

Measures and drivers of financial well-being

Abstract

Financial well-being (FWB) is often measured using the CFPB's Financial Well-Being Scale, but there are many alternative ways to assess this concept, including individual perceptions of FWB (e.g., financial satisfaction or stress), objective outcomes that are indicative of FWB (e.g., net wealth and retirement adequacy), and behaviors that influence FWB (e.g., planning, saving, and budgeting). Using a wide range of indicators of FWB, we find that many are influenced by a common set of drivers. Individual discount rates, risk preferences, financial self-confidence (efficacy), income, and good health consistently contribute to FWB across its different dimensions. Financial literacy interacts with the discount rate, efficacy, and income to impact FWB as well. Personality traits, such as conscientiousness and neuroticism, are influential in alternative ways across models.

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Introduction

An individual's state of financial well-being (FWB) arises from a compilation of factors, including their self-perception of having the autonomy to make sound decisions, behaviors they undertake, objective values of their net worth, and their self-assessment of current positions and future expectations. Each of these closely related categories contributes in a unique way to FWB. Accordingly, there are many alternative ways to assess the concept of FWB, including surveys of individual perceptions (e.g., financial satisfaction or stress), objective outcomes indicative of FWB (e.g., wealth accumulation), behaviors influencing FWB (e.g., budgeting), and metrics representing composite scores across different dimensions of FWB. Promoting improvements in FWB requires detailed understanding of factors contributing to its variety of measures. We systematically identify drivers of FWB and investigate their relationship to composite FWB as well as behaviors, perceptions, and quantifiable outcomes indicative of FWB. In doing so, we find drivers that are influential across the different measures of FWB and investigate how they interact to influence composite FWB.

There is growing awareness that individual indicators of a particular condition or outcome, such as financial stress or retirement adequacy, cannot fully reflect FWB. An individual's financial circumstances often depend not only on the behaviors they undertake, but on chance and other exogenous factors. For instance, access to stock market participation can be enhanced or limited by opportunities provided by employer savings plans, awareness of the risk and return relationship, individual risk attitudes, and a sense of agency or self-confidence (Merkoulova & Veld 2022a and 2022b; Van Rooij et al., 2012).

The definition of composite FWB developed by the Consumer Financial Protection Bureau (CFPB), based on perceptions about present and future states, is perhaps the best known and most widely applied. Netemeyer et al. (2018) develop two related composite measures separated by time dimensions. Other examples include the Financial Health score (Garon et al., 2021) and Fidelity's Financial Wellness Score (Fidelity, 2020). A common thread across definitions is that to achieve a sense of FWB, an individual maintains some level of consideration over intertemporal tradeoffs. For example, the CFPB defines financial well-being as a state in which individuals perceive they have control over short-term finances, would be capable of handling a financial shock, are progressing toward financial goals, and have the flexibility to allocate time and money to enjoyable life activities. The CFPB definition and its metric, the financial well-being scale (CFPB-FWBS), while not the sole means of interpreting

FWB, have gained acceptance and often serve as a common reference point for researchers in this arena. See Appendix A for the question used in the CFPB-FWBS.

Examining multiple indicators of FWB, including the CFPB-FWBS, we find the same drivers and demographic variables consistently contribute to FWB. These include individual discount rates, financial efficacy, financial literacy, income, and health. Personality traits—such as conscientiousness and neuroticism—influence some indicators of FWB, but not others. The discount rate and self-confidence in financial decision-making emerge as two of the most important drivers. Financial literacy interacts with these two drivers and income, amplifying their influence on FWB. Analysis of these interactions suggests alternative avenues for improving FWB of different individuals.

Data and variables

We use data from the Understanding America Study (UAS), a nationally representative Internet panel of households, conducted through the University of Southern California's Center for Economic and Social Research. The study provides access to multiple surveys conducted by numerous researchers, and it includes approximately 12,000 respondents in 5,000 households. Our sample consists of 2,887 individuals ages 44 to 76 who answered questions in the UAS 226 survey, fielded in April and May 2020. This survey is unique in that, in addition to all the usual household financial information, financial literacy, personality, risk tolerance, and other characteristics, it includes a series of questions that elicit respondents' individual discount rates following an established protocol. We also use several variables from a previous survey deployed by Clark and Mitchell (2022) in their study of household financial resilience and response to shocks, and from the UAS Comprehensive File, which merges the data from core surveys.

We analyze the relationships between the hypothesized drivers and four sets of FWB indicators: (1) composite FWB, (2) perceptions, (3) objective quantifiable outcomes, and (4) financial behaviors indicative of composite FWB.

A. FWB indicators

Prior to the widespread development of composite measures, a large literature focused on investigating separate components related to an overall level of FWB. These factors include financial behaviors, quantifiable financial outcomes, and individual survey items focused on financial perceptions. While clearly very closely related, for the purposes of this analysis we place these factors into

separate categories. For example, we label consistently spending less than one earns as a financial behavior. We categorize the accumulation of wealth as a quantifiable financial outcome. Finally, the self-assessment of

accumulating sufficient funds for future needs is generally part of FWB composite metrics. Table 1 lists dependent variables analyzed in each category of indicator and provides additional details.

