

## Assessing the Short-Term Stability of Financial Well-Being in Low- and Moderate-Income Households

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### Introduction

A growing body of research demonstrates that U.S. households experience a high degree of volatility in their finances. This volatility can take the form of large swings in month-to-month income, spells of unemployment, and incurring unexpected expenses.<sup>1</sup> Beyond being difficult to predict, these income and expense shocks are costly as well, with one survey finding that the most expensive shock experienced by the median U.S. household cost roughly half of one month's income.<sup>2</sup>

This financial volatility disproportionately affects low- to moderate-income (LMI) households;<sup>3</sup> a population that often lacks the resources to manage this volatility. For example, research from the Survey of Household Economics and Decisionmaking finds that roughly two-thirds of LMI households could not manage a modest \$400 expense without taking out a loan they could not pay off immediately.<sup>4</sup> This lack of a buffer against financial volatility is to some degree unsurprising, as the budgets of LMI households are largely taken up by essential expenses.<sup>5</sup>

Yet even as households experience high degrees of financial volatility and often lack sufficient buffers against this volatility, there is an open question about the impact this volatility has on households' sense of well-being. U.S. households report finances as their primary source of stress,<sup>6</sup> but they also commonly report that they lead comfortable financial lives.<sup>7</sup> These results would seem to indicate something of a disconnect between common measures of subjective and objective financial well-being and speak to the need for more research to understand the drivers of household perceptions of financial well-being.

To that end, the Social Policy Institute at Washington University in St. Louis is publishing a series of briefs on financial well-being in LMI households. Our measure of financial well-being comes from the Bureau of Consumer Financial Protection's (BCFP, formerly the Consumer Financial Protection Bureau) recently-developed financial well-being scale. The BCFP defines financial well-being as representing "financial security and financial freedom of choice, in the present and in the future."<sup>8</sup> This definition of financial well-being directly informed the development of the BCFP's Financial Well-Being Scale, which provides a reliable and valid measure of subjective financial well-being.<sup>9</sup>

The first brief in this series explored how financial well-being differed between LMI households and the general population. This brief, the second in the series, examines how financial well-being changes over time in a sample of LMI respondents. Using longitudinal survey data matched with administrative tax data, this brief addresses the following questions:

- How stable is financial well-being in LMI households over a six-month time period?
- Do household characteristics predict stability of financial well-being over a six-month period?
- What are the key predictors of financial well-being six months after tax filing in LMI households?

*Key Findings:*

- Financial well-being is very stable in the short term and does not vary substantially across most demographic and financial characteristics.
- Financial well-being observed during tax filing appeared to be the strongest predictor of financial well-being six months later.
- Black Non-Hispanic households tended to experience positive changes in financial well-being over time, relative to White Non-Hispanic households.
- An inability to access \$2,000 in emergency funds and being self-employed full-time at tax filing were negatively associated with financial well-being six months later.

Data for this brief come from two waves of the 2017 HFS. The final sample consists of 6,664 LMI households that are observed at two points in time throughout a year. To make our findings representative of the LMI population in the U.S., all results use weights generated from the Census Bureau's 2016 American Community Survey.

We measure financial well-being using the abbreviated 5-item version of the BCFP's Financial Well-Being Scale.<sup>11</sup> The calculated financial well-being score ranges between 14 and 95 points, where higher scores correspond to a higher level of financial well-being.<sup>12</sup> The abbreviated scale consists of the following five questions:<sup>13,14</sup>

- "Because of my money situation, I feel like I will never have the things I want in life"
- "I am just getting by financially"
- "I am concerned that the money I have or will save won't last"
- "I have money left over at the end of the month"
- "My finances control my life"

## Research Background and Data

This analysis uses data obtained through the Refund to Savings (R2S) initiative, an ongoing research partnership between Washington University in St. Louis, Duke University, and Intuit Inc., the makers of TurboTax. The initiative primarily aims to encourage LMI tax filers to save their tax refunds by incorporating the insights of behavioral economics into TurboTax Freedom Edition (TTFE), a free tax filing software platform available to eligible LMI households.<sup>10</sup> Households that earned \$33,000 or less in adjusted gross income or qualified for the Earned Income Tax Credit in 2017 could file taxes in TTFE, and looser income requirements were applied to active duty military households.

In addition to relying on administrative tax records on LMI households, we also administer two waves of a Household Financial Survey (HFS) as part of the R2S initiative: a random sample of TTFE tax filers is invited to participate in the first wave of the HFS immediately after tax filing (HFS wave 1), and those who complete the first survey iteration are re-contacted six months later for a follow-up survey (HFS wave 2). Each wave of the HFS collects comprehensive information about TTFE filers' financial situations, behaviors, and experiences to complement administrative data.

