

# **Financial Shocks and Financial Well-Being: Which Factors Help Build Financial Resiliency in Lower-Income Households?**

**Research Brief**

Final

**By Michal Grinstein-Weiss and Sam Buje,  
Social Policy Institute, Washington University in St. Louis**

## **Disclaimer**

This Research Brief was prepared pursuant to a contract with the Consumer Financial Protection Bureau (“The Bureau”). Any opinions or views in the Research Brief are the author’s own and may not represent the Bureau’s views. Nothing in this Research Brief constitutes guidance or advice from the Bureau.

## **1. Executive Summary**

---

Financial shocks are common in the United States, especially among low- and moderate-income (LMI) households (Pew Charitable Trusts, 2015; Acs, Loprest, Nichols, 2009; Chase et al., 2011). These shocks have been linked to increases in material hardships like skipped bill payments, forgone medical care, and food insecurity. Although they experience shocks at higher rates than the rest of the population, LMI households are generally less-equipped to handle shocks since they tend to hold less in liquid savings (BGFRS, 2016; Collins & Gjertson, 2013) and often lack access to affordable credit (Barr, 2004). With fewer resources to provide a financial buffer, these LMI households are often at an acute risk of experiencing hardships in the event of a shock.

While previous research has established a strong connection between financial shocks and hardships, there exists relatively little research that explores the impacts of financial shocks and the individual's sense of financial well-being. To that end this brief investigates two previously unanswered questions:

- (1) Which types of financial shocks have the greatest impacts on the self-assessed financial well-being of LMI households?
- (2) To what extent do household income, liquid savings, and social networks mitigate the negative effects of financial shocks on the financial well-being of LMI households?

The analysis uses data from the 2018 Household Financial Survey (HFS). The HFS is a two-wave longitudinal survey administered to LMI tax filers at the time of tax filing and six months later. The survey captures a wide array of financial indicators, including the Consumer Financial Protection Bureau's (CFPB's) 10-item financial well-being scale and the experience of financial shocks such as income, expense, and medical shocks. To assess the impact of these shocks on financial well-being, we estimate a series of regression models using household fixed effects. We further investigate the degree to which access to different types of liquidity can offset the impact of these shocks by conducting subsample analyses based on the households' incomes, liquid assets, and ability to borrow money from social networks.

We find that financial shocks had relatively small impacts on financial well-being over the six month observation period. Income shocks, which consistently had the largest impact of the three shocks we examined, reduced financial well-being by 2.3 points. This translates to just 18 percent of a standard deviation. The impact of expense shocks was even more modest (a 1.0-point reduction) than the impact of income shocks, and the impact of medical shocks was statistically insignificant in each of our analyses. In our subsample analyses, we find some evidence suggesting that the impact of a financial shock may depend in part on the individual's financial circumstances at the time of the shock. Respondents who were more liquidity-constrained tended to experience directionally larger declines in financial well-being after a financial shock than respondents who had relatively few liquidity constraints (although the differences between these groups were not statistically significant at the 10 percent level).

These findings suggest that, while financial well-being is affected by the experience of financial shocks, it is still relatively stable over the short-term. This speaks to the possibility that financial well-being is capturing something very fundamental in a person's perception of their financial situation, which may not be highly sensitive to either modest positive or negative changes in their finances. However, we also see some evidence that liquidity is important in helping households maintain their sense of financial well-being in the event of volatility, which emphasizes the need for policymakers and practitioners to help LMI households access liquid assets or other resources to help offset financial emergencies.

## **1. Background**

---

This brief presents the results of research investigating the impact of an array of negative financial shocks—including income shocks (e.g., job loss), expense shocks (e.g., car or home repairs), and medical shocks (e.g., hospitalization)—on the financial well-being of low- and moderate-income (LMI) households. It also examines the degree to which access to different forms of liquidity (income streams, liquid assets, social resources, and credit cards) can help buffer households against the negative effects of these shocks.

Financial shocks, which we define in this study as the experience of a decline in income or an increase in expenses, are a common experience in U.S. households. Nationally representative surveys have found that a quarter of U.S. households reported losing a job (Board of Governors of the Federal Reserve System, 2016) and that 60 percent of households experienced some type of expenditure shock in the prior 12 months (Pew Charitable Trusts, 2015). LMI households are more likely to experience financial shocks (Acs, Loprest, Nichols, 2009; Chase et al., 2011) and the costs of many of these shocks will, by definition, consume more of an LMI household’s budget relative to a higher income household. At the same time, LMI households are less likely to have sufficient emergency savings (BGFRS, 2016; Collins & Gjertson, 2013) or other forms of liquidity such as relatively low-cost credit (Barr, 2004) to buffer them against these shocks.

