Do Financial Knowledge, Behavior, and Well-Being Differ by Gender?

Brett Theodos, Emma Kalish, Signe-Mary McKernan, and Caroline Ratcliffe

Men and women differ in a myriad of ways demographically and economically, from educational attainment to employment and earnings to wealth and life expectancy. Men age 65 and older are more likely to have a bachelor’s degree than women of the same age, although the difference reverses for younger generations: women under age 45 are more likely than men to have a college degree. Across all age groups, however, women have lower employment rates and lower average earnings than men. Beyond these labor market outcomes, men and women can differ in their knowledge of and behaviors in the financial marketplace, and these differences can in turn influence their financial health and well-being.

The financial marketplace has become increasingly complex, and more responsibility is placed on individual consumers. Today, for example, few workers have defined benefit pensions that pay out a defined (or guaranteed) monthly benefit until death. Instead, many have defined contribution retirement savings plans, such as 401ks—individual accounts with future benefits that fluctuate based on investment decisions, among other factors (US Department of Labor 2013). The marketplace presents other impediments for reaching financial security. The Consumer Financial Protection Bureau (2013) reports that for every dollar spent on financial education, the financial services industry spends 25 dollars on marketing its products and services. Given these complexities, greater financial knowledge and healthier financial behaviors may improve consumers’ financial well-being, though the links between knowledge, behavior, and well-being are not entirely clear.

We use the newly available FINRA Investor Education Foundation’s 2012 National Financial Capability Survey (NFCS, administered through the American Life Panel) to examine differences among men and women in financial knowledge, financial behavior, and financial well-being; and consider multiple measures for each of these three concepts. Because men and women differ in many observable ways that are not innate to gender (for example, employment, income, educational attainment), we use propensity score reweighting and regression models to adjust so men and women have similar education and other observable characteristics. While our primary analyses examine all men and women together, we also examine unmarried people separately from married people.

Overall, we find that women are less financially knowledgeable than men, controlling for such demographic and economic characteristics as employment, income, and educational attainment. They also differ modestly in their financial behaviors and level of financial well-being. Women are less willing than men to take financial risks and have more credit cards than men, though women are equally likely to pay their credit cards in full every month. More differences by gender arise when we separate the married and unmarried—particularly between unmarried men and women. In addition to having more credit cards, unmarried women are less likely to pay their credit cards in full and are more likely to have difficulty paying bills than unmarried men, though this difference is driven by unmarried women with dependent children who likely have other financial stresses. We find no statistically significant gender differences in use of alternative financial services (such as payday loans, tax refund loans, and pawn shops) or planning for retirement—overall or by marital status. Similarly, no differences emerge between men and women in having emergency savings, having retirement savings, or being financially satisfied. Women do, however, report slightly higher economic satisfaction than men—overall and by marital status.

It’s important to acknowledge that the role of gender is far from straightforward. Women who combine financial accounts and decisionmaking through marriage or partnership can be expected to behave differently than single women—and not simply because of selection effects. Married, and especially unmarried, women are not monolithic. Women also differentiate themselves across other factors like parenting, marital history, educational attainment, and income.
Are Women Less Financially Knowledgeable Than Men?

It is widely acknowledged that financial knowledge in the United States is quite low (FINRA Investor Education Foundation 2009; Lusardi and Tufano 2009). In addition, the literature suggests that men and women differ along financial dimensions. Several studies find that women have lower levels of financial knowledge than men (Fonseca et al. 2010; Lusardi and Tufano 2009; Zissimopoulos, Karney, and Rauer 2008). There is also some evidence that women are more likely than men to engage in detrimental or less-advantageous financial behaviors. For example, women pay higher credit card interest rates than comparable men (Mottola 2013) and participate less in the stock market (van Rooij, Lusardi, and Alessie 2011). On the other hand, the evidences is mixed on whether women are more or less likely than men to use potentially harmful high-cost credit products, such as payday loans and auto title loans (Lusardi and Tufano 2009; McKernan, Ratcliffe, and Kuehn 2013).

While the NFCS data confirm that financial knowledge is generally low, they also reveal important differences between men and women. Women have lower levels of financial knowledge, on average, than men do, but they do not assess their financial skills more negatively than men do.

Starting with financial knowledge, measured by answers to five quiz questions, women answer fewer questions correctly than men do (3.1 correct answers for women versus 3.6 for men on average; see table 1). The gender difference arises both because women are more likely to report not knowing answers to the questions and because women answered more questions incorrectly.

