GENDER DISPARITIES IN FINANCIAL WELL-BEING

from the Survey of Household Economics and Decisionmaking

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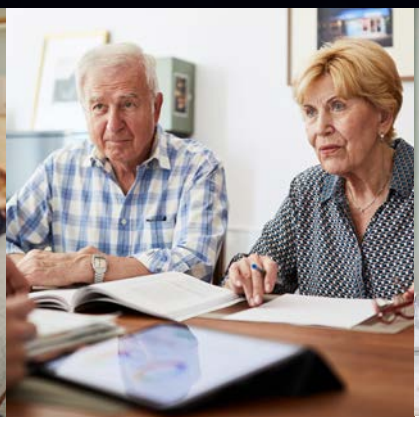


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Executive Summary

This report analyzes gender differences with respect to individuals' banking habits, credit access, and retirement planning from the Federal Reserve Board's 2018 Survey of Household Economics and Decisionmaking (SHED).

We focus on these outcomes because differences in retirement preparedness, access to credit, and banking practices all affect the economic resources individuals have at their disposal and their financial security. Learning more about systematic gender differences in these three facets of individuals' financial lives allows us to better understand the potential causes, consequences, and solutions to the gender inequities in wealth accumulation and economic security.

Beyond simply uncovering the disparities, this analysis provides information on the role that financial literacy, race and ethnicity, household composition, household income, and educational attainment play in these outcomes. Multiple regression models are included to analyze the persistence of the gender differences after accounting for socioeconomic characteristics and financial literacy level. The descriptive analysis suggests that men's and women's financial lives are different across a number of dimensions:

Banking

Men are more likely than women to be fully banked, meaning they have a bank or credit union account and have not used alternative financial services within the past year. While the largest disparities in banking status occur between race and ethnicity cohorts, both nonwhite men and white, non-Hispanic men are more likely than women to be fully banked. Controlling for financial literacy removes the significant gender difference.

Women are more likely to have used alternative financial services in the past 12 months than men. Seventeen percent of women used alternative financial services such as a payday loan or advance in the past year, compared with 15 percent of men. However, this difference also disappears after controlling for financial literacy level.

Credit

Men report being denied credit less often than women. While the vast majority of individuals were able to secure additional credit when they applied for it, roughly 25 percent of women report being denied credit, compared with 21 percent of men. Regression results illustrate that this underlying gender difference disappears after controlling for financial literacy level.

Women are less confident about applying for an additional credit card than men. Women are 3 percentage points more likely to report being "not confident" about their credit prospects, should they apply for an additional card. We find, however, that controlling for financial literacy level causes this gap to narrow and become statistically insignificant.

Retirement Planning

Men are more likely than women to be comfortable making retirement account investment decisions. Compared with only 31 percent of women, 49 percent of men are comfortable making retirement account decisions. This gender difference in comfort level remains even after controlling for financial literacy and observed socioeconomic characteristics.

Men are more likely than women to report that their retirement savings plan is on track. The majority of nonretired respondents are not confident their plan was adequate: Just 34 percent of women and 38 percent of men believe their retirement savings are on track. The significant gender difference remains when controlling for observed socioeconomic and demographic characteristics but dissipates after controlling for financial literacy level.

Introduction

Despite a long economic expansion before the COVID-19 pandemic and numerous policy attempts to promote gender equity, gender differences in income and wealth continue to be sustained in the United States (Graf, Brown, and Patten, 2019). Further, there is evidence that women are more averse to financial risk than men, which contributes

to a gendered investment gap (Jacobson et al., 2014). The reality of lower lifetime earnings relative to men, on average, along with greater financial risk aversion and discomfort making investment decisions can threaten women's long-term financial security.

An individual's experience with formal financial channels, credit cards, and managing retirement plans can also affect financial health. It is important to study gender differences — even modest ones — in these financial outcomes because those who struggle to access affordable, safe credit products and have less familiarity with simple financial instruments may have difficulty using more complex financial products and accumulating wealth in the future. This can leave women, who tend to have longer life expectancies than men, in particularly vulnerable financial positions (Lusardi and Mitchell, 2008).

This analysis seeks to explore whether banking, credit, and retirement outcomes vary by gender and if financial literacy helps explain the differences. We use data from the 2018 Survey of Household Economic Decisionmaking (SHED)[1] to understand how much self-assessed financial outcomes differ for men and women.[2] We further explore the persistence of each gender gap by using a series of regressions to control for the observed socioeconomic and demographic factors. The regression analysis allows us to determine if the gender variation in financial outcomes can be attributed to other observed socioeconomic and demographic characteristics.

We are also interested in exploring the impact of financial literacy on the observed gender differences in the financial outcomes studied. Consistent with previous research, the women responding to the survey appear to be less financially literate than the men in the sample. Therefore, we analyze financial outcomes while accounting for systemic gender differences in financial literacy to understand more about the gender differences that emerge in the descriptive analysis in the first half of the report.

Previous research indicates that women have less financial knowledge than men, on average, despite higher labor force participation and educational attainment (Hogarth and Hilgert, 2002; Hsu, 2011; Mottola, 2013; Bucher-Koenen et al., 2017). This gender difference in financial literacy matters because there is also evidence that financial literacy is correlated with specific financial behaviors, such as an increased likelihood to hold stocks and mutual funds (Van Rooij, Lusardi and Alessi, 2011). There is also a clear relationship between retirement preparedness and financial literacy: Individuals with higher levels of financial literacy are more likely to plan for retirement (Lusardi and Mitchell, 2011).