TABLE 1. DESCRIPTIVE STATISTICS – INDICATORS OF FINANCIAL WELLBEING USED AS DEPENDENT VARIABLES IN THE ANALYSIS

Variable Description	Variable Name	Description	Mean	N
(1) Composite Measure of FWB				
CFPB FWB Scale	<i>CFPBScore</i>	Composite score based on 10 questions measuring perception of current and future financial situation.	58.29	2849
(2) Perceptions Indicative of FWB				
Financial Satisfaction =1	<i>FinSatisf</i>	1 = Financial satisfaction=9 or 10 on a 10 point scale, 0 otherwise.	0.294	2773
No Financial Stress =1	<i>NoFinStress</i>	1 = Reports having no financial stress, 0 otherwise.	0.601	2602
Manageable Debt =1	<i>DebtOK</i>	1 = Reports that their debt level is manageable, 0 otherwise.	0.573	2773
Retirement preparation (1-4)	<i>RetirePrep</i>	Level of perceived preparation for retirement (1 = not at all, 4 = very)	2.607	2690
(3) Observable & Quantifiable Outcomes Indicative of FWB				
Home Owner	<i>OwnHome</i>	Own home = 1, 0 otherwise	0.766	2715
Total Household Wealth	<i>TotalWealth</i>	Quintiles based on total wealth (<\$11,000, \$11,001 – \$85,000, \$85,001 – \$230,000, \$230,001 – \$592,300, >\$592,300)		2101
Nonhousing Wealth	<i>NHWealth</i>	Quintiles based on total nonhousing wealth (<-\$2,000, -\$2,001 – \$400, \$401 – \$10,000, \$10,001 – \$70,000, >\$70,000)		#REF!
(4) Behaviors Believed to Influence FWB (Yes = 1)				
Financial Planning				
Tried to calc retirement needs	<i>CalRet</i>	1= have tried to calculate retirement needs, 0 otherwise	0.45	2775
Plan Ahead	<i>PlanAhead</i>	1=somewhat agree or agree with “I normally plan ahead financially”	0.67	2886
Saving and Investing				
Emergency Fund	<i>EmergFund</i>	1=I have an emergency fund.	0.52	2773
Contributing to investment acct	<i>Invest</i>	1=currently contributing to an investment account, 0 otherwise	0.84	1787
Credit Management				
No Bad Debt	<i>NoBadDebt</i>	1=No debt other than car, student loan, business, mortgage, medical loans), 0 otherwise	0.303	2305
No Use of Alt Finance	<i>NoAltFinance</i>	1= no payday loans, tax refund advance, pawn shops, rent to own or auto title loans, 0 otherwise.	0.761	2885
No Debt Collector	<i>NoDebtCollector</i>	1 = have not been contacted by a debt collector, 0 otherwise	0.843	2887
Budgeting and Spending				
Follows a budget	<i>Budget</i>	1 = regularly follow a budget, 0 otherwise	0.561	2887
Tracks spending	<i>TrackSpend</i>	1= keeps track of spending, 0 otherwise	0.805	2887
Spend less than earn	<i>PositiveCF</i>	1 = spends less than earns, 0 otherwise	0.571	2874
No Overdrawn account	<i>NoOverdraft</i>	1= no overdrafts in the past year, 0 otherwise	0.784	2863
Seeking Help with Finances				
Has used Pers Fin Mgmt tool	<i>PFMTool</i>	1 = has used a personal financial management tool, 0 otherwise	0.093	2864
Seek financial advice	<i>Advice</i>	1 = has sought financial advice on social security or retirement issues, 0 otherwise	0.845	1786

B. Drivers of FWB

We expect that alternative indicators of FWB should be affected by the same fundamental set of drivers reflecting individual preferences, characteristics, experiences, and

circumstances. Several drivers are consistently identified in the literature as influential on various dimensions of FWB, and we briefly reference these findings below. Table 2 summarizes the drivers, controls, and additional details.