Given differences in earnings and employment levels for men and women, we investigated whether controlling for demographic and economic factors close the gap between women’s and men’s financial knowledge levels (see the Data and Approach box for details). The sizable differences remains: women score 6.5 percent lower on the financial literacy quiz than men (figure 1). This gender difference is similar for married, as well as unmarried, men and women. On our five-question scale, this 6.5 percent difference translates into women answering less than 0.5 fewer questions correct.

Despite the gaps observed in financial knowledge levels, after controlling for other factors, women are no less confident about their financial knowledge than are men (figure 1). Specifically, survey participants were asked to respond to the statement, “I am good at dealing with day-to-day financial matters, such as checking accounts, credit and debit cards, and tracking expenses.” Examining married and unmarried groups separately, we find gender differences. Married women rate their financial skills lower than married men do, but unmarried women do not rate their financial skills lower than unmarried men (controlling for income and other factors). This finding may result from men and women adopting different financial tasks in the family. Married couples report that women are relatively more likely to pay bills and make short-term spending or savings plans, while men are relatively more likely to pay taxes, track investments, and make long-term spending or savings plans (Fonseca et al. 2010).

Table 1. Financial Knowledge, Behavior, and Well-Being Means, by Gender

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial knowledge</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial knowledge</td>
<td>3.6</td>
<td>3.1 **</td>
<td>3.4</td>
</tr>
<tr>
<td>Self-reported financial knowledge</td>
<td>8.0</td>
<td>7.6 ***</td>
<td>7.8</td>
</tr>
<tr>
<td><strong>Financial behavior</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4+ credit cards</td>
<td>32%</td>
<td>38% **</td>
<td>36%</td>
</tr>
<tr>
<td>Failed to pay credit card in full</td>
<td>44%</td>
<td>44%</td>
<td>44%</td>
</tr>
<tr>
<td>Used alternative financial services</td>
<td>23%</td>
<td>22%</td>
<td>22%</td>
</tr>
<tr>
<td>Planned for retirement</td>
<td>43%</td>
<td>43%</td>
<td>43%</td>
</tr>
<tr>
<td>Willingness to take risks</td>
<td>4.9</td>
<td>4.1 ***</td>
<td>4.5</td>
</tr>
<tr>
<td><strong>Financial well-being</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty paying bills</td>
<td>47%</td>
<td>57% ***</td>
<td>52%</td>
</tr>
<tr>
<td>Emergency funds</td>
<td>44%</td>
<td>42% **</td>
<td>43%</td>
</tr>
<tr>
<td>Have retirement savings</td>
<td>63%</td>
<td>58%</td>
<td>61%</td>
</tr>
<tr>
<td>Satisfaction with personal finances</td>
<td>5.3</td>
<td>5.1 ***</td>
<td>5.2</td>
</tr>
<tr>
<td>Satisfaction with overall economic situation</td>
<td>5.7</td>
<td>6.1</td>
<td>5.9</td>
</tr>
<tr>
<td>Total</td>
<td>26.8</td>
<td>26.0</td>
<td>26.4</td>
</tr>
</tbody>
</table>

*Source: Authors’ calculations from the American Life Panel (ALP) sample of the 2012 National Financial Capability Study (284) and Effects of the Financial Crisis survey (299).*

*Notes: All means are weighted using ALP person-weights. For more information on each measure, see appendix table A1.

** Male-female difference is significant at the p < .05 level; *** difference is significant at the p < .01 level.*
Do Women and Men Exhibit Different Financial Behaviors?

Financial knowledge alone does not ensure financial well-being. One must act on that knowledge to undertake helpful behaviors—and there are widely recognized cognitive, behavioral, and social reasons why people fail to make advantageous financial decisions (Bar-Gil 2004; Godwin 1998; Karlan, Morten, and Zinman 2012; Sprenger and Stavins 2008; Stango and Zinman 2011; Telyukova 2012; Thaler 1994; Tversky and Kahneman 1982). For example, a person may know that he or she should rebalance a retirement portfolio, but if that knowledge is not acted on, he or she is no better off than the person who has less knowledge but the same behavior.