Overall, we find significant gender differences in the majority of financial outcomes analyzed from the descriptive analysis. After accounting for financial literacy, however, we find only two meaningful gender differences: Women are significantly more likely than men to own at least one credit card and remain significantly less likely than men to report being comfortable managing their self-directed retirement plans. Gender differences in the likelihood of being fully banked, using alternative financial services, reporting a credit denial, confidence in being approved for an additional credit card, and belief that one's retirement plan is "on track" become insignificant after accounting for financial literacy.

Readers should interpret the results with appropriate caution, as we are limited in our ability to determine if individuals' financial knowledge determines their financial outcomes using SHED data alone. For example, some individuals have higher financial literacy because of experience with using individual financial products, whereas other individuals use specific financial instruments because they are more financially literate. Previous research has also found that income, educational attainment, and financial literacy are strongly correlated (Monticone, 2010). For these reasons and others, we can only ascertain if there is an association between financial literacy and financial outcomes within this report. This is primarily a descriptive analysis, and we do not intend to determine causality between financial literacy and financial outcomes.

The report is structured as follows: First, gender differences in banking, credit, and retirement are

[1] For more information about the survey, see Appendices C and D.

[2] Data from the 2019 survey were released in May 2020, after this analysis was completed.

summarized. We then test whether any gender differences remain with the addition of regression models controlling for observed socioeconomic and demographic traits. Next, we focus on how outcomes change when accounting for financial literacy level. Finally, we study the persistence of the gender gap after controlling for observed socioeconomic and demographic variables and financial literacy level before summarizing all results. All numbers within this report are weighted to reflect estimates of the U.S. population age 18 years or older. The subset of the SHED questionnaire utilized in this report, as well as additional information about the weighting methodology, can be found in Appendices C and D.

Section 1: Differences by Gender

In this first section, we find markedly different outcomes in banking habits, credit access, and retirement planning by gender. We further explore each outcome while accounting for race, household composition, household income, and individual educational attainment. The regression results allow us to explore whether significant gender differences remain after controlling for observed socioeconomic and demographic variables.

Banking

The majority of adults in the United States own a checking account and are able to access formal banking products. However, the Federal Deposit Insurance Corporation (FDIC) (2018) estimates that 25 percent of households are either unbanked, meaning they do not have a checking, savings, or money market account, or underbanked, meaning they have a bank account but nevertheless use alternative financial services (AFS) — such as a money order or check cashing service from somewhere other than a bank, a pawn shop loan, an auto title loan, a payday loan, a paycheck advance, or a tax refund advance.[3] There is growing evidence that consumers have a greater propensity to use these services when there are more alternative financial service providers nearby and relatively few bank branches (Friedline, Despard, and West, 2017). Regardless of the reason, short term, high-interest products can put consumers' financial wellness in jeopardy owing to the high rate of loan rollovers or renewals (Bennett, 2019).

Respondents who have an account at a bank or credit union and do not use alternative financial services are fully banked. We find that women have a lower likelihood of being fully banked than men. This difference is at least partly explained by a disproportionately larger share of women utilizing alternative financial services. We find that 17 percent of women report using alternative finance services in the past year, compared with 15 percent of men. Setting gender aside, we also find substantial variation in the overall likelihood of being fully banked by race and ethnicity.

Banking Status

TABLE 1
Share of Adults (18+) Who Are Fully Banked

	Men	Women	Difference
Overall	79.1	76.6	-2.4*
White, non-Hispanic	85.5	85.0	-0.5
Nonwhite	66.7	62.3	-4.4*
Single	71.2	70.5	-0.7
Living with Partner	83.4	80.6	-2.9*
<$40K	60.4	60.2	-0.2
$40K–$100K	79.7	76.5	-3.2
>$100K	89.8	90.8	1.0
High School or Less	69.3	65.4	-3.9
Some College	79.4	77.0	-2.4
Bachelor's Degree or Higher	90.5	88.8	-1.7

Source: Authors' calculations using Federal Reserve Board's 2018 Survey of Household Economics and Decisionmaking data

Notes: All numbers represent percentages (%). Differences are defined as women less men. Income categories reflect household income.
* = p<0.05; ** = p<0.01

Overall and as indicated in **Table 1**, men are significantly more likely than women to be fully

[3] The FDIC's definition of underbanked includes international remittances and rent-to-own services, but in this analysis, we use the narrower definition of alternative financial services used in the report summarizing the SHED (Board of Governors of the Federal Reserve System, 2019).

TABLE 2
Share of Adults (18+) Who Have Used Alternative Financial Services in the Previous 12 Months

	Men	Women	Difference
Overall	15.0	17.1	2.1*
White, non-Hispanic	11.3	11.0	-0.3
Nonwhite	22.1	27.5	5.4 **
Single	17.7	19.7	1.9
Living with Partner	13.5	15.4	1.9
<$40K	24.8	24.8	0.0
$40K–$100K	15.6	19.1	3.5*
>$100K	8.4	8.2	-0.2
High School or Less	19.1	21.3	2.2
Some College	17.2	19.7	2.5
Bachelor's Degree or Higher	8.2	10.0	1.8

Source: Authors' calculations using Federal Reserve Board's 2018 Survey of Household Economics and Decisionmaking data

Notes: All numbers represent percentages (%). Differences are defined as women less men. Income categories reflect household income.
* = p<0.05; ** = p<0.01

TABLE 3
Share of Adults (18+) Who Own at Least One Credit Card

	Men	Women	Difference
Overall	80.7	82.2	1.5
White, non-Hispanic	85.2	86.3	1.0
Nonwhite	71.9	75.2	3.3
Single	66.3	73.8	7.5*
Living with Partner	88.7	87.6	-1.1
<$40K	62.0	63.5	1.5
$40K–$100K	81.2	85.4	4.1*
>$100K	91.5	94.7	3.2*
High School or Less	68.8	69.2	0.4
Some College	81.4	83.6	2.2
Bachelor's Degree or Higher	94.5	95.5	1.0