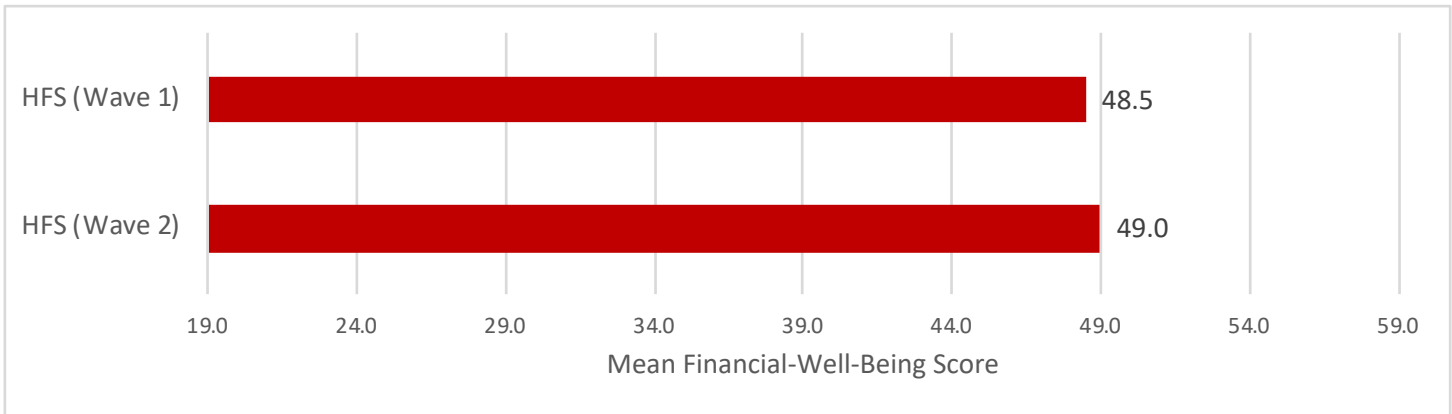
## Results

### *How stable is financial well-being in LMI households over a six-month period?*

We first examined how financial well-being in LMI households changed during the six-month period after tax filing. As Figure 1 shows, the weighted financial well-being score averaged 48.5 points at the time of tax filing and 49.0 points six months after that, a statistically insignificant difference. This indicates that financial well-being is on average very stable over six months. This is further demonstrated by Figure 2, which examines the distribution of the changes in financial well-being scores over time. The large majority of respondents experienced changes in financial well-being that ranged between -10 and +10 points, though there was still a considerable portion of respondents who experienced larger swings.

**Figure 1.**

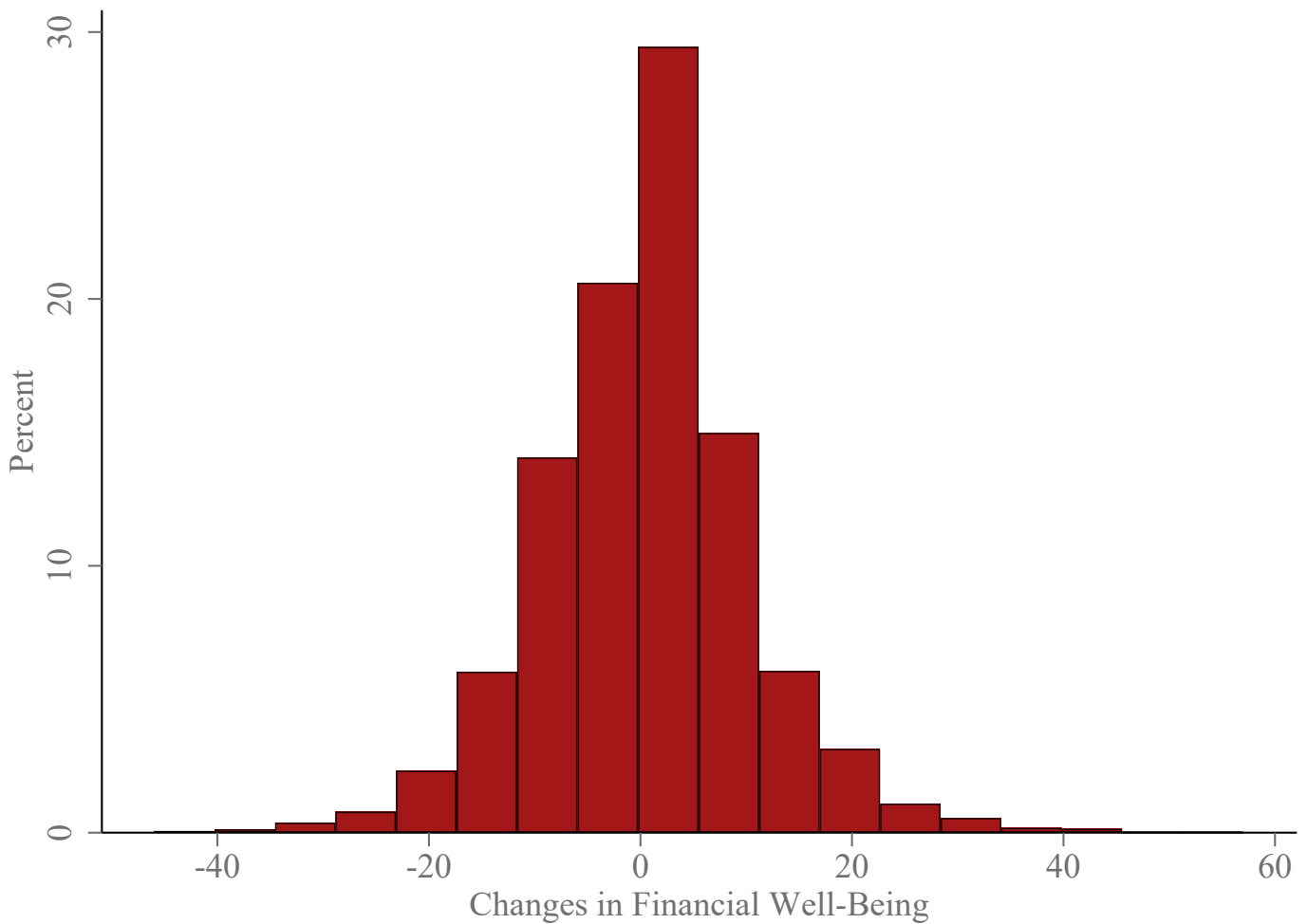
*Mean Financial Well-Being in LMI Households, at Tax Filing and Six Months After Tax Filing*