Does women’s lower financial knowledge translate to worse financial behaviors than men? Some financial behaviors differ by gender, while others do not. One striking discrepancy: controlling for demographic and economic characteristics, women are 32 percent more likely than men to have four or more credit cards (figure 2). This difference is not simply explained by specialization, where married women perform more of the daily spending than men (Fonseca et al. 2010). Unmarried women are also more likely (31 percent) to hold multiple credit cards than unmarried men (results not shown). This difference may be explained partly by women’s greater holding of store-branded credit cards than men.

While women hold more credit cards than men, women as a group are not significantly less likely to pay their credit card in full, after controlling for other factors. However, married and unmarried women exhibit different behaviors. Unmarried women are less likely to pay their credit card in full than unmarried men; this is driven by unmarried women with children. Married women and unmarried women without children are as likely as their male counterparts to pay their credit cards in full each month. Neither unmarried nor married women are more likely to turn to alternative financial services, such as pawn shops, payday lenders, and auto title loans, than men.

Looking at financial planning and investment behavior, women (whether married or unmarried) exhibit no differences when compared with men in the rate at which they report planning for retirement. Finally we turn to the question of financial risk, a topic that has received considerable attention in the literature (see, for example, Prudential 2012). Responding on a scale from one to ten to the question, “When thinking of your financial investments, how willing are you to take risks?,” women (both married and unmarried) report being less willing to take financial risks than men.

Based on the behaviors examined, women’s lower financial knowledge does not necessarily translate to worse financial behaviors than men. Women’s behaviors are statistically significantly different in that they hold more credit cards and are more risk averse (and, in the case of unmarried mothers, they pay their credit card in full less often). Both financial knowledge and financial behaviors can affect well-being. Next we turn to gender differences in financial well-being.

Do Financial Knowledge, Behavior, and Well-Being Differ by Gender?
Figure 2. Women’s Financial Behavior Is Not Clearly Worse Than Men’s

Source: Authors’ calculations from the American Life Panel (ALP) sample of the 2012 National Financial Capability Study (284) and Effects of the Financial Crisis survey (299).
Notes: This graph represents the percentage increase or decrease in the outcome for women relative to men, based on regressions that control for age, race/ethnicity, education, family composition, employment, and income. All results are weighted using ALP person-weights and propensity score reweighting. ** Difference is significant at the $p < .05$ level; *** difference is significant at the $p < .01$ level.

Figure 3. Women Report More Difficulty Paying Bills but Slightly Greater Economic Satisfaction

Source: Authors’ calculations from the American Life Panel (ALP) sample of the 2012 National Financial Capability Study (284) and Effects of the Financial Crisis survey (299).
Notes: This graph represents the percentage increase or decrease in the outcome for women relative to men, based on regressions that control for age, race/ethnicity, education, family composition, employment, and income. All results are weighted using ALP person-weights and propensity score reweighting. ** Difference significant at the $p < .05$ level; *** difference significant at the $p < .01$ level.
Does the Financial Well-Being of Women and Men Differ?

Our five measures of financial well-being connote both objective and subjective experiences and views of the level of financial security, satisfaction, and stress experienced by households. Women and men statistically significantly differ on only two of the five measures, after controlling for age, education, income, and other observable differences.

Starting with a measure of financial stress, women are 15 percent more likely than men to report that, in a typical month, it is difficult for them to cover their expenses and pay all their bills (figure 3). Again, however, the experiences of married and unmarried women diverge. Married women report no more difficulty in covering their expenses than married men, but unmarried women are 21 percent more likely to report such difficulties than unmarried men. This difference is again driven by unmarried mothers; we find no differences between unmarried childless men and women.

Looking at asset accumulation, we see few differences in savings: Women and men are no more or less likely to hold emergency savings (measured by whether the respondent has money set aside that could cover three months’ worth of expenses). And there are no statistically significant gender differences in the rate at which men and women report having retirement savings.

Turning to satisfaction measures, we find that women and men do not report differential rates of satisfaction with their personal financial condition (assets, debts, and savings). This is true for both married and unmarried women. Interestingly, however, both unmarried and married women are slightly more satisfied with their overall economic situation than their male counterparts.

How Does Financial Knowledge Factor In?

When considering gender differences in financial well-being and behavior, one might conclude that women—particularly unmarried mothers—are faring less well because they have less financial knowledge. Alternatively, they may simply have fewer financial options, or other factors may be in play. By controlling for financial knowledge, we can begin to understand this distinction.

We reexamine the financial behavior and well-being outcomes described above but include financial knowledge as an additional control variable. Almost without exception, the gender results from the models, including and excluding the financial knowledge control variable, are substantively identical. While financial knowledge is an important correlate of improved financial behavior and well-being, it does not account for gender differences in these financial outcomes.