Source: Authors' calculations using Federal Reserve Board's 2018 Survey of Household Economics and Decisionmaking data

Notes: All numbers represent percentages (%). Differences are defined as women less men. Income categories reflect household income.
* = p<0.05; ** = p<0.01

banked. There is no significant gender difference in banking status among white, non-Hispanic adults, but nonwhite males are significantly more likely than nonwhite females to be fully banked.[4]

Household composition is also strongly correlated with the likelihood of being fully banked: Adults who live with their partners have a greater likelihood of being fully banked, but women in this cohort are significantly less likely to be fully banked than men. We also find that additional education is associated with being fully banked. Men and women with education beyond a high school diploma both have greater likelihoods of being fully banked and are fully banked at more equivalent rates.

Alternative Financial Service Use

Compared with men, a significantly greater share of women rely on alternative financial services. Seventeen percent of women report using at least one type of alternative financial service in the past year, compared with 15 percent of men. When exploring AFS use by race and gender, we find that nonwhite respondents use these services more frequently than their white, non-Hispanic peers. Of all cohorts analyzed, nonwhite women are the highest utilizers of alternative financial services, and the difference between nonwhite women and men is the largest, shown in **Table 2**.

Household income is also related to the gender differences in AFS use. There is a significant gender difference among adults in households who make $40,000–$100,000 per year: Women are approximately 4 percentage points more likely to use alternative financial services. The likelihood of using these costly financial services decreases among adults in the highest household income cohort, and the gap between men and women also disappears.

Credit

Access to credit can help individuals accumulate wealth and weather short term income shocks. Conversely, limited credit access can motivate the

[4] In order to preserve statistical power throughout the analysis, we compare white, non-Hispanic and nonwhite individuals for all breakdowns by race and ethnicity.

use of alternative financial services or other costly borrowing instruments. Given this, we examine the prevalence of holding credit cards, the denial of credit applications, and one's confidence in applying for an additional credit card. We find that women, while having a slight (but insignificant) advantage in credit card ownership compared with men (82 percent to 81 percent), are less likely to report being confident about their credit prospects, should they apply for an additional card compared with men (78 percent to 81 percent, respectively). Women's confidence gap is plausibly substantiated: Roughly 21 percent of men had a credit application denied, compared with 25 percent for women.

Prevalence of Credit Cards

Eighty-one percent of adults in the United States own at least one credit card.[5] Credit cards are the most common financial instrument and can serve multiple functions. Consumers use cards to make everyday purchases, shop online, and as a means to borrow money by carrying a balance past 30 days.

Overall, there is no significant difference in credit card ownership between men and women (**Table 3**). Significant gender differences are also absent within both race and ethnicity cohorts. This is noteworthy, as it is the only banking and credit outcome without a significant gender difference among nonwhite adults. Unlike the banking outcomes analyzed, a significant gender difference emerges among single adults. Single women are over 7 percentage points more likely to own at least one credit card, compared with single men. Accounting for household income level also generates larger gender differences than the minimal overall difference: Among individuals with household incomes between $40,000 and $100,000, women are 4 percentage points more likely to own at least one credit card. Among individuals with the highest household incomes, women are over 3 percentage points more likely to own at least one credit card relative to men.

Credit Application Outcomes

TABLE 4
Share of Adults (18+) Denied Credit in Previous 12 Months

	Men	Women	Difference
Overall	20.7	25.5	4.8**
White, non-Hispanic	16.8	18.5	1.8
Nonwhite	28.5	36.7	8.3*
Single	28.3	31.7	3.4
Living with Partner	17.1	21.8	4.7*
<$40K	38.3	41.7	3.4
$40K–$100K	21.8	25.4	3.6
>$100K	11.9	14.3	2.4
High School or Less	30.4	33.4	3.0
Some College	23.1	27.7	4.7
Bachelor's Degree or Higher	9.9	16.4	6.5**

Source: Authors' calculations using Federal Reserve Board's 2018 Survey of Household Economics and Decisionmaking data

Notes: All numbers represent percentages (%). Differences are defined as women less men. Income categories reflect household income.
* = $p<0.05$; ** = $p<0.01$

While the majority of recent credit applicants were approved, there are differences in the share of men and women denied additional credit.[6] Among those who applied for credit, a greater share of women report having a credit application denied than men (approximately 25 percent to 21 percent, as shown in **Table 4**). While white, non-Hispanic adults of both genders report similar experiences, a much greater share of nonwhite women report having a credit application denied than is true for nonwhite men.

[5] Authors' calculations using 2018 SHED data.

[6] Respondents were asked about the outcome of applying for credit in the 12 months before responding to the survey.

Single women and men are more likely to report a credit application denial than their counterparts who live with a partner, but the gender difference is significant only among adults who live with their partners. Among those with a bachelor's degree or higher, the share of women reporting a credit denial is significantly higher than that for men: Whereas 16 percent of women in this cohort report a recent credit denial, less than 10 percent of men do, resulting in the largest observed gender gap for the three educational categories analyzed.

Confidence Applying for Credit

Low confidence can also serve as a barrier to credit. That is, individuals can voluntarily lower the amount of credit extended to them by delaying or simply not applying for credit out of fear that they will be denied. This decision could be a result of a previous adverse event — such as a recent credit denial or a history of difficulty obtaining financial services — or it could reflect a faulty assumption about one's own creditworthiness. It is not possible to discern between the two using SHED data alone, but it is an avenue for future research.