TABLE 2. DESCRIPTIVE STATISTICS – FWB DRIVERS AND CONTROLS

Variable Description	Variable Name	Mean	Minimum	Maximum	N
Time and Risk Preferences					
Elicited discount rate	<i>Rate</i>	0.42	0.15	1.15	2887
Self-assessed Risk Tolerance	<i>RiskTol</i>	3.63	0	10	2858
Big Five Personality Types					
Openness Score	<i>Openness</i>	35.97	14	50	2878
Conscientiousness Score	<i>Conscientiousness</i>	36.69	14	45	2876
Extroversion Score	<i>Extroversion</i>	26.04	8	40	2879
Agreeableness Score	<i>Agreeableness</i>	36.2	14	45	2876
Neuroticism Score	<i>Neuroticism</i>	21.04	8	40	2876
Numeracy, Fin Lit, and Efficacy					
FinLit Score (14 question- quiz)	<i>FinLit</i>	10.08	0	14	2885
Numeracy Score	<i>Numeracy</i>	50.99	33.53	70.45	2887
Confident in making financial decisions above median =1	<i>Efficacy</i>	0.51	0	1	2849
Experiences & Opportunities					
Lost job in last year =1	<i>LostJob</i>	0.11	0	1	2887
Parent past financial shock =1	<i>ParentShock</i>	0.45	0	1	2887
Good health or better =1	<i>GoodHealth</i>	0.77	0	1	2887
Demographics					
Age	<i>Age</i>	59.66	44	76	2887
Married or Cohabiting	<i>Couple</i>	0.06	0	1	2887
Retired =1	<i>Retiree</i>	1.27	1	3	2881
Currently Working for Pay =1	<i>Working</i>				2184
Education Categories					
	1 NoCollege	0.22	0	1	640
	2 SomeCollege	0.39	0	1	1118
	3 College+	0.39	0	1	1129
Race Categories					
	1 White	0.82	0	1	2359
	2 Black	0.09	0	1	259
	3 Other	0.09	0	1	263
Hispanic origin =1	Hispanic	0.06	0	1	2887
Household Income Categories					
	1 <i>Under \$15,000</i>	0.10	0	1	278
	2 <i>\$15,000 – \$24,999</i>	0.08	0	1	232
	3 <i>\$25,000 – \$34,999</i>	0.09	0	1	271
	4 <i>\$35,000 – \$49,999</i>	0.13	0	1	367
	5 <i>\$50,000 – \$74,999</i>	0.20	0	1	563
	6 <i>\$75,000 – \$99,999</i>	0.14	0	1	396
	7 <i>\$100,000 – \$149,000</i>	0.15	0	1	424
	8 <i>\$150,000 or higher</i>	0.12	0	1	351

Time and Risk Preferences. In general, high discount rates are theorized to reduce saving, leading to lower lifetime accumulation of wealth, and therefore, time preferences are also important drivers of FWB. Similarly, risk attitudes affect financial decisions and outcomes. Research shows that time preferences, risk preferences, and cognition—even when measured in adolescence or early adulthood—are predictors of future life outcomes, including those that significantly affect FWB (Almlund et al., 2011; Golsteyn, 2014). Recent studies eliciting discount rates show higher discount rates are associated with reduced health and wealth outcomes and greater likelihood of financial fragility (Huffman et al., 2019; Clark et al., 2021). Respondents who identify as patient and prepared to take risks tend to have better health and life satisfaction (Becker et al., 2012). Our data elicit respondents' individual discount rates following an established protocol in which respondents choose between receiving \$100 today versus a larger amount of money in 12 months. Based on the switching point between current and future, a discount rate is calculated. Risk tolerance is self-assessed on a scale of 1 to 10.

Financial Literacy and Numeracy. Although there is not a universal measure of financial knowledge, many recent papers use sets of survey questions designed to measure financial literacy (Lusardi & Mitchell, 2014). Research on measurement of financial literacy suggests that its effects may be intertwined with cognition and numeracy (Peters et al., 2019) and that measurements at one point in time extend to future behaviors and outcomes (Angrisani et al., 2020). In this study we measure financial literacy by respondents' scores on a 14-question quiz, ranging in this sample from 0 to 14, with an average of 10. Each respondent's numeracy is measured based on their responses to an eight-question quiz testing their understanding of mathematical concepts such as ratios and percentages.

Financial Self-Efficacy. Beyond financial literacy, researchers have developed the concept of financial self-efficacy (efficacy), defined as an individual's confidence in their ability to make financial decisions and to achieve financial goals. While the notions of objective financial literacy, objective financial knowledge and skill, and perceived financial efficacy overlap considerably, the concept of financial efficacy most heavily relies on an individual's beliefs (Hastings et al., 2013). Unsurprisingly, research shows that the best outcomes accrue to those with both knowledge and confidence (Netemeyer et al., 2018; Angrisani & Casanova, 2021; Van Rooj et al., 2012). The survey respondents are asked to assess their confidence in their ability to manage their finances on a scale of 1 to 10. The median response was 8, so we identify those who selected 9 or 10 on this question to have high financial self-efficacy.

Personality. Personality traits, predictive of various aspects of household finances, are often represented in a taxonomy known as the “Big Five” that includes openness, conscientiousness, extroversion, agreeableness, and neuroticism. Application of the Big Five traits has recently become more common in economics and finance.¹ For example, Bajtelsmit, Posey, and Tennyson (2022) document significant effects of personality type on financial decisions in the Health and Retirement Study. The personality trait of conscientiousness is negatively related to several measures of financial distress (Parise and Peijenberg, 2019; Xu et al., 2015). Others connect individual personality traits to quantifiable financial outcomes indicative of FWB, such as net worth and household asset allocation (Brown and Taylor, 2014, Bucciol and Zarri, 2017, and Nabeshima and Seay, 2015). The study by Becker et al. tests a model including personality measures along with economic preferences, finding it better explains outcomes compared to models including just one of these categories. In our survey data, respondents are scored for each personality type based on their responses to a series of questions.