Notes: Weighted means. N=6,664.

**Figure 2.**

*Distribution of Six-Month Changes in Financial Well-Being among LMI Households*



Notes: Weighted means, N=6,664.

### *Do household characteristics predict stability of financial well-being over a six-month period?*

Tables 1 and 2 assess the changes in reported financial well-being over the course of six months by key demographic and financial characteristics of LMI households, respectively, as measured at the time of tax filing.<sup>15</sup> Consistent with the general trend observed above, the reported differences in financial well-being scores tend to be small and mostly statistically insignificant.

With regard to demographic characteristics, financial well-being increased by 1.1 points over the course of six months for female respondents ( $p < .01$ ) and decreased by 0.4 points for males, though the latter difference was not statistically significant. Financial well-being scores did not vary much over time for different levels of educational attainment, although we observed a 0.9-point increase in financial well-being over time for respondents with a college degree ( $p < .05$ ). Financial well-being was generally stable for racial/ethnic subgroups, though Non-Hispanic Black LMI households experienced an increase in average financial well-being scores of 3.2 points between the first and second survey waves ( $p < .01$ ). Compared to the time of tax filing, single respondents reported a one point higher mean financial well-being score six months later ( $p < .01$ ). Households that were married/living with a partner or widowed experienced slight reductions in average financial well-being (by 0.1 and 0.6 points, respectively), and divorced/separated respondents reported 1.1 point higher average financial well-being scores during this time period, although these differences were not statistically significant. We also did not observe significant changes in financial well-being over time for different age groups, or for LMI student and non-student populations. Households without children under 18 reported a 0.7-point increase in average financial well-being during a six-month period ( $p < .01$ ); while the mean financial well-being score for households with children under 18 was also 0.6 points higher in the second wave of the survey, this difference was not statistically significant. Financial well-being scores for respondents with health insurance in the first survey wave grew by 0.6 points ( $p < .05$ ), while reductions in

financial well-being for uninsured respondents were statistically insignificant. No significant changes were found by respondents' health status.

Table 2 examines the relationship between financial characteristics and financial well-being. In terms of employment, part-time employees experienced an increase in average financial well-being of 0.7 points in the six months following the first survey wave ( $p < .05$ ). Full-time self-employed tax filers saw slight yet insignificant reductions in mean financial well-being scores (by 1.8 points) during this time period, and part-time self-employed respondents, full-time employees, and unemployed respondents experienced small and also insignificant increases in mean financial well-being scores over time (by 0.7, 0.2, and 0.5 points, respectively).

On average, financial well-being scores increased by one point over the course of six months for households with annual gross incomes between \$20,000 and \$29,999 ( $p < .05$ ). In contrast, those with annual gross incomes of \$50,000 and above saw a 1.9-point reduction in reported financial well-being over time, though this group comprised a small share of our LMI sample and the difference was not statistically significant. There were no significant changes over time in reported financial well-being for homeowners and non-homeowners, as well as households that experienced income volatility six months prior to filing their taxes and those that did not.