What Do These Findings Mean?

Most financial surveys capture household-level data, thus blurring gender differences. The individual-level National Financial Capability Survey affords a valuable look at gender differences in financial knowledge, behavior, and well-being. This analysis reveals a complicated picture. Women are less financially knowledgeable and, somewhat worrisomely, do not perceive themselves as less financially knowledgeable than men. Yet, women’s lower financial knowledge does not necessarily translate to worse financial behaviors or lower financial well-being than men.

Unmarried mothers, however, emerge as a particularly vulnerable group. While unmarried women are less likely than unmarried men to pay their credit cards in full, this is driven by unmarried women with dependent children. These unmarried mothers can often face multiple financial challenges, as they work to both care for and financially support their children. Also, while women overall report more difficulty covering their expenses than men, this finding is again driven by single mothers. We find no differences between married men and women or unmarried childless men and women.

Though financial knowledge gaps by gender exist, they do not account for gender differences in financial behavior or financial well-being. The financial service and capability research field is struggling with how much knowledge matters, and when and how to increase knowledge. These gender differences in knowledge are only important as far as knowledge influences financial behaviors and well-being. Our finding of worse financial well-being among unmarried mothers in particular suggest that this group is worthy of attention.
### Appendix Table A1. Financial Knowledge, Behavior, and Well-Being Measures

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Scale</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial knowledge</strong></td>
<td>0–5</td>
<td>Number of the following financial literacy questions answered correctly: 1. Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow? (Possible answers: More than $102, exactly $102, less than $102, don’t know, prefer not to say) 2. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account? (Possible answers: More than today, exactly the same, less than today, don’t know, prefer not to say) 3. If interest rates rise, what will typically happen to bond prices? (Possible answers: They will rise, they will fall, they will stay the same, there is no relationship between bond prices and the interest rate, don’t know, prefer not to say) 4. A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less. (Possible answers: True, false, don’t know, prefer not to say) 5. Buying a single company’s stock usually provides a safer return than a stock mutual fund. (Possible answers: True, false, don’t know, prefer not to say)</td>
</tr>
<tr>
<td>Self-reported financial knowledge</td>
<td>1–10</td>
<td>I am good at dealing with day-to-day financial matters, such as checking accounts, credit and debit cards, and tracking expenses.</td>
</tr>
<tr>
<td><strong>Financial behavior</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4+ credit cards</td>
<td>0/1</td>
<td>How many credit cards do you have? (not including debit cards)</td>
</tr>
<tr>
<td>Failed to pay credit card in full</td>
<td>0/1</td>
<td>In the past 12 months, I always paid my credit cards in full.</td>
</tr>
<tr>
<td>Used alternative financial services</td>
<td>0/1</td>
<td>In the past five years have you … taken out an auto title loan?; taken out a short-term “payday” loan?; used a pawn shop?</td>
</tr>
<tr>
<td>Planned for retirement</td>
<td>0/1</td>
<td>Have you ever tried to figure out how much you need to save for retirement?</td>
</tr>
<tr>
<td>Willingness to take risks</td>
<td>1–10</td>
<td>When thinking of your financial investments, how willing are you to take risks?</td>
</tr>
<tr>
<td><strong>Financial well-being</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty paying bills</td>
<td>0/1</td>
<td>In a typical month, how difficult is it for you to cover your expenses and pay all your bills? (have difficulty, do not have difficulty)</td>
</tr>
<tr>
<td>Emergency funds</td>
<td>0/1</td>
<td>Have you set aside emergency or rainy-day funds that would cover your expenses for three months, in case of sickness, job loss, economic downturn, or other emergencies!</td>
</tr>
<tr>
<td>Have retirement savings</td>
<td>0/1</td>
<td>Do you have any IRA, 401(k), Keogh, or similar retirement saving accounts? Please include any such accounts that you have through a current or former employer.</td>
</tr>
<tr>
<td>Satisfaction with personal finances</td>
<td>1–10</td>
<td>Overall, thinking of your assets, debts, and savings, how satisfied are you with your current personal financial condition?</td>
</tr>
<tr>
<td>Satisfaction with overall economic situation</td>
<td>1–10</td>
<td>How satisfied are you with your overall economic situation?</td>
</tr>
</tbody>
</table>

*Source: Financial knowledge questions drawn from the National Financial Capability Survey and originally designed by Annamaria Lusardi and Olivia Mitchell.*
Do Financial Knowledge, Behavior, and Well-Being Differ by Gender?