Analysis and results

We use OLS for the CFPB-FWBS indicator, with the drivers and controls described in Table 2. Using the same drivers and controls, we estimate linear probability models for our dichotomous and ordinal dependent variables summarized in Table 1.

While holistic FWB has become the goal of many policy initiatives, gains in composite FWB generally result from improvements in more specific areas. For example, an individual with a low level of accumulated wealth may justifiably have a better outlook regarding their financial prospects if they have financial knowledge and confidence in their financial ability. We next apply the results from the FWB indicators and drivers, together with the previous literature, to assess how relationships between the drivers affect composite FWB. To do so, we estimate interaction effects between financial literacy and the discount rate, financial efficacy, household income, and race.

Several patterns among the explanatory variables emerge. Most importantly, we find that the discount rate, financial efficacy, and the controls of good physical health and age

1 See Almlund et al. (2016) for a thorough review.

consistently are important for nearly all indicators of FWB. Compared to the income category of \$50,000 to \$75,000, respondents earning lower incomes on average have lower indicators of FWB and those earning higher incomes have higher FWB indicators. Other drivers and controls have differential effects across the four categories. We comment on those relationships below.

Table 3 summarizes the relationships revealed by the results. The first column indicates which drivers are

statistically significantly associated with the CFPB-FWBS, and corresponding sign. The second and third columns summarize the significant drivers for FWB Perceptions and Quantitative Outcome. If the sign differs from the Composite FWB regression, it is noted in parentheses. Due to the large number of financial behaviors analyzed (13), the last column indicates the number of behaviors significantly associated with each driver.

TABLE 3. RELATIONSHIPS (POSITIVE, NEGATIVE OR STATISTICALLY INSIGNIFICANT) BETWEEN FWB INDICATORS, DRIVERS AND CONTROLS

	Composite FWB CFPB-FWBS	FWB Perceptions 4 Indicators	Quantitative Outcomes 3 Indicators	Financial Behaviors 13 Indicators
Drivers				
Discount Rate	Negative	Negative – all	Negative – all	11 negative
Efficacy	Positive	Positive – all	Positive – all	11 positive
Risk tolerance	Positive	<i>RetirePrep</i>	<i>NHWealth & Wealth</i>	4 pos & 2 neg
Financial Literacy	Insignificant	<i>NoFinStress, DebtOK, RetPrep (pos)</i>	Positive- all	9 positive
Personality Traits				
Openness	Negative	<i>NoFinStress, RetirePrep</i>	<i>NHWealth</i>	2 pos & 1 neg
Conscientiousness	Positive	<i>RetirePrep</i>	<i>NHWealth & Wealth</i>	9 positive
Extroversion	Positive	<i>DebtOK (neg)</i>	Insignificant	1 neg
Agreeableness	Insignificant	<i>RetirePrep (neg)</i>	Insignificant	1 pos & 1 neg
Neuroticism	Negative	Negative – all	<i>OwnHome</i>	2 pos & 1 neg
Lost job in past year	Insignificant	<i>FinSatis, DebtOK (neg)</i>	<i>Wealth (pos)</i>	1 positive
Family financial shock	Negative	<i>NoFinStress, DebtOK</i>	Insignificant	5 pos & 2 neg
Numeracy	Insignificant	Insignificant	Insignificant	2 pos & 1 neg
Controls				
Income	Positive	Positive – all	Positive – all	11 positive
Good health	Positive	Positive – all	Positive – all	12 positive
Age	Positive	<i>FinSatis, DebtOk, RetirePrep</i>	Positive – all	7 pos & 1 neg
Working status= not working	Positive	<i>FinSatis, RetirePrep</i>	<i>NH Wealth & Wealth</i>	2 pos & 1 neg
Gender = Male	Insignificant	Insignificant	Insignificant	1 neg
Marital status = Couple	Positive	<i>FinSatis, RetirePrep</i>	<i>OwnHome & Wealth</i>	5 positive
Education	Insignificant	<i>FinStress (neg), DebtOK (neg), RetirePrep (pos)</i>	<i>NHWealth & Wealth</i>	5 pos & 1 neg
Race/Ethnicity (REF.: White)				
Black	Insignificant	<i>DebtOK (neg)</i>	<i>OwnHome (neg) & Wealth (neg)</i>	1 pos & 3 neg
Other	Insignificant	Insignificant	Insignificant	1 pos & 2 neg
Hispanic	Insignificant	<i>DebtOK (neg)</i>	<i>OwnHome (neg) & Wealth (neg)</i>	1 pos & 1 neg

The Composite FWB column notes the signs of statistically significant drivers. The FWB Perceptions and Quantitative Outcome columns specify which indicators the drivers are significant in determining and note the sign if it differs from the Composite FWB regression. The Financial Behaviors column indicates the number of behaviors each driver is significant in explaining and the sign. Source: Authors' calculations using the Comprehensive UAS File, UAS Surveys 183 and 226. REF. indicates the reference value of categorical variables. Standard errors in parentheses.