Interesting findings were observed for LMI households' ownership of liquid assets and access to liquidity. On average, households with the lowest levels of liquid savings (less than \$250) at tax time experienced small and significant increases in financial well-being (by 1.1 points;  $p < .05$ ) six months after filing taxes. The changes in mean financial well-being scores for those with higher asset levels did not follow a linear pattern and they were all statistically insignificant. Notably, households that indicated being unable to come up with \$2,000 in an emergency at tax filing reported positive changes in their financial well-being six months later: for those who probably and certainly could not come up with \$2,000 in emergency funds, average financial well-being scores increased by 1.2 points ( $p < .05$ ) and 1.4

**Table 1.***Demographic Characteristics and Changes in Financial Well-Being Over Time*

Characteristics	N	HFS Wave 1 Mean FWB	HFS Wave 2 Mean FWB	Diff.	Sig.
Sample	6,664	48.5	49	0.5	
Gender					
Female	3,673	47.9	49.0	1.1	**
Male	2,990	49.5	49.1	-0.4	
Education					
Some high school	130	52.6	52.6	0.0	
High school diploma	554	47.8	48.8	1.0	
Some college	2,006	46.8	46.9	0.1	
College degree	2,981	47.9	48.8	0.9	*
Grad/professional degree	993	48.3	49.0	0.7	
Race/ethnicity					
Non-Hispanic White	4,988	48.0	48.2	0.2	
Non-Hispanic Black	355	48.9	52.1	3.2	**
Non-Hispanic Asian	448	53.3	53.7	0.4	
Hispanic	501	47.3	46.5	-0.8	
Other or multiracial non-Hispanic	372	47.9	48.3	0.4	
Marital status					
Married/living with partner	2,022	47.3	47.2	-0.1	
Single	3,776	48.1	49.1	1.0	**
Divorce/separated	717	45.6	46.7	1.1	
Widowed	148	56.7	56.1	-0.6	
Age					
Ages 18 to 24	1,862	51.5	51.7	0.2	
Ages 25 to 34	2,427	45.3	45.6	0.3	
Ages 35 to 44	859	43.1	44.1	1.0	
Ages 45 to 54	592	43.0	43.4	0.4	
Ages 55 to 64	556	45.3	46.8	1.5	
Ages 65 and above	368	57.5	57.4	-0.1	
Current student status					
Yes	2,178	51.2	51.2	0.0	
No	4,486	48.0	48.6	0.6	
Have children under 18					
Yes	304	45.0	45.6	0.6	
No	5,393	49.5	50.2	0.7	**
Health status					
Good health	5,189	51.1	51.5	0.4	
Poor health	1,474	39.8	40.6	0.8	
Health insurance					
Yes	6,075	49.1	49.7	0.6	*
No	589	43.5	43.2	-0.3	

Notes: Weighted results. Weighted Ns of each characteristic do not necessarily sum to the total population weighted N. FWB=financial well-being, Diff.: Mean FWB HFS (Wave 2)-Mean FWB HFS (Wave 1), Sig.: Significant differences between two time points as measured through paired t-tests. \* $p < .05$ ; \*\* $p < .01$ .

**Table 2.***Financial Characteristics and Changes in Financial Well-Being Over Time*

Characteristics	N	HFS Wave 1 Mean FWB	HFS Wave 2 Mean FWB	Diff.	Sig.
Sample	6,664	48.5	49.0	0.5	
Employment status					
Self-employed full time	291	45.5	43.7	-1.8	
Self-employed part time	247	45.1	45.8	0.7	
Employed full time	1,875	48.1	48.3	0.2	
Employed part time	2,727	45.1	45.8	0.7	*
Unemployed	1,523	52.6	53.1	0.5	
Annual gross income					
Less than \$20,000	4,212	49.3	49.6	0.3	
\$20,000-\$29,999	1,696	46.8	47.8	1.0	*
\$30,000-\$49,999	736	47.4	48.0	0.6	
\$50,000 and above	20	57.3	55.4	-1.9	
Own home					
Yes	1,183	51.1	51.9	0.8	
No	3,622	45.5	45.7	0.2	
Income volatility					
Roughly the same each month	4,413	50.2	50.7	0.5	
Some unusually high/low months	1,510	45.1	45.5	0.4	
Varies quite a bit	737	43.0	43.2	0.2	
Liquid savings					
Less than \$250	1,427	40.3	41.4	1.1	*
\$250-\$499	530	43.1	43.2	0.1	
\$500-\$999	689	45.0	46.2	1.2	
\$1,000-\$4,999	2,088	50.6	50.5	-0.1	
\$5,000-\$19,999	1,445	56.4	56.1	-0.3	
\$20,000 and above	485	61.6	62.8	1.2	
Access to \$2,000 in an emergency					
Certainly could come up with \$2k	2,608	58.2	58.2	0.0	
Probably could come up with \$2k	1,499	48.8	48.5	-0.3	
Probably could not come up with \$2k	1,217	44.6	45.8	1.2	*
Certainly could not come up with \$2k	1,340	37.7	39.1	1.4	**
Have friends/family safety net					
Yes	3,789	52.9	52.9	0.0	
No	2,870	44.5	45.4	0.9	*
Own checking/savings account					
Yes	6,509	48.8	49.3	0.5	
No	151	42.3	43.5	1.2	