As **Table 5** indicates, we find that overall, women are less confident that a future credit card application would be approved compared with men. Nonwhite women are significantly less likely to be very or somewhat confident in their credit applications compared with nonwhite men, but there is no significant gender difference among white, non-Hispanic adults.

The gender difference disappears when accounting for income but remains for some groups when comparing adults by household composition and educational attainment. Women who live with their partners have a significantly lower likelihood of being confident that a credit card application would be approved than do men in the same household type. Unlike the credit denial results indicating the greatest disparity among the college-educated cohort (Table 4), the largest gender difference related to credit card application confidence is found among adults with the lowest educational attainment.

TABLE 5
Share of Adults (18+) Very or Somewhat Confident a Credit Card Application Would Be Approved

	Men	Women	Difference
Overall	80.6	77.5	-3.1 **
White, non-Hispanic	84.4	83.1	-1.4
Nonwhite	73.3	68.0	-5.3**
Single	70.2	69.0	-1.2
Living with Partner	86.4	83.0	-3.4**
<$40K	61.7	58.5	-3.2
$40K–$100K	80.8	79.0	-1.7
>$100K	92.0	92.2	0.1
High School or Less	70.8	64.9	-5.9**
Some College	79.1	77.9	-1.2
Bachelor's Degree or Higher	93.8	91.3	-2.5**

Source: Authors' calculations using Federal Reserve Board's 2018 Survey of Household Economics and Decisionmaking data

Notes: All numbers represent percentages (%). Differences are defined as women less men. Income categories reflect household income.
* = $p<0.05$; ** = $p<0.01$

Retirement

The final financial outcome that we examine explores retirement confidence and investment decision-making. Women live longer than men, on average, and are likely to be the primary financial decision maker in their household later in life. Providing evidence that household division of labor may drive the gendered differences in financial literacy levels, Hsu (2011) shows that women acquire financial literacy later in life, specifically, right before they become widows. Gender differences regarding the amount saved and the comfort or ability to plan for the future have implications as women face retirement age because small differences can compound over time and result in large gender wealth disparities when adults enter retirement. Fewer women than men plan for retirement years, even as they begin to reach retirement age and enter retirement with less savings than men (Lusardi and Mitchell, 2011).

Previous research has found that women have greater financial risk aversion than men (Fisher and Yao, 2017). This gender difference in risk appetite is crucial because individuals today have greater responsibility for their retirement investments than previous generations. For older generations, employers routinely oversaw pension programs for their employees. However, self-directed retirement savings are currently the most common form of retirement planning for nonretired individuals in the United States (Board of Governors of the Federal Reserve System, 2019). Confusion and lack of comfort when making decisions for these types of accounts can significantly impact financial well-being later in life.

Among nonretired adults, we find that women are much less comfortable than men making investment decisions for their self-directed retirement accounts. Nearly 50 percent of men report being very or mostly comfortable when making investment decisions for their retirement accounts, compared with only 31 percent of women.

TABLE 6
Percent of Nonretired Adults (18+) Very or Mostly Comfortable Investing Self-Directed Retirement Savings

	Men	Women	Difference
Overall	49.2	30.8	-18.3 **
White, non-Hispanic	50.0	31.1	-18.9**
Nonwhite	47.3	30.3	-17.0**
Single	44.9	29.1	-15.8**
Living with Partner	51.0	31.6	-19.4**
<$40K	40.5	27.6	-12.8**
$40K–$100K	39.8	27.3	-12.5**
>$100K	58.3	34.6	-23.7**
High School or Less	39.7	27.7	-12.0**
Some College	43.3	30.7	-12.5**
Bachelor's Degree or Higher	58.8	32.3	-26.5**

Source: Authors' calculations using Federal Reserve Board's 2018 Survey of Household Economics and Decisionmaking data

Notes: All numbers represent percentages (%). Differences are defined as women less men. Income categories reflect household income.
* = p<0.05; ** = p<0.01

Among nonretired adults, men are also more likely to believe that their retirement saving plans are currently on track. While the majority of respondents do not report adequate retirement savings, 38 percent of men believe their current retirement savings plan is appropriate, compared with 34 percent of women.

Comfort with Investment Decisions

We find that women are significantly less comfortable making investment decisions for their retirement accounts than men. The gender difference is similarly large across all cohorts in **Table 6**. Interestingly, whereas stark differences emerge by race and ethnicity in banking and credit outcomes discussed previously, both white, non-Hispanic and nonwhite individuals report similar levels of comfort when making investment decisions for their retirement accounts, conditional on gender. Of the seven financial outcomes analyzed in this report, this question produced the most similar responses across race and ethnicity cohorts, even though significantly large gender differences remain.

Individuals who live with their partners are more likely to be comfortable making investment decisions, a result consistent with previous research (Van Rooij, Lusardi, and Alessie, 2012), but the gender gap is slightly smaller among those in single-headed households. The likelihood of being comfortable making investment decisions for retirement accounts is greatest among those with the highest levels of income and education, but so too are the gender disparities — primarily because men in these groups

TABLE 7
Percent of Nonretired Adults (18+) Who Believe Retirement Savings Plan Is on Track

	Men	Women	Difference
Overall	38.1	34.3	-3.8**
White, non-Hispanic	43.3	41.0	-2.4
Nonwhite	29.0	23.9	-5.2*
Single	24.9	22.0	-2.9
Living with Partner	46.2	41.6	-4.6**
<$40K	11.6	11.2	-0.5
$40K–$100K	31.4	28.1	-3.3
>$100K	57.1	55.6	-1.5
High School or Less	23.5	17.5	-6.0**
Some College	33.5	30.8	-2.7
Bachelor's Degree or Higher	58.1	51.9	-6.2**

Source: Authors' calculations using Federal Reserve Board's 2018 Survey of Household Economics and Decisionmaking data

Notes: All numbers represent percentages (%). Differences are defined as women less men. Income categories reflect household income.
* = p<0.05; ** = p<0.01

experience greater gains than women do relative to those with lower levels of income and education.