Much of the existing research on the implications of negative financial shocks for households focuses on the relationship between the experience of these shocks and discrete, relatively objective outcomes like skipping essential bill payments, having to cut back on food consumption, or forgoing essential medical care (Despard et al., 2018; Heflin, 2016; Leete & Bania, 2010; McKernan et al., 2009). To date, there has been relatively little research on how these shocks may impact households’ overall sense of financial security and financial well-being.

Part of the reason for this lack of research stems from the lack of a common definition of financial well-being. To that end, the Consumer Financial Protection Bureau (CFPB) has developed a comprehensive definition of financial well-being, which concerns a household’s sense of control over their day-to-day and month-to-month finances, their capacity to absorb a financial shock, their feeling of being on track to meet their financial goals, and having enough financial freedom to make choices that enhance their lives (CFPB, 2015).

The CFPB also developed a financial well-being scale to score an individual or household’s level of financial well-being (CFPB, 2015). Though this scale is becoming increasingly common in research and practice, there is still relatively little research on how household financial circumstances and experiences predict changes in financial well-being. Our research, which presents one of the first analyses of the CFPB’s financial well-being scale over time, addresses this gap by investigating the following research questions:

- (1) Which types of financial shocks have the greatest impacts on the self-assessed financial well-being of LMI households?
- (2) To what extent do household income, social networks, liquid savings, and access to credit mitigate the negative effects of financial shocks on the financial well-being of LMI households?

## 2. Research Approach

---

### Data and Sample

To answer these research questions, we use data from both waves of the 2018 Household Financial Surveys (HFS), which were administered through the Refund to Savings Initiative, a continuing partnership between Washington University in St. Louis, Duke University, and Intuit Inc. The survey was offered to a random sample of tax households who used TurboTax Freedom Edition (TTFE) software to file their taxes and consented to participate in the survey.<sup>1</sup> TTFE is an online tax filing product that is free for households with a 2017 adjustable gross income of \$33,000 or less and for recipients of the Earned Income Tax Credit. There were somewhat loser income requirements for active duty military households (though less than 5 percent of respondents were active duty military). The first wave of the survey was administered immediately after tax-filing, and the second wave was administered six months later. These surveys include a large array of questions about tax households' demographic and financial circumstances, including indicators of financial shocks and hardship. In addition, both waves of the 2018 HFS included the 10-item CFPB Financial Well-Being Scale.

For our analysis, we restricted the sample to households that completed both survey waves, had non-missing information on all key variables, and did not experience any income shock, expense shock, or medical shock at Wave 1. In total, 1,580 households met these criteria.

### Methods

Restricting our sample to households that did not experience any financial shock at Wave 1 allows us to identify the impacts of experiencing a financial shock between survey waves. To estimate this relationship, we use household fixed-effects regression models of the following general form:

$$FWB_{it} = \alpha + \beta_1 Wave_t + \beta_2 (Shock_i * Wave_t) + \beta_3 (OtherShock_{it}) + \theta_i + u_{it} \quad (1)$$

The outcomes in these models,  $FWB_{it}$ , represents household  $i$ 's level of financial well-being in survey wave  $t$ .  $Wave_t$  indicates whether the response was from the first or second wave of the survey, and  $Shock_i$  is a binary variable that indicates whether household  $i$  experienced the financial shock in the six months after the first wave of the survey.  $OtherShock_{it}$  is a binary variable indicating whether or not the respondent experienced one of the two other financial shocks in the six months between surveys one and two.  $\theta_i$  captures household fixed-effects and absorbs all time-invariant sources of variation within each household.  $u_{it}$  is an error term. Regression estimates are weighted using propensity score weights to correct for potential endogeneity in the experience of a financial shock.<sup>2</sup>

We estimate three separate regressions corresponding to three types of financial shocks—an income shock, an expense shock, and a medical shock. Since  $Shock_i$  is interacted with  $Wave_t$ , the coefficient  $\beta_2$  shows the change in financial well-being for households that experienced the shock in the six months between survey waves, relative to those that did not experience the shock, and can be interpreted as the marginal impact of the financial shock on the household's financial well-being. The parameter  $\beta_1$  captures the change in financial well-being for households that did not experience a shock between the two waves of the survey.  $\beta_3$  shows the association between the experience of one of the other financial shocks and financial well-being.