Notes: Weighted results. Weighted Ns of each characteristic do not necessarily sum to the total population weighted N. FWB=financial well-being, Diff.: Mean FWB HFS (Wave 2)-Mean FWB HFS (Wave 1), Sig.: Significant differences between two time points as measured through paired t-tests. \* $p<.05$ ; \*\* $p<.01$ .

points ( $p < .01$ ), respectively, over the course of six months.

Finally, LMI respondents who could not rely on their friends or family for financial support at the time of tax filing reported that their financial well-being scores increased by 0.9 points ( $p < .05$ ) over a six-month period, and average financial well-being remained unchanged for those who had this safety net. No significant changes were found by respondents' banking status.

### *What are the key predictors of financial well-being six months after tax filing in LMI households?*

The above analyses outline general relationships between changes in financial well-being and household demographic and financial characteristics. These analyses, however, do not allow us to tease out the relationship between specific household characteristics and financial well-being while accounting for other factors. For example, the above analyses cannot disentangle the relationship between liquid assets and financial well-being independent of other factors like the relationship between education and financial well-being. Given that many household characteristics may be interrelated, this section presents a multiple linear regression that explores how household characteristics measured at the time of tax filing were associated with financial well-being six months after tax filing, while controlling for other factors.<sup>16</sup>

Figures 3a and 3b present the results of this regression, with each point estimate describing the change in financial well-being associated with a given characteristic.

Similar to the trends found in the descriptive analysis, the regression results show that after controlling for other factors, most demographic and financial characteristics observed in the first wave of the survey were not predictive of financial well-being scores reported in the second wave of the survey. One notable exception to this stability is the trend for Non-Hispanic Black LMI households, which reported a change in financial well-being 4.58 points ( $p < .01$ ) higher than Non-Hispanic White LMI households six months after filing taxes; regression coefficients for

other racial/ethnic subgroups were not statistically significant. Having good health status was also associated with a 1.82 point ( $p < .05$ ) increase in the wave 2 financial well-being score, compared to those with poor health status. Financial well-being scores in the second survey were 0.35 point lower for males relative to females ( $p < .001$ ), holding other factors constant. As for other demographic factors, regression coefficients on respondents' educational attainment, student status, age, marital status, the presence of children under 18, and health insurance ownership at wave 1 were not statistically significant.

In terms of financial characteristics, other things being equal, each additional point increase in financial well-being score at wave 1 was associated with a 0.66 unit increase in the financial well-being score at wave 2 ( $p < .001$ ). Compared to LMI individuals who were unemployed at the time of tax filing, part-time self-employed people and part- and full-time employees had statistically similar levels of financial well-being six months after completing taxes, and being self-employed full-time in the first survey wave was associated with a 3.63 point ( $p < .01$ ) reduction in financial well-being in the second wave of the survey.