Composite FWB: These results show strong significance for personality type: openness and neuroticism have significant negative impacts, whereas conscientiousness and extroversion are positive and significant. Higher FWB is also associated with greater risk tolerance. Respondents who experienced a family financial shock when growing up have lower FWB. Couples and those not working, including retirees, have higher FWB. Financial literacy, education, gender, race, and ethnicity are not significant in this model.

Perceptions: Differences from the analysis of composite FWB are reflected by the fact that financial literacy is significant in explaining most of the perceptions analyzed. Neuroticism is the only consistently significant personality trait. Education is positively related to feeling prepared for retirement, but surprisingly has a negative relationship with two other indicators. Variables that were significant determinants of composite FWB, but not significant in at least half the perceptions include risk tolerance, family financial shock, and marital status.

Quantitative Outcomes: As with perceptions, financial literacy positively affects all the quantitative outcomes considered in this study. An interesting result is that the personality traits of openness and conscientiousness are significantly associated with wealth, while only neuroticism is associated with home ownership. Risk tolerance, working status, and having a college degree affect wealth, but not home ownership. Homeownership and wealth are lower for Black and Hispanic respondents.

Behaviors: When significant, a higher discount rate always has a negative impact on the likelihood of positive financial behavior. The discount rate is insignificant in explaining only two dependent variables—*Advice* and *Budget*. Although seeking advice and sticking to a budget are positive actions, they may be attempts to correct past financial behaviors. Financial literacy and efficacy have positive effects on most of the financial behaviors analyzed. Conscientiousness consistently increases the odds of positive financial behavior, but the other personality traits have only inconsistent impacts on a few behaviors. In spite

of its significance in composite FWB, behaviors are largely independent of extroversion. The variables *RiskTol*, *Shock*, and *Education* are significantly related to several financial behaviors, but in some cases, they decrease the odds of good practices relative to poor practices. For example, having a higher risk tolerance increases the likelihood of having used alternative financial services and decreases the odds of setting spending budget targets, but it is associated with calculating retirement needs, maintaining emergency funds, tracking spending, and not overdrawing accounts. Demographic variables have limited effects among the different financial behavior regressions.

Interactions: The results reported in Table 3 and described above show financial literacy is significant for almost all of the indicators of FWB but not for composite FWB. To examine this in more detail, we run the model with interaction effects between financial literacy and the discount rate, financial efficacy, household income, and race. As risk tolerance has both significant negative and positive effects on different dependent variables, we compute the same set of interactions for it.

Risk tolerance is a positive and significant determinant of composite FWB only at income levels below \$15,000 and between \$25,000 and \$75,000. The relationship between risk tolerance and FWB does not depend on an individual's financial efficacy or race. In other words, increased risk tolerance increases FWB at similar rates regardless of efficacy and across the three race categories. On the other hand, financial literacy's influence depends on the other variables under consideration.

On closer inspection of financial literacy, we learn that its positive relationship with composite FWB is limited to income categories between \$50,000 and \$100,000. This suggests improvements in financial literacy are most beneficial at middle income levels. Figure 1 illustrates similar interactions in relation to efficacy, with a significant positive impact on composite FWB when efficacy is high, but essentially no relationship among those with lower efficacy.