Belief that Retirement Planning Is on Track

Following the inquiry on investment comfort level with retirement accounts, the SHED asks respondents to assess if their retirement savings plan is on track. Survey respondents define being on track for themselves, as retirement planning varies tremendously by age, access to employer benefits, and individual circumstances.

Among nonretired adults, women are significantly less likely than men to believe that their retirement savings plan is on track (**Table 7**). When accounting for race and ethnicity, we find significant gender differences among nonwhite adults, for whom the difference between men and women is more than twice as large as it is for white, non-Hispanic individuals.

Adults living with their partners are more likely to report that their retirement plans are on track compared with single adults, but women in this cohort are significantly less likely than men to believe their retirement plan is on track. While the likelihood of reporting that one's retirement plan is on track increases with higher levels of education, gender differences are similarly large for adults with a high school diploma or less and those with a bachelor's degree or higher. In both cases, men are significantly more likely than women to report being on track.

Regression Results

To explore the persistence of the gender differences described previously, we develop four regression models for each of the seven outcomes and present the full results in Appendix B. The first model presented for each outcome includes only gender, and the significance level reported for the coefficient on the gender variable is consistent with the descriptive results presented previously. The second model, which we focus on here, also controls for race and ethnicity, household composition, household income, and educational attainment.

For both banking outcomes studied, the observed gender differences become insignificant when we control for race and ethnicity, household composition, household income, and educational attainment (Appendix B, Models 2 and 6). Interestingly, after controlling for observed socioeconomic and demographic variables, a significant gender gap emerges with respect to credit card ownership (Appendix B, Model 10). Women are more likely to own at least one credit card than men, all else equal. The other gender differences related to credit access — reporting a credit application denial and confidence applying for an additional credit card — become statistically insignificant (Appendix B, Models 14 and 18). However, the regression models fail to diminish the gender differences for retirement outcomes when observed socioeconomic and demographic characteristics are introduced. We find that women remain significantly less comfortable than men making investment decisions for their retirement accounts and significantly less likely to believe their retirement plan is on track (Appendix B, Models 22 and 26).

Section 2: EXPLORING THE ROLE OF FINANCIAL LITERACY

In this section, we explore how gender differences in banking, credit, and retirement outcomes differ by financial literacy level. We then enhance this analysis by adding regression models that control for all available characteristics — including financial literacy — to study the persistence of those gender differences.

Measuring Financial Literacy

How Do SHED Respondents Fare On Financial Literacy Questions?

As an indicator of financial literacy level, we construct a measure from three separate survey questions within the SHED questionnaire. The three financial literacy questions used were originally designed for the University of Michigan's 2004 Health and Retirement Survey (HRS) (Lusardi and Mitchell, 2008). These questions are included in numerous financial surveys, in addition to the SHED, to test individuals' basic financial knowledge.

The wording of these three questions is as follows:

- Suppose you had $100 in a savings account and the interest rate was 2 percent per year. After five years, *how much do you think you would have in the account if you left the money to grow*: more than $102, exactly $102, or less than $102?
- Imagine that the interest rate on your savings account was 1 percent per year and inflation was 2 percent per year. After one year, would you be able to buy more than, exactly the same as or less than today with the money in the account?
- Do you think the following statement is true or false? "Buying a single company stock usually provides a safer return than a stock mutual fund."

The first question, which we will refer to as the "interest rate question," tests an individual's ability to understand and calculate compounding interest. The second question, known as the "inflation question," tests whether respondents understand the concept of inflation. The third question, or the "risk diversification question," tests survey respondents on a central element of investing and retirement planning: diversification.

TABLE 8
Responses to Financial Literacy Questions, by Gender

	Correct	Incorrect	Don't Know
Interest Rate			
Men	75.0	9.6	15.5
Women	66.3	13.1	20.6
Inflation			
Men	67.3	11.0	21.7
Women	53.6	13.8	32.6
Risk Diversification			
Men	56.9	3.3	39.8
Women	39.3	3.2	57.5

Source: Authors' calculations using Federal Reserve Board's 2018 Survey of Household Economics and Decisionmaking data

Note: ALL numbers represent percentages (%).

Consistent with previous research (Lusardi, Mitchell, and Curto, 2009), the responses to this battery of questions, summarized in **Table 8**, indicate that there are substantial gender differences in financial literacy levels in the SHED sample. A greater share of men answered each question correctly, and fewer said that they did not know the answer to the question. With respect to the percent correct, men and women have the most similar response rate on the interest rate question, with a difference of just under 9 percentage points. The largest gap (18 percentage points) was found in the risk diversification question. The majority of women (58 percent) responded "don't know" to this question.[7]

Assigning Financial Literacy Level

For this analysis, we split survey respondents into cohorts with "low financial literacy" (0 or 1 questions

[7] Given the consistently greater share of women replying "don't know" to these three questions, it is possible that these questions are at least partly capturing the respondents' confidence on these issues, rather than their true abilities. While we cannot disentangle confidence from ability in this analysis, it seems unlikely that men answered correctly more often than women because they were confident enough to respond and more likely to guess the right answer. As such, we believe that the distribution of correct and incorrect answers supports the conclusion that there are gender differences in financial literacy in this sample. We believe future research on the role of confidence as it relates to measuring gender differences in financial literacy using survey instruments such as the SHED is warranted.