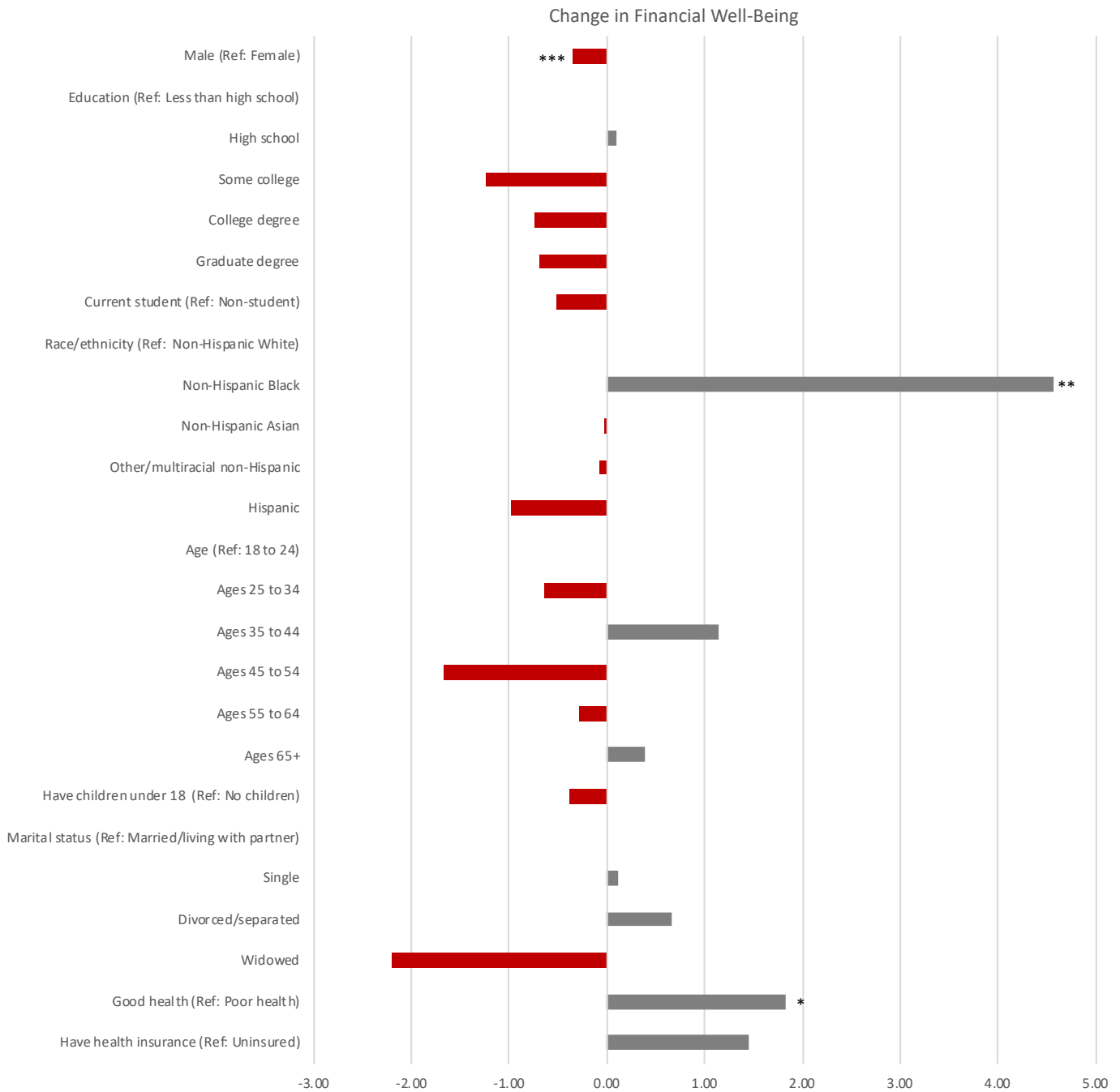
Notably, households that were liquidity constrained at the time of tax filing appeared to experience lower levels of financial well-being six months later: holding other variables constant, being certainly unable to come up with \$2,000 in an emergency was associated with a reduction of 3.77 points ( $p < .01$ ) in financial well-being when compared to those who could certainly come up with \$2,000 in an emergency. This differs from the earlier descriptive analysis, which found that households who were unable to come up with \$2,000 in an emergency experienced modest increases in financial well-being. Additionally, compared to those who were definitely certain of their ability to come up with \$2,000 in emergency funds, being somewhat certain was associated with a 2.17 point decline ( $p < .05$ ) in average financial well-being; this finding resembles the trend initially observed in the descriptive analysis.

Financial well-being reported in the second survey wave generally increased with annual gross

income, though the coefficients were not statistically significant at the 5% level. We also observed that those who experienced income volatility six months prior to tax filing, on average, did not experience significant changes in financial well-being six months after tax filing. Similarly, having family and

friends as a safety net, being banked, and having a credit card—all measured in the first wave of the survey—were not associated with statistically significant changes in financial well-being in the second survey wave.

**Figure 3a.**  
*Key Demographic Predictors of Changes in Financial Well-Being*



Notes: Coefficients estimated by weighted OLS regression with robust standard errors, N=5,279. Results control for an array of financial characteristics (see Figure 3b), tax filing date, total tax refund, and state of residence, all measured at the time of tax filing. Ref.=Reference group. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