FIGURE 1. PREDICTIVE MARGINS OF FINANCIAL EFFICACY WITH 95% CIs

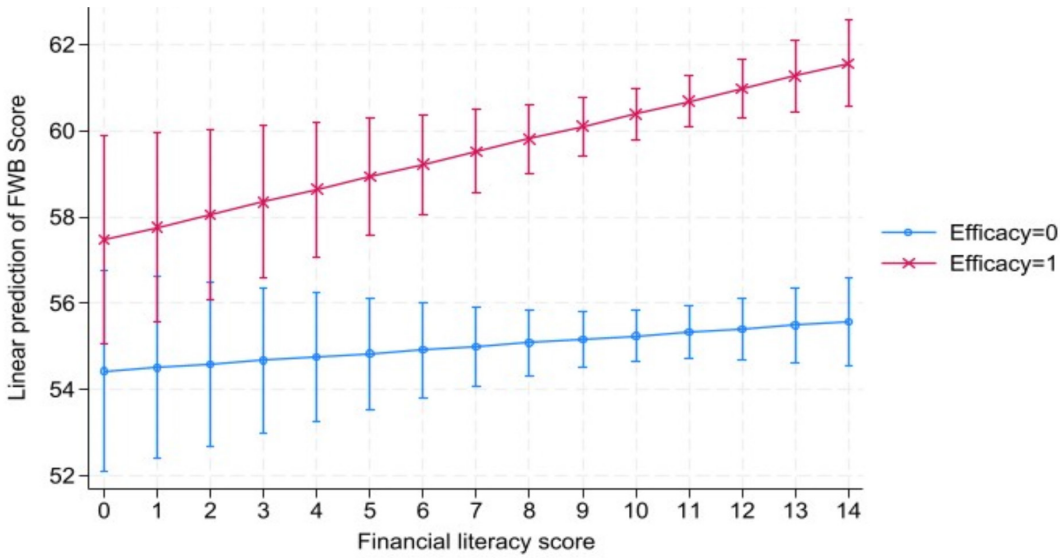
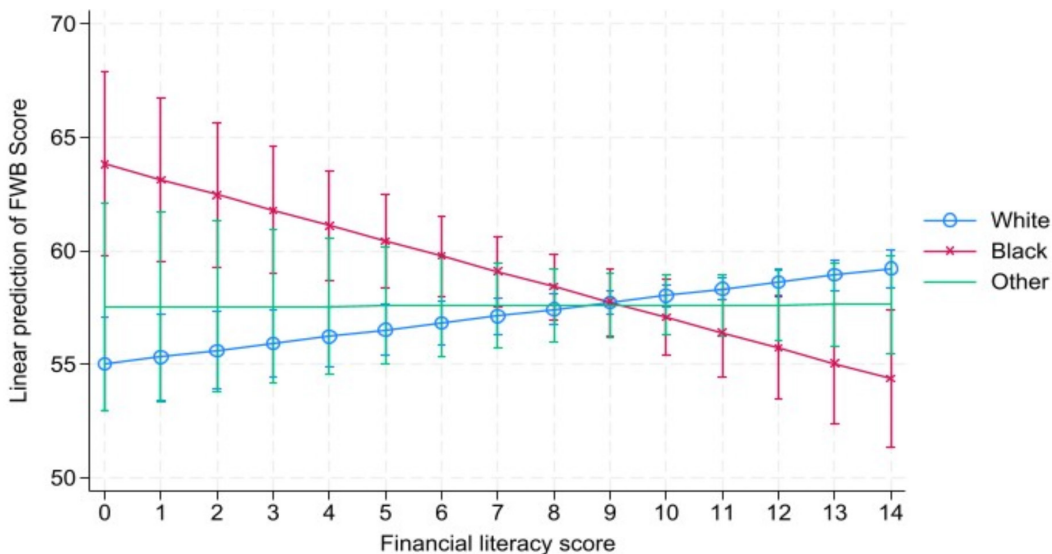


Figure 2 illustrates that the impact of financial literacy on FWB varies by race. For white respondents, financial literacy has a significant positive effect on FWB. But this relationship is insignificant for respondents in the “other” race category. Black respondents have a negative and significant relationship between financial literacy and FWB. Figure 2 shows that the difference between Black and white respondents’ FWB occurs primarily at lower levels of financial literacy, where white respondents have lower

FWB. At the median and higher levels of financial literacy, the situation is reversed, but less pronounced. Reasons for this difference may lie in larger differences in opportunities among individuals with higher financial literacy, compared to opportunities at lower levels of financial literacy. Alternatively, there may be systematic differences by race in the perceptions elicited by the CFPB-FWBS survey questions. The result is surprising and should be investigated in further research.

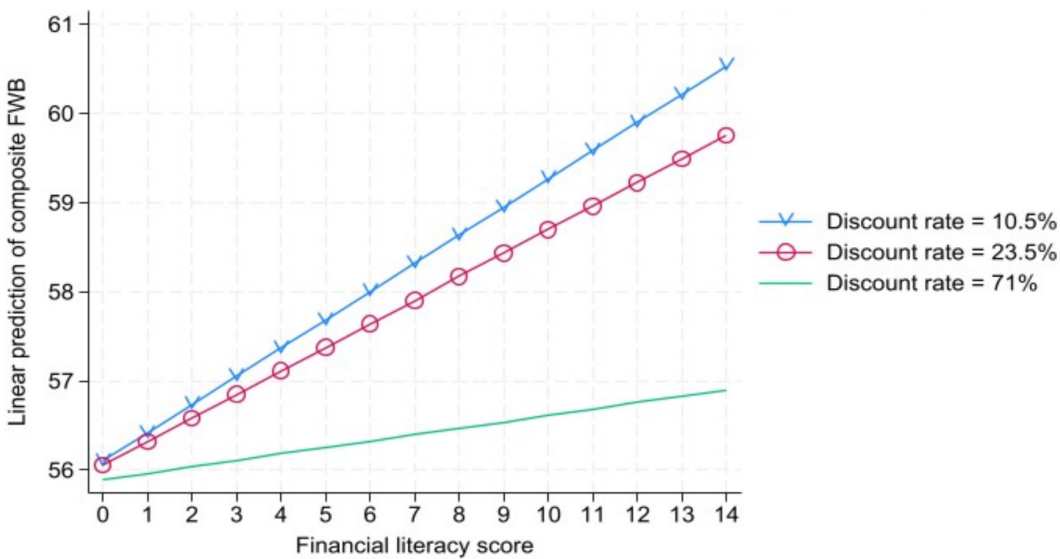
FIGURE 2. PREDICTIVE MARGINS OF RACE WITH 95% CIs



The scope of financial literacy’s impact on FWB also depends on time preferences. At higher discount rates, financial literacy has a smaller impact on FWB than it does at lower discount rates. This relationship is visually depicted in Figure 3, which displays the marginal effects of financial literacy at the discount rate at the 25th percentile (10.5%), 50th percentile (23.5%) and 75th percentile (71%). This too has important implications- financial literacy is more impactful on the FWB of individuals who have more patience. If one’s discount rate is very high, having financial knowledge does not necessarily result in directing it towards FWB improvements. Programs aimed at improving FWB via improvements in financial literacy may be more effective if tailored to the time preferences of participating individuals.