---

<sup>1</sup> TurboTax Freedom Edition is free tax-preparation software offered as part of the IRS Free File Alliance to LMI households that meet certain eligibility criteria (<https://freefilealliance.org/>).

<sup>2</sup> Though we employ propensity score weights in this analysis, in practice the results from the weighted and unweighted models are very similar.

We constructed our measures of income, expense, and medical shocks using respondents' answers to an array of HFS questions. An individual was identified as having experienced an income shock if they reported experiencing an unexpected job loss, an unexpected reduction in income, or another job-related shock (e.g., getting laid off, terminated, or having work hours reduced). The experience of an expense shock was defined as needing to make an unexpected major repair of a house, appliance, or car. Finally, the experience of an unexpected medical shock was defined as having an unexpected out-of-pocket medical expense.

In this brief, we present graphs that show the impacts of each shock on financial well-being.<sup>3</sup> We begin our analyses by estimating the impacts of these shocks on financial well-being for our full sample. We then explore the degree to which access to different types of liquidity can potentially mitigate the negative effects of financial shocks on financial well-being. We focus on three different sources of liquidity a household might draw on in the event of a financial shock: (a) gross income; (b) liquid assets; and (c) the ability to rely on social networks for financial assistance.<sup>4</sup>

---

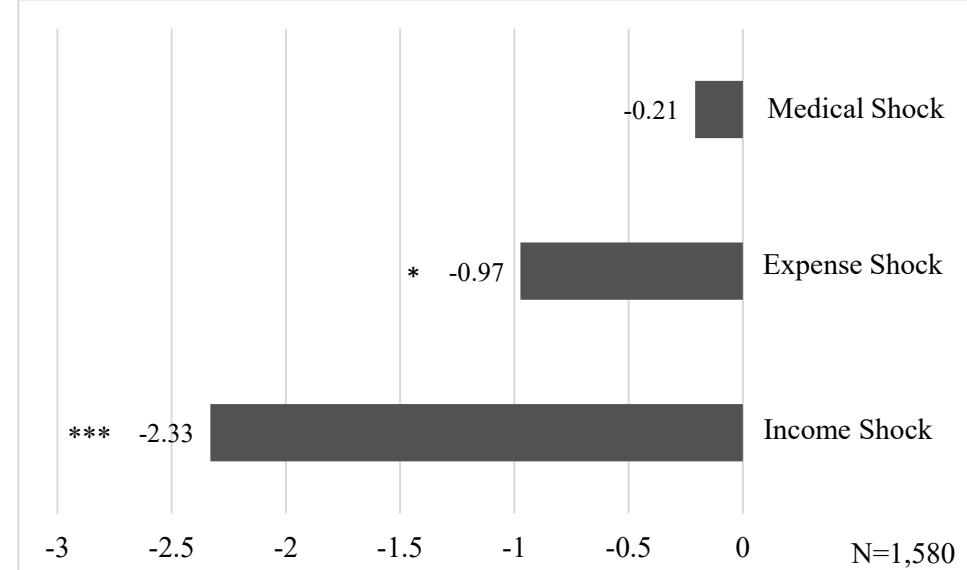
<sup>3</sup> Full results for these models can be found in Grinstein-Weiss et al. (2019).

<sup>4</sup> Grinstein-Weiss et al. (2019) also includes subsample analyses on the impacts of shocks by the ownership of a credit card.

### 3. Results

Figure 1 shows the average impact of experiencing an income, expense, or medical shocks between Wave 1 and Wave 2 of the survey on financial well-being. As this figure shows, an income shock reduced financial well-being by roughly 2.3 points while an expense shock reduced financial well-being by just under one point. The impact of medical shocks was statistically insignificant at the 10 percent level.