Data and Approach

This analysis uses combined data from the RAND American Life Panel (ALP) sample of the 2012 National Financial Capability Study (284) and Effects of the Financial Crisis survey (299) to investigate the role that gender plays in a robust set of financial knowledge, behavior, and well-being outcomes. The ALP is a nationally representative standing Internet panel of roughly 5,000 individuals who participate in surveys twice monthly. In late 2012, the ALP fielded the FINRA Investor Education Foundation’s 2012 National Financial Capability Study, which asks about financial knowledge, attitudes, and behaviors. Our study sample includes 1,305 individuals ages 25 and over that appear in ALP survey 284 and 299.

Our approach uses propensity score reweighting (combined with survey weights) together with logistic and ordinary least squares regression models to adjust for observed differences between men and women. Propensity score reweighting is a generalization of the Oaxaca and Blinder methods (Blinder 1973; DiNardo 2002; Oaxaca 1973) and makes the group status (gender) appear randomly assigned (Nichols 2007). It estimates the conditional probability of being in the treatment group (being female) and then uses the odds as a weight for the comparison group (being male) (Nichols 2007, 2008). Following Black, Tseng, and Wilkins (2009), we include marriage interaction terms in the reweighting to allow characteristics to “operate in different directions” for subpopulations. All regression models include controls for age (25–34, 35–44, 45–54, 55–64, 65+), race/ethnicity (white non-Hispanic, black non-Hispanic, Hispanic, other race), education (no high school, high school, some college, college degree), household composition (married, cohabiting, live with other adult, live alone, dependent children present), employed, and household income (less than $25,000, $25,000–$50,000, $50,000–$75,000, $75,000+).

Notes

1. For example, among 25- to 34-year-olds in 2012, 28.2 percent of men and 36.3 percent of women had at least a bachelor’s degree. Among those age 65 and older, the shares were 29.3 percent and 18.5 percent, respectively (Table S1501, “Educational Attainment: 2012 American Community Survey 1-Year Estimates, US Census Bureau, accessed February 10, 2014, http://factfinder2.census.gov/faces/tableservices/jsf/pages/prodview.xhtml?pid=ACS_12_1YEST&ova=table). In October 2013, 54 percent of women and 64 percent of men age 16 and older were employed (Table A-1, “Employment Status of the Civilian Population by Sex and Age,” Bureau of Labor Statistics 2013, last modified February 4, 2014, http://www.bls.gov/news.release/empsit.t01.htm). In 2011, the female-to-male earnings ratio was 0.77 (DeNavas-Walt, Proctor, and Smith 2012).

2. In October 2013, 54 percent of women and 64 percent of men age 16 and older were employed (Table A-1, “Employment Status of the Civilian Population by Sex and Age,” Bureau of Labor Statistics 2013, last modified February 4, 2014, http://www.bls.gov/news.release/empsit.t01.htm). In 2011, the female-to-male earnings ratio was 0.77 (DeNavas-Walt, Proctor, and Smith 2012).

3. The measures of financial knowledge differ across these studies. The measure used by Fonseca et al. (2010) is based on 23 questions that capture financial concepts such as investing, life insurance, and annuities. Lusardi and Tufano (2009) use questions to assess debt literacy (for example, compound interest, time to pay off credit card) and self-assessed financial knowledge, while Zissimopoulos et al. (2008) use one question about compound interest.

4. Differential payment could reflect differences in offers received (as found by Ayres and Siegelman 1995 in the auto market), as well as consumer choice.

5. In a cluster analysis, Lusardi and Tufano (2009) find that the cluster that uses alternative financial services (for example, payday loans, tax refund loans, and pawn shops) is disproportionately made up of women. On the other hand, in regression analyses that control for individual and household economic characteristics, McKernan et al. (2013) find no difference in the use of payday loans between men and women and find that women are less likely to use auto title loans, tax refund loans, and pawn shops.

References


About the Authors

Brett Theodos is a senior research associate with the Metropolitan Housing and Communities Policy Center at the Urban Institute. Emma Kalish is a research assistant in the Center on Labor, Human Services, and Population at the Urban Institute. Signe-Mary McKernan and Caroline Ratcliffe are senior fellows in the Center on Labor, Human Services, and Population.

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