are associated with a lower probability of being financially fragile.

6.4 Conclusions

Our goal has been to ascertain whether older women’s current and anticipated future labor force patterns have changed over time, and if so, to evaluate the factors associated with longer work lives and plans to continue work at older ages. We have also sought to evaluate debt and debt management as a factor spurring older women’s continued work.

The analysis has yielded several findings. First, we show that each cohort of older women worked more currently, and intended to work more in the future, than our HRS baseline surveyed in 1992. The mean probability of being at work for the baseline HRS sample ages fifty-one to fifty-six when surveyed was 64.9 percent, and 54.8 percent for those ages fifty-seven to sixty-one. All subsequent cohorts displayed higher rates of work, particularly for the fifty-one- to fifty-six-year-old group. For instance, younger War Babies women ages fifty-one to fifty-six had about a 7 percentage point greater labor force attachment, or around 11 percent higher, than the HRS reference cohort. Early Boomer women ages fifty-one to fifty-six were 5.3 to 5.7 percentage points more attached to the labor force, or 8 percent more than the HRS, while the older Early Boomers had participation rates of 4.7 to 6.2 percentage points higher, or 8 to 11 percent greater than the HRS reference group. Older Early Boomers had participation rates of 4.7 to 6.2 percentage points higher, or 8 to 11 percent greater than the HRS reference group. The younger Mid-Boomers also were working more than the refer-

ence group, with 3.8 to 4.5 percentage point greater employment rates, or 6 to 7 percent versus the HRS reference cohort.

Second, when we compare differences in older women's self-reported expected chances of working at older ages, again we find evidence that more recent cohorts of older women anticipate working longer. For the baseline HRS cohort, 22.5 percent of the younger age group and 23.4 of the older age group intended to still work at age sixty-five. By contrast, both the Early and Middle Baby Boomer cohorts were significantly more likely to say they intended to work at age sixty-five. Early Boomers believed they had a 4 to 5 percentage points higher chance of working than the HRS cohort (on a base of about 26 percent), and the Middle Boomers were even more likely to be working for pay at age sixty-five compared with the HRS reference group. These patterns confirm that continued work and delayed retirement are becoming more prevalent for older women.

Third, when we explored the explanations for delayed retirement among older women, significant factors included education, marital disruption, health, and fewer children than prior cohorts. Yet household finances also appeared to be playing a key role, in that older women today have more debt than previously and they are more financially fragile than in the past. As an example, we showed that a standard deviation increase in the ratio of mortgage debt to home value was associated with a 3.4 to 5.5 percent rise in women's anticipated probability of working at age sixty-five. In large part, the impact can be attributed to having taken on larger residential mortgages due to the run-up in housing prices over time and lower down payments as well.

Our results using the NFCS are compatible with the HRS results, but the richer set of questions asked in this survey adds additional dimensions to the results. For instance, we found that women who were more financially literate were more likely to plan for retirement and less likely to have excessive debt or be more financially fragile. Having more children and unexpected large income shocks also played an important role. Overall, these findings speak to the important role of managing finances later in life, including debt.

Our work to date has been mainly descriptive rather than causal, but we are well aware that planning, saving, and retirement decisions are all made in a life cycle context. Accordingly, our future research will explore ways to identify how financial literacy, planning, and debt management can help drive decision making at older ages, which can be conducive to retirement security.

Appendix

Table 6A.1 Descriptive statistics for HRS women

Variables	Women ages 51–56		Women ages 57–61	
	Mean	SD	Mean	SD
Working for pay	0.71	0.45	0.61	0.49
Prob. working at 65 (%)	26.29	32.48	25.74	33.34
Have any debt (0/1)	0.45	0.50	0.40	0.49
Total debt (10k, \$2015)	8.01	14.18	6.90	12.37
All primary res. loans/primary res. value > 0.5 (0/1)	0.26	0.44	0.21	0.41
Have less than \$25,000 in savings (0/1)	0.24	0.43	0.20	0.40
Age	53.16	1.61	58.82	1.41
White	0.80	0.40	0.82	0.39
Hispanic	0.09	0.29	0.08	0.28
Education, < HS	0.15	0.36	0.18	0.38
Education, HS	0.32	0.47	0.32	0.47
Education, some college	0.26	0.44	0.25	0.43
Education, college +	0.27	0.44	0.25	0.43
Fair/poor health self-reported	0.23	0.42	0.25	0.43
Marital disruption	0.28	0.45	0.31	0.46
Number of children	2.65	1.77	2.82	1.92
Own home	0.79	0.41	0.81	0.40
All primary res. loans/primary res. value	0.30	0.54	0.25	0.62
Other debt/liquid assets	2.12	41.57	0.77	8.12
HRS	0.23	0.42	0.29	0.46
WB	0.21	0.41	0.32	0.47
EBB	0.25	0.43	0.39	0.49
MBB	0.31	0.46	0.00	0.00