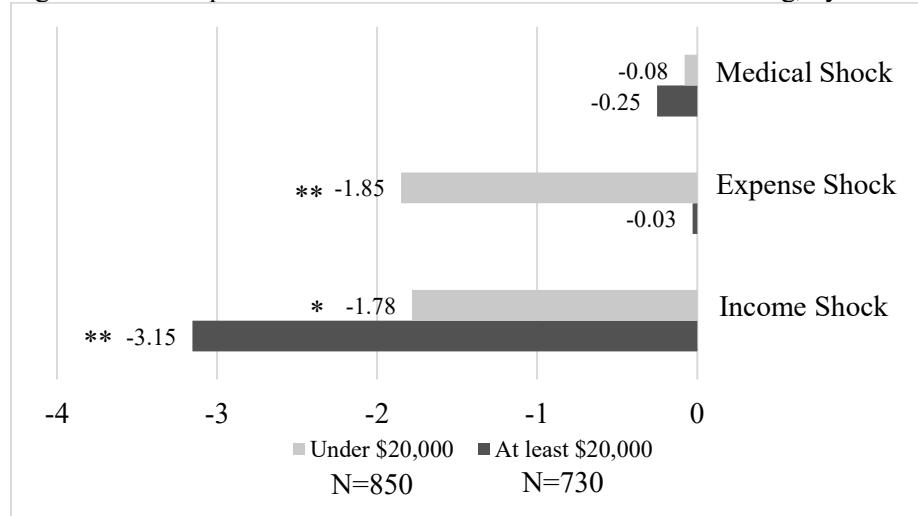
Figure 1. The Impact of Financial Shocks on Financial Well-Being, Full Sample



Impact of financial shock is different from zero: \* $p<0.1$ , \*\*\* $p<0.01$

Our subsequent analyses explore the degree to which access to different types of liquidity affects the observed relationships between financial shocks and financial well-being. In Figure 2, we compare the impacts of the financial shocks among respondents whose self-reported annual gross income was at least \$20,000 with the impacts on respondents whose self-reported incomes were less than \$20,000. We find that medical shocks' impact on financial well-being was statistically insignificant at the 10 percent level for both subsamples. While expense shocks did not have a statistically significant impact on the financial well-being of respondents whose annual gross income was at least \$20,000, we see that expense shocks had a statistically significant impact on respondents whose gross income was below \$20,000. The impact of income shocks was statistically significant (at the 10 percent level) for both income subgroups. They reduced the financial well-being of the lower-income respondents in our sample by about 3.2 points and reduced financial well-being of the higher-income respondents by 1.8 points.

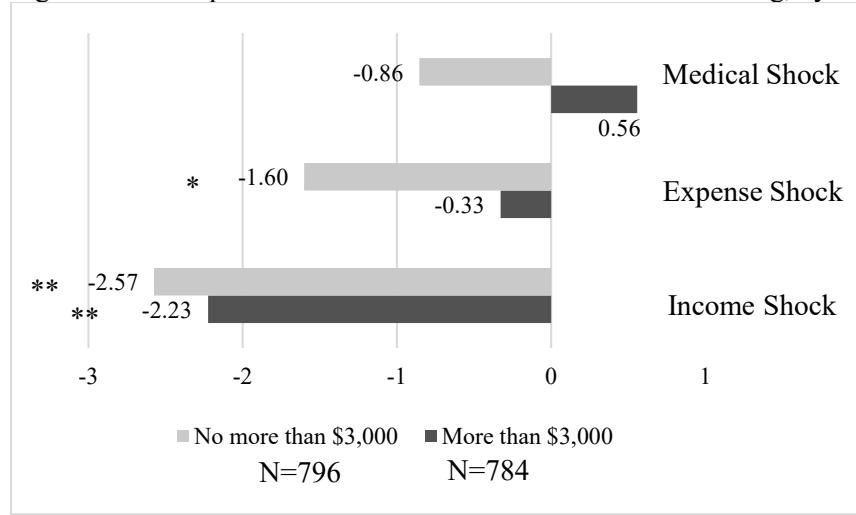
Figure 2. The Impact of Financial Shocks on Financial Well-Being, by Annual Gross Income



Impact of financial shock is different from zero: \*p<0.1, \*\*p<0.05

In Figure 3, we compare the impacts of three financial shocks for households that had above the median level of assets in the first wave of the survey—which in our sample was \$3,000—with households that had at or below the median level of liquid assets.<sup>5</sup> As in Figure 2, we see that medical shocks did not have a statistically significant impact on financial well-being for either subsample. While expense shocks reduced the financial well-being of respondents with lower level of liquid assets by 1.6 points ( $p<0.1$ ), they did not have a statistically significant impact on respondents with more than \$3,000 in liquid assets during the first wave of the survey. Income shocks reduced the financial well-being of respondents with lower levels of liquid assets by 2.6 points ( $p<0.05$ ) and reduced the financial well-being of respondents with higher levels of liquid assets by 2.2 points ( $p<0.05$ ).