The analysis above demonstrates that composite FWB and perceptions and quantitative outcomes indicative of FWB, as well as financial behaviors, are influenced by the same set of drivers. However, analysis of the Spearman correlations between composite FWB and the other indicators of FWB confirm that although nearly all the dependent variables are correlated with composite FWB, the sizes of the correlations are not very large. Only *Retirement Confidence*, *NH Wealth*, and *EmergFund* are more than 50% correlated with Composite FWB. The size of the correlations suggests a composite measure conveys different information about an individual’s state of being that a single indicator can. While the composite and individual FWB indicators are related to each other, they do appear to capture different elements of FWB.

FIGURE 3. PREDICTIVE MARGINS OF DISCOUNT RATES AT 25TH, 50TH AND 75TH PERCENTILES



Conclusions

FWB can be measured using composite scores, individual perceptions, behaviors, and quantitative outcomes. Individual discount rates, financial efficacy, financial literacy, and income consistently impact these different FWB indicators. Risk tolerance and personality traits are less consistently significant across FWB indicators. Several drivers interact with other variables and one another in ways that have policy implications. In addition to its impact on FWB, the discount rate significantly moderates the role of financial literacy. These results suggest the individual discount rate should be given more attention in the field, becoming a consistent variable in large datasets.

Financial literacy's interaction with other drivers contributes to our understanding of this variable, which appears to be necessary but not sufficient to enhance FWB. For example, when income is high enough, FWB does not depend on financial literacy, and similarly at low levels of income,

financial literacy cannot compensate for a lack of resources. If individuals lack the confidence and/or patience to make sound financial decisions, financial literacy has limited influence on FWB. This also implies that patience and self-confidence have smaller impacts at lower levels of financial literacy. Financial literacy programs should aim to proportionally increase decision-making confidence and understanding of the time value of money. Individuals with more patience and higher efficacy may effectively apply financial knowledge in various ways that suit their individual personalities and risk attitudes, whereas those with high discount rates and/or low efficacy may benefit more from interventions.

Finally, separate indicators of FWB dimensions are significantly correlated with composite FWB and determined by the same drivers, but the correlations are lower than we initially expected. This suggests that the indicators provide unique insight into specific measures of financial health.

References

- Allgood, S., & Walstad, W. (2016, January). The effects of perceived and actual financial literacy on financial behavior. *Economic Inquiry*, 54(1).
- Almlund, M., Duckworth, A. L., Heckman, J., & Kautz, T. (2011). Personality psychology and economics. *Handbook of the Economics of Education*, 4(1).
- Angrisani, M., & Casanova, M. (2021). What you think you know can hurt you: under/over confidence in financial knowledge and preparedness for retirement. *Journal of Pension Economics and Finance*, 20(4), 516–31.
- Angrisani, M., Burke, J., Lusardi, A., & Mottola, G. (2020, November). *The stability and predictive power of financial literacy: Evidence from longitudinal data* (Working Paper No. 28185). National Bureau of Economic Research.
- Asebedo, S. & Payne, P. (2019). Market Volatility and Financial Satisfaction: The Role of Financial Self-Efficacy. *Journal of Behavioral Finance*, 20(1), 42–52. <https://doi.org/10.1080/15427560.2018.1434655>
- Bajtelsmit, V., Posey, L., & Tennyson, S. (2022, October). *Is Risk Taking in Our Nature? Genetics and Personality in Financial Decisions* (Working Paper).
- Becker, A., Deckers, T., Dohmen, T., Falk, A., & Kosse, F. (2012). The relationship between economic preferences and psychological personality measures. *Annual Review of Economics*, 4(1), 453–476.
- Brown, S., & Taylor, K. (2014, October). Household finances and the ‘Big Five’ personality traits. *Journal of Economic Psychology*, 45(4). <http://dx.doi.org/10.1016/j.joep.2014.10.006>
- Brüggen, E. C., Hogreve, J., Holmlund, M., Kabadayi, S., & Löfgren, M. (2017). Financial well-being: A conceptualization and research agenda. *Journal of Business Research*, 79(C), 228–237. <https://doi.org/10.1016/j.jbusres.2017.03.013>
- Buccioli, A., & Zarri, L. (2017, March). Do personality traits influence investors' portfolios? *Journal of Behavioral and Experimental Economics*, 68(5), 1–12. <https://doi.org/10.1016/j.socec.2017.03.001>
- Chabris, C., Laibson, D., Morris, C., Schuldt, J., & Taubinsky, D. (2009, January). Individual laboratory-measured discount rates predict field behavior. *Journal of Risk and Uncertainty*, 37(2–3), 237–269. <http://dx.doi.org/10.1007/s11166-008-9053-x>
- Clark, R., Lusardi, A., Mitchell, O. S., & Davis, H. (2021). Factors contributing to financial well-being among Black and Hispanic Women. *The Journal of Retirement*, 9(1), 71–97. <http://dx.doi.org/10.2139/ssrn.3792558>
- Clark, R., & Mitchell, O. (2022, May). Americans' financial resilience during the pandemic. *Financial Planning Review*, 5(2–3). <https://doi.org/10.1002/cfp2.1140>
- Consumer Financial Protection Bureau. (2017, September). *Financial well-being in America*. https://files.consumerfinance.gov/f/documents/201709_cfpb_financial-well-being-in-America.pdf
- Fidelity International and Fidelity Investments Workplace Investing Global Leadership. (2020, December). *Global Financial Wellness Survey: What it means to be financially fit. A comprehensive measurement framework*. <https://s3-eu-west-1.amazonaws.com/eumultisitev4prod-live-eb461540d2184169bb77db2b062d9318-f268f99/global-wi/pdfs/global-financial-wellness-survey-report-final-dec20.pdf>
- Garon, T., Dunn, A., Celik, N., and Robb, H. (2020, October). *The U.S. financial health pulse: 2020 trends report*. Financial Health Network. <https://cfsi-innovation-files-2018.s3.amazonaws.com/wp-content/uploads/2020/10/26135655/2020PulseTrendsReport-Final-1016201.pdf>
- Golsteyn, B., Gröqvist, H., & Lindahl, L. (2014, March). Adolescent time preferences predict lifetime outcomes. *The Economic Journal*, 124(580), F739–F761. <https://doi.org/10.1111/eoj.12095>
- Hastings, J., Madrian, B., Skimmyhorn, W. (2013, April). Financial literacy, financial education, and economic outcomes. *Annual Review of Economics*, 5, 347–373. <http://dx.doi.org/10.1146/annurev-economics-082312-125807>
- Huffman, D., Maurer, R., & Mitchell, O. (2019). Time discounting and economic decision-making in the older population. *Journal of the Economics of Ageing*, 14(2). <http://dx.doi.org/10.1016/j.jeoa.2017.05.001>
- Lusardi, A., & Mitchell, O. S. (2014, March). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44. <https://doi.org/10.1257/jel.52.1.5>