Note: Question about the probability of working at age sixty-five asked only of those working at survey date. Total debt includes the value of mortgages and other loans on the household's primary residence, other mortgages, and other debt (including credit card debt, medical debt, etc.). All dollar values in \$2015. Savings is defined as total net worth or total assets minus total debt. Marital disruption is defined as divorced/separated or widowed, all primary res. loans/primary res. value is defined as the value of all primary residence loans divided by the value of the primary residence, and other debt/liquid assets is defined as the ratio of other debt to liquid assets (excluding the home). The fifty-one to fifty-six age cohorts of women were surveyed in 1992 (the HRS baseline group, born 1936–1941), the 1998 War Babies (WB) group (born 1942–1947), the 2004 Early Baby Boomers (EBB) cohort (born 1948–1953), and the 2010 Middle Baby Boomer (MBB) group (born 1954–1959). The three fifty-seven to sixty-one age cohorts of women were surveyed in 1992 for the baseline HRS cohort, in 2004 for the WB, and in 2010 for the EBB.

Table 6A.2 Descriptive statistics for variables from the National Financial Capability Study (NFCS)

Variables	Mean	Median	Min.	Max.	SD
<i>A. Women ages 51–56 (N = 1,844)</i>					
Age	53.54	54	51	56	1.72
Married	.61	1	0	1	.49
Single	.12	0	0	1	.32
Separated or divorced	.22	0	0	1	.41
Widow	.05	0	0	1	.22
White	.70	1	0	1	.46
Black	.13	0	0	1	.34
Hispanic	.11	0	0	1	.31
Asian	.03	0	0	1	.18
Other	.02	0	0	1	.15
Education < high school	.07	0	0	1	.26
High school	.38	0	0	1	.48
Some college	.32	0	0	1	.46
College +	.23	0	0	1	.42
N dependent children	.58	0	0	4	.92
Income < \$15K	.13	0	0	1	.34
Income \$15–25K	.14	0	0	1	.34
Income \$25–35K	.10	0	0	1	.30
Income \$35–50K	.15	0	0	1	.36
Income \$50–75K	.17	0	0	1	.37
Income \$75–100K	.12	0	0	1	.32
Income \$100–150K	.12	0	0	1	.32
Income > \$150K	.07	0	0	1	.25
Working	.51	1	0	1	.50
Financial literacy (N correct answers)	2.74	3	0	5	1.41
Income shock	.33	0	0	1	.47
Retirement planning	.39	0	0	1	.49
Having too much debt	.43	0	0	1	.49
Financial fragility	.43	0	0	1	.49
<i>B. Women ages 57–61 (N = 1,332)</i>					
Age	58.99	59	57	61	1.42
Married	.57	1	0	1	.49
Single	.13	0	0	1	.34
Separated or divorced	.22	0	0	1	.41
Widow	.08	0	0	1	.27
White	.69	1	0	1	.46
Black	.18	0	0	1	.38
Hispanic	.08	0	0	1	.27
Asian	.03	0	0	1	.19
Other	.02	0	0	1	.14
Education < high school	.06	0	0	1	.24
High school	.37	0	0	1	.48

(continued)

Table 6A.2 (continued)

Variables	Mean	Median	Min.	Max.	SD
Some college	.31	0	0	1	.46
College or more	.25	0	0	1	.43
<i>N</i> dependent children	.34	0	0	4	.75
Income < \$15K	.11	0	0	1	.31
Income \$15–25K	.13	0	0	1	.33
Income \$25–35K	.16	0	0	1	.36
Income \$35–50K	.15	0	0	1	.36
Income \$50–75K	.18	0	0	1	.38
Income \$75–100K	.09	0	0	1	.29
Income \$100–150K	.10	0	0	1	.30
Income > \$150K	.09	0	0	1	.28
Working	.44	0	0	1	.50
Financial literacy (<i>N</i> correct answers)	2.79	3	0	5	1.40
Income shock	.30	0	0	1	.46
Retirement planning	.45	0	0	1	.50
Having too much debt	.39	0	0	1	.49
Financial fragility	.39	0	0	1	.49

Note: The sample includes all age-eligible women ages fifty-one to fifty-six and fifty-seven to sixty-one in the 2012 NFCS. Financial literacy refers to the number of correct answers to five financial literacy questions. Income shock refers to a dummy variable for those who experience a large drop in income in the previous twelve months that they did not expect. Financial planning is coded as 1 for those who tried to figure out how much they need to save for retirement. Having too much debt refers to respondents who chose values 5, 6, or 7 (on a scale from 1 to 7) when asked to evaluate if they have too much debt. Financial fragility is coded as 1 for those who probably or certainly could not come up with \$2,000 within the next month. All statistics are weighted using survey weights.

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