TABLE 9
Gender Composition of Financial Literacy Cohorts

	Men	Women
Full SHED Sample	47.8	52.2
Low Financial Literacy	37.8	62.2
High Financial Literacy	54.5	45.5

Source: Authors' calculations using Federal Reserve Board's 2018 Survey of Household Economics and Decisionmaking data

Note: all numbers represent percentages (%).

answered correctly) and "high financial literacy" (2 or 3 questions answered correctly). We acknowledge that it is difficult to have a holistic understanding of one's grasp of financial decision-making from three questions; however, this selection of questions has been used extensively to ascertain financial literacy levels for various populations around the world (Bucher-Koenen et al., 2017).

Table 9 displays the gender composition of the two financial literacy cohorts used in the analysis. Women are overrepresented within the low financial literacy cohort, representing 52 percent of all respondents but 62 percent of the low financial literacy cohort.

TABLE 10
Differences in Financial Outcomes, by Financial Literacy and Gender

		Overall	Low Financial Literacy	High Financial Literacy
Share Fully Banked	Men	79.1	63.7	86.2
	Women	76.6	66.1	86.3
	Difference	**-2.4***	**2.4**	**0.1**
Alternative Financial Service Use	Men	15.0	22.6	11.5
	Women	17.1	22.7	11.9
	Difference	**2.1***	**0.2**	**0.4**
Credit Card Prevalence	Men	80.7	64.1	88.4
	Women	82.2	72.5	91.1
	Difference	**1.5**	**8.4****	**2.7****
Credit Denial	Men	20.7	32.9	16.5
	Women	25.5	35.1	17.3
	Difference	**4.8****	**2.3**	**0.8**
Credit Card Application Confidence	Men	80.6	66.0	87.4
	Women	77.5	67.7	86.5
	Difference	**-3.1****	**1.6**	**-0.9**
Comfort Making Investment Decisions	Men	49.2	37.6	52.7
	Women	30.8	25.7	34.1
	Difference	**-18.3****	**-11.9****	**-18.6****
Retirement On Track	Men	38.1	20.5	46.9
	Women	34.3	23.2	45.0
	Difference	**-3.8****	**2.7**	**-1.9**

Source: Authors' calculations using Federal Reserve Board's 2018 Survey of Household Economics and Decisionmaking data

Notes: All numbers represent percentages (%). Differences are defined as women less men.
* = $p<0.05$; ** = $p<0.01$

Conversely, men are overrepresented in the high financial literacy cohort (55 percent) relative to their share of the full sample (48 percent).

Financial Outcomes by Gender and Financial Literacy

The descriptive results from the previous section (Tables 1 through 7), which are repeated in the first column of **Table 10**, show that there are significant gender differences among six of the seven financial outcomes analyzed when observed socioeconomic and demographic characteristics are omitted. However, gender differences are significant for just two outcomes after accounting for financial literacy level. Women are significantly more likely than men to own at least one credit card, while men have significantly greater comfort managing their self-directed retirement account compared with women with similar financial literacy levels. The gender differences disappear for the remaining outcomes after accounting for financial literacy level.

Financial Literacy Regression Results

In the fourth model for each of the seven outcomes presented in Appendix B, we add financial literacy alongside the four socioeconomic and demographic variables. Doing so improves model fit across the board, but it does not change the significance and sign of the gender differences that emerged after accounting for financial literacy level (reported in Table 10). Women are significantly more likely than men to own at least one credit card and significantly less likely to report feeling comfortable making investment decisions for their retirement accounts, even after controlling for financial literacy and the observed socioeconomic and demographic variables (Appendix B, Models 12 and 24). This serves as a reminder that familiarity and frequent use of one type of financial product (credit cards, for example) does not automatically guarantee the same for other financial products and outcomes.

Summary of Findings

We begin this study by documenting meaningful differences in banking, credit, and retirement outcomes by gender. However, findings from complementary regression analyses show that controlling for financial literacy mitigates the majority of these differences.

Our descriptive analysis shows that men are more likely to be fully banked than women and that women are much more likely to use alternative financial services than men. Women report being denied when applying for credit more often than men do, and women are less confident than men about applying for an additional credit card. Taken together, these findings could suggest that women are justifiably more insecure about requesting additional credit as a result of previous adverse outcomes for prior credit applications.

The largest gender disparities relate to the retirement survey questions. Men are more comfortable than women when it comes to making investment decisions for their retirement accounts. While the majority of nonretired adults do not believe their retirement savings plan is currently on track, women are significantly more likely than men to view their current savings as inadequate.

The complementary regression analyses illustrate that gender is significantly associated with only two of the outcomes studied. When controlling for race and ethnicity, household composition, income level, educational attainment, and financial literacy, women are significantly more likely to own at least one credit card and significantly less likely to feel comfortable making investment decisions for their retirement accounts. The persistence of these significant gender differences in the full model is important and deserving of future exploration.

Reducing financial inequities first requires pinpointing specific populations who face barriers to economic growth and security. Monitoring not just gender disparities in financial outcomes but also how these gender differences change with respect to financial literacy, education, race and ethnicity, household income, and household composition establishes a more enlightened snapshot of financial well-being. The results highlighted in this report add nuance to the discussions on gender differences related to banking habits, credit access, and retirement planning, underscoring the need to dive below the surface of aggregate statistics when studying financial outcomes.

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Appendix A. Logistic Regression Models

We estimate four logistic regression models for each of the seven financial outcomes studied in this report. We do so in order to determine if a significant gender difference exists in each outcome and to uncover the role financial literacy plays in the observed gender differences.