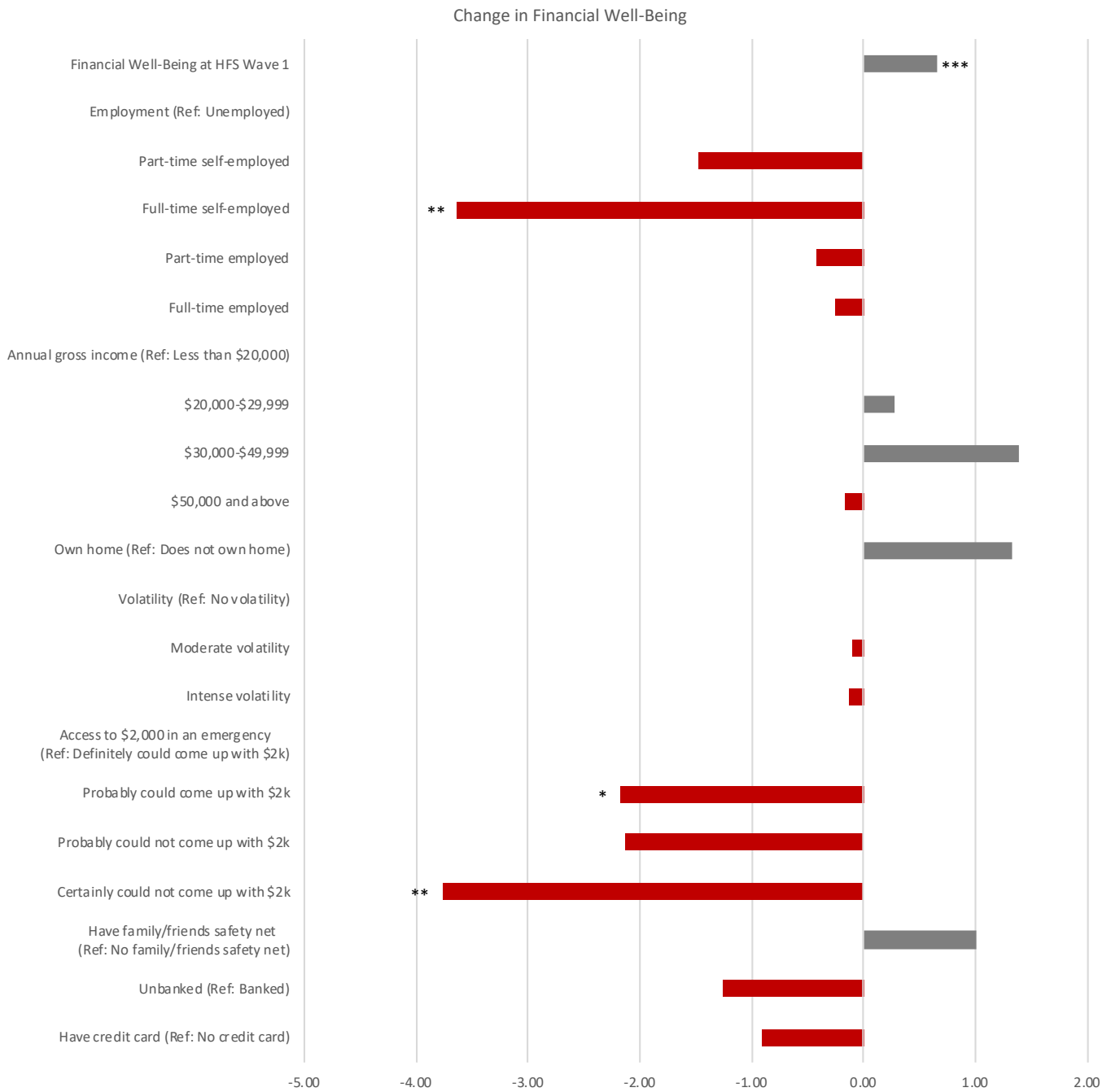


## Conclusion and Implications

The first brief in this series on financial well-being in LMI households looked at how financial well-being in LMI households differed from that of the general population, and how these differences intersected

with household characteristics. It found, among other things, that race and ethnicity, age, access to emergency resources, ability to rely on friends and family, and health were all linked to levels of reported financial well-being. This brief, by contrast, provides the first examination of the stability of

**Figure 3b.**  
Key Financial Predictors of Changes in Financial Well-Being



Notes: Coefficients estimated by weighted OLS regression with robust standard errors, N=5,279. Results control for an array of demographic characteristics (see Figure 3a), tax filing date, total tax refund, and state of residence, all measured at the time of tax filing. Ref.=Reference group. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

financial well-being over a short period of time, and finds that reported financial well-being in LMI households was roughly stable through the year and did not vary substantially across most household characteristics.

This stability has a number of implications for both research and practice. First, the stability of financial well-being for the average LMI household provides evidence of the measurement validity of the relatively new financial well-being scale. Ideally, a construct like financial well-being should not differ substantially based on when a survey is administered; holding all other factors constant, a person's financial well-being should not differ throughout the year. This is what we observe in our study. The stability of this measure may further make it an attractive outcome measure for researchers, financial capability professionals, and policymakers looking to assess the impacts of different programs on their target populations.

At the same time, there are also key differences that we observe in financial well-being changes across households. The first concerns the relationship between access to \$2,000 in an emergency at wave 1 and financial well-being at wave 2. Relative to those that were certain they could access this level of emergency resources, those who certainly could not had significantly lower rates of financial well-being six months later, controlling for other factors. This relationship shows how assets, liquidity, and other resources not only improve households' sense of well-being at the time (as we observed in the first brief), but also how they can help stabilize well-being in the future.