-
- Merkoulova, Y., & Veld, C. (2022). Stock return ignorance. *Journal of Financial Economics*, *144*(3), 864–884. <https://doi.org/10.1016/j.jfineco.2021.06.016>
- Merkoulova, Y., & Veld, C. (2022, March). Does it pay to invest? The personal equity risk premium and stock market participation. *Journal of Banking and Finance*, *136*, 1–14. <https://doi.org/10.1016/j.jbankfin.2021.106220>
- Nabeshima, G., & Seay, M. (2015). Wealth and personality: Can personality traits make your client rich? *Journal of Financial Planning*, *28*(7), 50–57.
- Netemeyer, R., Warmath, D., Fernandes, D., & Lynch, J. G. Jr. (2018, June). How am I doing? Perceived financial well-being, its potential antecedents, and its relation to overall well-being. *Journal of Consumer Research*, *45*(1), 68–89. <https://doi.org/10.1093/jcr/ucx109>
- Peters, E., Tomkins, M. K., Knoll, M., Ardoin, S., Shoots-Reinhard, B., & Meara, A. S. (2019, September). Despite high objective numeracy, lower numeric confidence relates to worse financial and medical outcomes. *Proceedings of the National Academy of Sciences*, *116*(39), 19386–19391. <https://doi.org/10.1073/pnas.1903126116>
- Parise, G., & Peijnenburg, K. (2019, February). Noncognitive abilities and financial distress: Evidence from a representative household panel. *The Review of Financial Studies*, *32*(10), 3884–3919. <https://doi.org/10.1093/rfs/hhz010>
- Van Rooij, M., Lusardi, A., & Alessie, R. (2012, May). Financial Literacy, Retirement Planning and Household Wealth. *The Economic Journal*, *122*(560), 449–478. <https://doi.org/10.1111/j.1468-0297.2012.02501.x>
- Xu, Y., Beller, A., Roberts, B., Brown, J. (2015, September). Personality and young adult financial distress. *Journal of Economic Psychology*, *51*(1), 90–100. <https://doi.org/10.1016/j.joep.2015.08.010>

Appendix A

Questions used to construct the CFPB-FWB scale

How well does this statement describe you or your situation?

1. I could handle a major unexpected expense.
2. I am securing my financial future.
3. Because of my money situation, I feel like I will never have the things I want in life.
4. I can enjoy life because of the way I'm managing my money.
5. I am just getting by financially.
6. I am concerned that the money I have or will save won't last.

How often does this statement apply to you?

7. Giving a gift for a wedding, birthday or other occasion would put a strain on my finances for the month
8. I have money left over at the end of the month.
9. I am behind with my finances.
10. My finances control my life.

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