The first model includes gender as the sole control variable. Observed socioeconomic and demographic controls are then added in the second model. Gender, race and ethnicity, household composition, income level, and educational attainment are therefore included as controls. These two models are discussed in the first section of the report. The third model for each outcome only controls for gender and financial literacy level. The fourth regression model includes observed socioeconomic and demographic controls in addition to financial literacy level. The third and fourth models are discussed within Section 2 of the report.

Full results for all models can be found in Appendix B.

The regression analysis utilizes the same SHED dataset that is used to produce all the descriptive findings. The McFadden's pseudo-R^2 statistic is included in the regression results in Appendix B as a measure of model fit. For all seven outcomes, the model that includes every control (the fourth model) produces the largest R^2 value. Similarly, the first model — controlling for gender alone — has the weakest fit for all outcomes analyzed. However, there is significant variation in model fit across the seven outcomes studied.

It is important to note that these models do not include many important variables that are strongly associated with financial health because these variables are not included in the SHED data set. For example, we do not control for an individual's credit score or bankruptcy status. Finally, similar to the descriptive analysis, the results from the regression models should not be interpreted as causal.

Appendix B. Regression Results

TABLE 1 BANKING REGRESSION RESULTS

Likelihood of being fully banked (Models 1–4) and using alternative financial services within the previous year (Models 5–8). (Odds ratios and standard errors of coefficients estimated from a binary logistic regression model).

		Fully Banked				Alternative Financial Service Use			
		Odds Ratio (Standard Error)				Odds Ratio (Standard Error)			
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Gender	(Men are reference)								
	Women	0.8678* (0.0503)	0.9421 (0.0593)	1.0617 (0.0647)	1.0511 (0.0677)	1.1674* (0.0756)	1.0959 (0.0739)	1.0249 (0.0682)	1.0305 (0.0705)
Financial Literacy	(Low Financial Literacy is reference)								
	High Financial Literacy			3.3769** (0.2040)	1.9937** (0.1360)			0.4524** (0.0298)	0.6768** (0.0503)
Race	(White, non-Hispanic is reference)								
	Nonwhite		0.3561** (0.0223)		0.3871** (0.0247)		2.3979** (0.1600)		2.2742** (0.1553)
Household Composition	(Single is reference)								
	Living with Partner		1.2171** (0.0825)		1.1920* (0.0814)		1.0632 (0.0782)		1.0780 (0.0793)
Household Income	(Less than $40K is reference)								
	$40K–$100K		2.0079** (0.1427)		1.9300** (0.1397)		0.6871** (0.0527)		0.7061** (0.0548)
	>$100K		3.6490** (0.3698)		3.2835** (0.3362)		0.3573** (0.0396)		0.3825** (0.0431)
Education	(High School or Less is reference)								
	Some College		1.3679** (0.0974)		1.2425** (0.0902)		1.1242 (0.0873)		1.1910* (0.0936)
	Bachelor's Degree or Higher		2.3244** (0.2000)		1.8912** (0.1677)		0.6644** (0.0627)		0.7481** (0.0722)
	N	11,316	11,316	11,316	11,316	11,316	11,316	11,316	11,316
	McFadden's Pseudo R^2	0.0008	0.1304	0.0573	0.1448	0.0009	0.0707	0.0240	0.0753

Source: Authors' calculations using Federal Reserve Board's 2018 Survey of Household Economics and Decisionmaking data

Notes: Observation counts include item nonresponse.

TABLE 2. CREDIT REGRESSION RESULTS

Likelihood of owning at least one credit card (Models 9–12), reporting a denial after applying for additional credit (Models 13–16), and confidence in being approved should one apply for an additional credit card (Models 17–20). (Odds ratios and standard errors of coefficients estimated from a binary logistic regression model).

		Has At Least One Credit Card				Credit Denial				Confidence Applying for Credit Card			
		Odds Ratio				Odds Ratio				Odds Ratio			
		Model 9	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16	Model 17	Model 18	Model 19	Model 20
Gender	(Men are reference)												
	Women	1.1047 (0.0704)	1.2599** (0.0894)	1.4220** (0.0967)	1.4322** (0.1048)	1.3121** (0.1274)	1.1872 (0.1211)	1.0800 (0.1091)	1.0691 (0.1112)	0.8283** (0.0492)	0.8949 (0.0579)	1.0060 (0.0627)	0.9856 (0.0651)
Financial Literacy	(Low Financial Literacy is reference)												
	High Financial Literacy			4.0769** (0.2836)	2.2509** (0.1738)			0.3929** (0.0389)	0.5926** (0.0667)			3.2985** (0.2036)	1.8885** (0.1317)
Race	(White, non-Hispanic is reference)												
	Nonwhite		0.5860** (0.0420)		0.6545** (0.0482)		1.9950** (0.2033)		1.8715** (0.1960)		0.5711** (0.0373)		0.6234** (0.0421)
Household Composition	(Single is reference)												
	Living with Partner		2.2649** (0.1731)		2.2353** (0.1720)		0.7530* (0.0826)		0.7574* (0.0828)		1.6249** (0.1104)		1.6045** (0.1099)
Household Income	(Less than $40K is reference)												
	$40K–$100K		2.2087** (0.1742)		2.1122** (0.1690)		0.5595** (0.0644)		0.5787** (0.0675)		2.0957** (0.1502)		2.0171** (0.1464)
	>$100K		3.1892** (0.4010)		2.8529** (0.3620)		0.3669** (0.0560)		0.4031** (0.0622)		3.8709** (0.4253)		3.5200** (0.3906)
Education	(High School or Less is reference)												
	Some College		1.8289** (0.1425)		1.6480** (0.1312)		0.8736 (0.1053)		0.9298 (0.1151)		1.4013** (0.1001)		1.2836** (0.0933)
	Bachelor's Degree or Higher		5.2228** (0.5668)		4.1338** (0.4623)		0.5087** (0.0696)		0.5810** (0.0837)		3.2798** (0.2963)		2.7166** (0.2510)
	N	11,316	11,316	11,316	11,316	3,860	3,860	3,860	3,860	11,316	11,316	11,316	11,316
	McFadden's Pseudo R^2	0.0004	0.1688	0.0717	0.1875	0.0030	0.0841	0.0361	0.0928	0.0014	0.1371	0.0553	0.1493