Figure 3. The Impact of Financial Shock on Financial Well-Being, by Liquid Assets



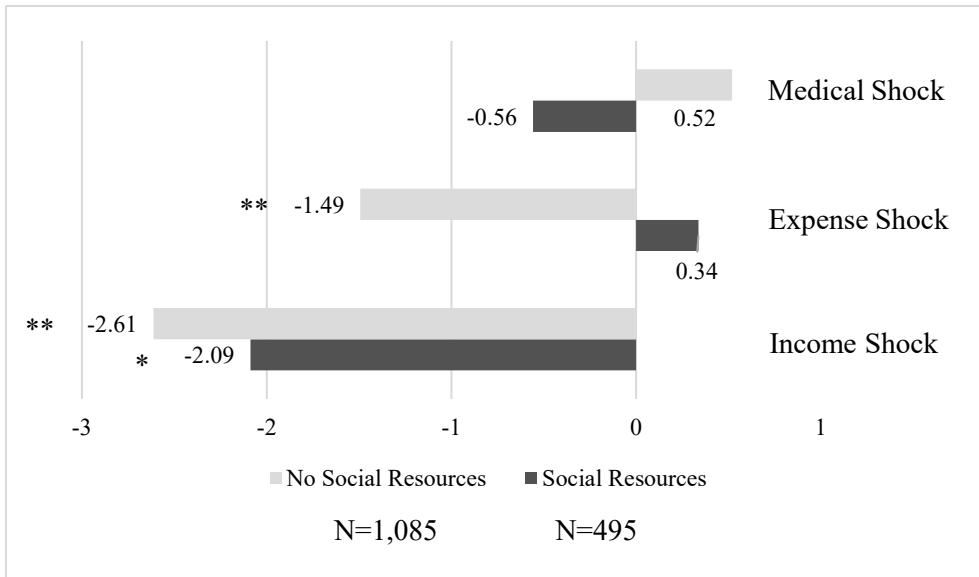
Impact of financial shock is different from zero: \*\*p<0.05, \*p<0.1

While many households access liquidity through savings, others borrow from their social networks to meet their financial needs. For example, a household may turn to friends or family for a loan in the event of an emergency, or parents may increase their financial support to offset a financial shock. In Figure 4,

<sup>5</sup> We define a household's level of liquid assets as the sum of its assets in savings accounts, checking accounts, and cash.

we compare the impacts of financial shocks by the respondent's ability to rely on financial assistance from social networks. As Figure 4 shows, the impacts of medical shocks were statistically insignificant for both subsamples. While expense shocks did not have a statistically significant impact on respondents who could rely on social resources for financial assistance, they did reduce the financial well-being of people who could not rely on social resources by 1.5 points ( $p < 0.05$ ). Income shocks had statistically significant impacts on both subgroups, reducing financial well-being by 2.1 points for respondents who could rely on social resources ( $p < 0.1$ ) and reducing financial well-being by 2.6 points ( $p < 0.05$ ) for respondents who could not.

Figure 4. The Impacts of Financial Shocks on Financial Well-Being, by Ability to Rely on Social Resources



## 4. Discussion

---

Among the three shocks that we examined, income shocks consistently had the largest impact on the financial well-being of the respondents in our sample. While expense shocks occasionally led to modest declines in financial well-being, medical shocks consistently had statistically insignificant impacts in each of our analyses. The relative impacts of these different shocks makes sense. An income decline or job loss is likely more damaging to a household's sense of well-being because it can affect both current and future income flows, and is likely much more difficult to offset than expense or medical shocks, which can be covered in part by shifting the costs of the expense to the future (for example, by putting the expense on a credit card) or by reducing current consumption costs (for example, by purchasing cheaper food).

We also found that some evidence suggesting that the magnitude of these shocks can depend on the household's financial circumstances prior to their experiencing the shock. We saw that expense shocks had statistically insignificant impacts on higher-income households in our sample but reduced the financial well-being of the lower-income respondents in our sample by nearly 1.9 points. There is some evidence that the impact of a financial shock may depend on the household's access to liquidity. Respondents who had fewer than \$3,000 in liquid assets responded more negatively to expense and income shocks than the respondents in our sample who had at least \$3,000 in liquid assets. Similarly, respondents who were unable to rely on social networks for financial assistance were impacted more negatively by income and expense shocks than respondents who were able to rely on assistance from social networks. Separate analyses show that the estimated differences between subgroups were statistically insignificant at the 10 percent level.<sup>6</sup> However, these findings do directionally suggest that individuals who have reliable access to liquidity are less impacted by financial shocks than those who do not.