The second interesting relationship is the decline in financial well-being for those that reported being self-employed full-time at wave 1, relative to the unemployed. This difference is not observed for traditionally-employed households. It is somewhat unsurprising that self-employed households, who may often have less stable income flows, would experience higher levels of volatility in their sense of financial well-being than other households. However, what is surprising is that full-time self-employed households exhibit a notable average decline between wave 1 and wave 2. In addition, while the negative changes in financial well-

being are observed for part-time self-employed households relative to the unemployed, they are less precise and do not show statistical significance. It is possible that there is a seasonal component to this relationship, and full-time self-employed households struggle more in the wave 2 period (roughly six months after tax filing). Or, alternatively, that full-time self-employed households generate more income during the winter or over the holidays. At the same time, part-time self-employed individuals may also be engaged in other activities (e.g., hold second employment, be enrolled in school, or be retired), which could stabilize their sense of financial well-being. Regardless of the explanation, this fluctuation in the financial well-being of the full-time self-employed calls for more research.

The other interesting relationship in this study, which also calls for further research, is the relationship between race/ethnicity and changes in financial well-being. Relative to White Non-Hispanic households, Black Non-Hispanic households exhibit significant increases in financial well-being over the six-month period; a relationship not observed for other races or ethnicities. This is particularly interesting because Black and White households have roughly the same reported financial well-being at wave 1 of the survey. While understanding the drivers of this difference is beyond the scope of this study, this difference does have implications for financial capability-focused organizations: Any measurements of financial well-being should appropriately control for the race and ethnicity of respondents to avoid any potential bias.

In general, the ability to longitudinally assess subjective financial well-being can have important implications for practice. While financial well-being was relatively stable for the vast majority of households, and most demographic and financial characteristics did not have a substantial influence on financial well-being changes in the short run, many households still experienced more extreme fluctuations in their scores. This calls into question what segments of tax filers faced large changes in their subjective financial well-being and what financial circumstances and events contributed to these swings. Measuring the sense of financial well-being at two points in time could help social

workers and financial counselors better identify individuals who report experiencing severe financial distress. And understanding what factors drive these sizeable changes—and particularly the sizeable reductions—in financial well-being could help social service providers better serve these financially volatile clients. The next brief in this series tackles the latter question by examining the extent to which different financial experiences and circumstances corresponded to the changes in financial well-being.

Despite the noticeable differences observed in this study, the financial well-being scale developed and advocated for by the BCFP is largely stable over time, and this stability is exhibited across a diverse array of household characteristics. This stability speaks to the strength of the scale and its utility for practitioners and policymakers looking to understand the financial well-being of their populations and the potential impacts their programs may have on this measure.

## End Notes

<sup>1</sup> Farrell & Grieg (2016); Hannagan & Morduch (2015).

<sup>2</sup> Pew Charitable Trusts (2015).

<sup>3</sup> Leete & Bania (2010).

<sup>4</sup> Board of Governors of the Federal Reserve System (2016).

<sup>5</sup> Ibid.

<sup>6</sup> Anderson et al. (2015).

<sup>7</sup> Board of Governors of the Federal Reserve System (2018).

<sup>8</sup> BCFP (2015, p. 7).

<sup>9</sup> BCFP (2017).

<sup>10</sup> TurboTax Freedom Edition is offered to LMI households as part of the IRS Free File Alliance (<https://freefilealliance.org/>).

<sup>11</sup> The BCFP has designed two versions of the financial well-being scale—the abbreviated (5-item) and standard (10-item) version—that are highly correlated and directly comparable to each other.

<sup>12</sup> The process of deriving financial well-being scores from the HFS response values followed the procedure identified in the BCFP's technical report, which involves applying a software-based scoring method relying on Item Response Theory (BCFP, 2017).

<sup>13</sup> BCFP (2015, p. 29).

<sup>14</sup> Given statements are measured on the 5-item Likert scale. Response categories for the first three questions are “Completely, Very well, Somewhat, Very little, Not at all,” and responses for the last two questions are “Always, Often, Sometimes, Rarely, Never.”

<sup>15</sup> Comparison of financial well-being scores across different characteristics at the time of tax filing is summarized in Sun et al. (2018).

<sup>16</sup> The regression model also controls for tax filing date, total tax refund, and state of residence in order to account for potential timing, tax, or geographical characteristics that may influence financial well-being.

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## Disclaimer

Statistical compilations disclosed in this document relate directly to the bona fide research of, and public policy discussions concerning, financial security of individuals and households as it relates to the tax filing process and more generally. Compilations follow Intuit's protocols to help ensure the privacy and confidentiality of customer tax data.

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