Source: Authors' calculations using Federal Reserve Board's 2018 Survey of Household Economics and Decisionmaking data

Notes: Observation counts include item nonresponse.
* = $p<0.05$; ** = $p<0.01$

TABLE 3. RETIREMENT REGRESSION RESULTS

Likelihood of being comfortable making investment decisions for retirement account (Models 21–24), and belief that personal retirement plan is on track (Models 25–28). (Odds ratios and standard errors of coefficients estimated from a binary logistic regression model).

		Comfort Making Investment Decisions				On Track			
		Odds Ratio (Standard Error)				Odds Ratio (Standard Error)			
		Model 21	Model 22	Model 23	Model 24	Model 25	Model 26	Model 27	Model 28
Gender	(Men are reference)								
	Women	0.4610** (0.0317)	0.4491** (0.0313)	0.4921** (0.0344)	0.4713** (0.0332)	0.8467** (0.0491)	0.8422** (0.0537)	0.9993 (0.0602)	0.9098 (0.0587)
Financial Literacy	(Low Financial Literacy is reference)								
	High Financial Literacy			1.6531** (0.1360)	1.3994** (0.1191)			3.0078** (0.1980)	1.6107** (0.1206)
Race	(White, non-Hispanic is reference)								
	Nonwhite		0.9973 (0.0780)		1.0378 (0.0820)		0.6430** (0.0462)		0.6760** (0.0493)
Household Composition	(Single is reference)								
	Living with Partner		1.0607 (0.0881)		1.0470 (0.0873)		1.7246** (0.1261)		1.6893** (0.1240)
Household Income	(Less than $40K is reference)								
	$40K–$100K		0.9069 (0.0964)		0.8940 (0.0960)		2.4857** (0.2259)		2.3933** (0.2191)
	>$100K		1.4334** (0.1587)		1.3627** (0.1527)		5.1558** (0.4950)		4.7172** (0.4575)
Education	(High School or Less is reference)								
	Some College		1.0826 (0.1166)		1.0460 (0.1138)		1.4278** (0.1310)		1.3388** (0.1244)
	Bachelor's Degree or Higher		1.3870** (0.1423)		1.2806* (0.1333)		2.5798** (0.2288)		2.2614** (0.2049)
	N	5,064	5,064	5,064	5,064	7,306	7,306	7,306	7,306
	McFadden's Pseudo R^2	0.0262	0.0425	0.0349	0.0458	0.0012	0.1460	0.0476	0.1524

Source: Authors' calculations using Federal Reserve Board's 2018 Survey of Household Economics and Decisionmaking data

Notes: Observation counts include item nonresponse.
* = p<0.05; ** = p<0.01

Appendix C. About the Survey of Household Economics and Decisionmaking (SHED)

Since 2013, the Federal Reserve Board of Governors has conducted the Survey of Household Economics and Decisionmaking (SHED) annually. The survey measures the economic well-being of U.S. households and includes a range of topics such as credit access, education, economic fragility, retirement, and savings. The survey is fielded in the fourth quarter each year and is administered via an online panel.

Questions for the SHED are written by staff of the Federal Reserve Board in consultation with other Federal Reserve System staff, academics, and survey experts. The questions are fielded online using Ipsos's nationally representative, probability-based KnowledgePanel. The 2018 survey results are based on responses from 11,316 participants. This includes the main sample and an oversample of individuals with a household income less than $40,000.

The sample is weighted to ensure that the results are representative of adults aged 18 years or older in the United States. The weighting methodology utilizes the March supplement of the Current Population Survey (CPS) along nine dimensions: gender, age, race, ethnicity, education, census region, household income, homeownership status, and metropolitan area status. Last, weights are adjusted in a poststratification process that corrects for survey nonresponse and any under- and oversampling. The SHED questionnaire and anonymized data are available through the Federal Reserve Board's public website at www.federalreserve.gov/consumerscommunities/shed.htm.

Appendix D. SHED Questions Used in This Report

BK1. Do you [and/or your spouse/ and/or your partner] currently have a checking, savings, or money market account?

BK2_a. In the past 12 months, did you: [Purchase a money order from a place other than a bank]

BK2_b. In the past 12 months, did you: [Cash a check at a place other than a bank]

BK2_c. In the past 12 months, did you: [Take out a payday loan or payday advance]

BK2_d. In the past 12 months, did you: [Take out a pawn shop loan or an auto title loan]

BK2_e. In the past 12 months, did you: [Obtain a tax refund advance to receive your refund faster]

C2A. Do you have at least one credit card?

A1_a. In the past 12 months, please tell us if any of the following has happened: [You [or your spouse/or your partner] were turned down for credit].

A6. If you were to apply for a credit card today, how confident are you that your application would be approved?

DC4. How comfortable are you with making your own investment decisions in your retirement accounts?

K0. Do you think that your retirement savings plan is currently on track?

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