Taken together, these findings suggest that for households there are ways of building financial resiliency to mitigate the potential impacts of financial shocks on financial well-being. Practitioners and policymakers who are interested in helping LMI households remain financially resilient in the face of financial shocks may want to consider targeting policies or implementing programs that can stabilize income flows, build liquid assets, and help households manage their family and social financial networks.

At the same time, our research also points to some interesting implications for the use of the financial well-being scale as a tool for measuring the impact of financial security interventions. We observe that the reductions in financial well-being that come from major financial shocks (such as job or income loss) are, though statistically significant, relatively small. The reduction in financial well-being from income shocks is only 2.3 points, which is the equivalent of 0.18 standard deviations. Given this, it may be difficult for many typical financial security interventions (such as incentivizing emergency savings, providing financial education, or promoting bank account opening) to make substantial impacts on financial well-being, at least in the short-term. More research will be required to assess the degree to which different interventions can impact financial well-being.

---

<sup>6</sup> See Grinstein-Weiss et al. (2019) for significance tests between subgroups on differences in the impacts of financial shocks.

## 5. References

---

- Acs, G., Loprest, P. J., & Nichols, A. (2009). Risk and recovery: Documenting the changing risks to family incomes [Brief]. Washington, DC: Urban Institute. Retrieved from <http://www.urban.org/publications/411890.html>
- Barr, M. S. (2004, September). Banking the poor: Policies to bring low-income Americans into the financial mainstream (Metropolitan Policy Program Research Brief). Brookings Institution.
- Board of Governors of the Federal Reserve System (2016, May). Report on the Economic Well-Being of U.S. Households in 2015.
- Chase, S., Gjerston, L., & Collins, J. M. (2011, June). Coming up with cash in a pinch: Emergency savings and its alternatives (CFS Issue Brief No. 6.1). University of Wisconsin–Madison, Center for Financial Security.  
<https://centerforfinancialsecurity.files.wordpress.com/2011/06/2011-coming-up-with-cash-in-a-pinch.pdf>. Accessed July 31, 2017.
- Collins, J. M., & Gjertson, L. (2013). Emergency savings for low-income consumers. *Focus*, 30(1), 12–17. <http://www.irp.wisc.edu/publications/focus/pdfs/foc301c.pdf>
- Consumer Financial Protection Bureau. (2015, December). Measuring Financial Well-Being: A Guide to Using the CFPB Financial Well-Being Scale. Retrieved on July 25, 2018 from [https://files.consumerfinance.gov/f/201512\\_cfpb\\_financialwell-being-user-guide-scale.pdf](https://files.consumerfinance.gov/f/201512_cfpb_financialwell-being-user-guide-scale.pdf).
- Despard, M. R., Guo, S., Grinstein-Weiss, M., Russell, B., Oliphant, J. E., & deRuyter, A. (2018). The mediating role of assets in explaining hardship risk among households experiencing financial shocks. *Social Work Research*, 42(3), 147-158.
- Heflin, C. (2016). Family instability and material hardship: Results from the 2008 Survey of Income and Program Participation. *Journal of Family and Economic Issues*, 37(3), 359-372.
- Leete, L., & Bania, N. (2010). The effect of income shocks on food insufficiency. *Review of Economics of the Household*, 8(4), 505–526. doi:[10.1007/s11150-009-9075-4](https://doi.org/10.1007/s11150-009-9075-4)
- McKernan, S.-M., Ratcliffe, C., & Vinopal, K. (2009, November). Do assets help families cope with adverse events? (Perspectives on Low-Income Working Families Brief No. 10). Washington, DC: Urban Institute.
- Pew Charitable Trusts. 2015a. The precarious state of family balance sheets [Report]. [http://www.pewtrusts.org/~media/Assets/2015/01/FSM\\_Balance\\_Sheet\\_Report.pdf](http://www.pewtrusts.org/~media/Assets/2015/01/FSM_Balance_Sheet_Report.pdf). Accessed July 31, 2017.