Consumer fraud victimization and financial well-being[*]

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Abstract – Using nationally representative US data on individual level, we show that being victimized by consumer fraud has a significant negative impact on individuals' perception of financial well-being. Our results indicate that this negative relationship is not limited to particular subgroups of the population. We show that the negative effect of consumer fraud victimization mainly stems from two victimization types: Fraud in terms of misrepresentation of information as well as misusage of money by third parties. Our results further suggest that consumer fraud victimization impacts the perception of both current and future financial well-being, indicating that consumer fraud victimization might also alter individuals' perception about future financial security.

Keywords: Consumer fraud victimization, white-collar crime, financial well-being, well-being, household finance, consumer protection

JEL classification: K42, D14, D18

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1   Introduction

Recent research has shown that financial well-being is a key predictor of overall happiness (Netemeyer, Warmath, Fernandes, and Lynch Jr, 2017) and even the OECD declares sustained financial well-being as the ultimate goal of all their financial education efforts (INFE, 2011). Low levels of financial well-being can have severe negative consequences both on individual and societal level. On individual level, a decline in financial well-being is associated with an increased probability of experiencing material hardship and struggling to make ends meet (CFPB, 2017b). On societal level, low financial well-being is related to declines in overall consumption and more reliance on social support (Brüggen, Hogreve, Holmlund, Kabadayi, and Löfgren, 2017). At the same time, financial well-being is strongly related to the level of poverty in a society (e.g., Griggs, 2013) as well as to the economic growth of a society (Sacks, Stevenson, and Wolfers, 2012).[1]

Given such wide-ranging negative consequences, researchers and policymakers have put in great effort to uncover underlying determinants of individuals' financial well-being. For instance, studies show that financial well-being is associated with contextual factors (e.g., technological development), interventions (e.g., nudging and framing) as well as personal factors (Brüggen et al., 2017). Such personal factors include socio-demographics and personality traits but also so called 'life events' (e.g., losing a job or getting divorced), which are likely to have strong impact on individuals' financial well-being (Brüggen et al., 2017; Luhmann, Hofmann, Eid, and Lucas, 2012). Somewhat surprisingly, studies analyzing the relationship between (negative) life events and individuals' financial well-being are markedly sparse.

Our study attempts to fill this gap by investigating a previously unconsidered and extremely negative life event – becoming a victim of *consumer fraud* – and its effect on individuals' *perception of financial well-being*. In contrast to individuals' *actual* financial well-being, *perceived* financial well-being does not only

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[1] Sacks et al. (2012) use data from the Eurobarometer survey and document a positive relationship between financial well-being and economic growth in 8 out of 9 countries.

reflect individuals' level of comfort in meeting current and future financial obligations, but also individuals' perception about having a feeling of financial security (e.g., CFPB, 2015, 2017a; Netemeyer et al., 2017).

In our study, we relate consumer fraud to any fraudulent financial transactions, in which individuals feel that they have been financially taken advantage of, including being sold *unsuitable products*, being a victim of *misrepresentation of information* (e.g., hidden fees or unclear transaction terms), but also experiencing *misusage of money by third parties* (e.g., embezzlement of investments). Thus, consumer fraud is not limited to financial misconduct committed by investment advisors (e.g., Dimmock, Gerken, and Graham, 2018), but also entails any intentional deceptions in terms of fraudulent offerings of goods and services (Titus, 2001). Consumer fraud, broadly defined, is a global and wide-spread phenomenon with international fraud prevalence rates of approximately 11% (van Dijk, van Kesteren, and Smit, 2007). Among the US population, more than 10% are being victimized by consumer fraud every year (Anderson, 2013) and the number of consumer complaints regarding fraudulent activities reported to the Consumer Financial Protection Bureau increased by 82% during the last two years (CFPB, 2018).

We hypothesize that being victimized by consumer fraud might have a large impact on how individuals evaluate their current and future financial situation, both in monetary terms, but also with regard to having a feeling of financial security. Our hypothesis is based on findings in the literature providing evidence that consumer fraud victims often suffer from a multitude of negative consequences. Despite the direct monetary costs incurred by victimization that are estimated to range from approximately $40 to $50 billion (Deevy, Lucich, and Beals, 2012), there is ample evidence that victimization is also associated with non-pecuniary costs (i.e., indirect costs). For instance, prior studies show that victims of fraud often suffer from psychological problems, including sleep deprivation, depression and even suicidal ideation (e.g., Ganzini, Mcfarland, and Bloom, 1990; Sechrest, Shichor, Doocey, and Geis, 1998). More importantly, such indirect costs often outweigh the direct costs of victimization (Kieffer and Mottola, 2016).

Against this background, theory suggests that individuals who have not been victimized by negative life events, such as fraud, tend to perceive themselves as rather personally invulnerable (Perloff, 1983). [2] However, once an individual experiences victimization this feeling of personal invulnerability is strongly shattered (e.g., Aihio, Frings, Wilcock, and Burrell, 2017; Denkers and Winkel, 1998; Perloff, 1983; Spalek, 1999). In the context of our study, we argue that consumer fraud victimization might shatter the feeling of individuals' financial security – a key component of individuals' perceived financial well-being. Hence, we expect that, in contrast to non-victims that still tend to perceive themselves as rather personally invulnerable, fraud victims exhibit lower levels of financial well-being due to their dampened perception of current and future financial security.

To test our hypothesis, we merge data from six nationally representative surveys administered by the Understanding America Study (UAS). Our detailed data allows us to investigate whether and how the effect of consumer fraud victimization on financial well-being varies across subgroups of individuals and different types of fraud. Furthermore, our data allows us to investigate whether consumer fraud victimization also shatters individuals' perception of future financial security.

Our contribution to the literature is fourfold. First, we show that consumer fraud victimization is negatively associated with individuals' perception of financial well-being. Second, we show that victimization exhibits detrimental effects on financial well-being among virtually all subgroups of individuals. For example, we find that the effect of consumer fraud victimization on financial well-being does not vary between particular groups of income or age. Thus, our findings support the notion that the negative impact of consumer fraud victimization on financial well-being is a wide-spread phenomenon. In our third contribution, we show that the negative effect of consumer fraud victimization mainly stems from two consumer fraud victimization types: Fraud in terms of *misrepresentation of information* as well as *misusage of money by third parties*. Fourth and finally, we find that consumer fraud victimization is related

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[2] Individuals' excessive feeling of invulnerability is also well documented in Taylor and Brown (1988) and Weinstein (1980).

to the perception of both *current* and *future* financial well-being, indicating that victimized individuals might even have a shattered feeling of their future financial security.

We conduct several robustness checks, including a propensity matching analysis to control for a potential selection bias caused by factors such as differing age or wealth levels, which can possibly impact the likelihood of becoming a fraud victim (e.g., Lee and Soberon-Ferrer, 1997). More importantly, we thoroughly address concerns regarding potential endogeneity of consumer fraud victimization by means of three different instrumental variable regressions.

Our study intersects literature of research fields in criminology, psychology and economics. While recent studies regarding fraud have mainly focused on the *offender-side* identifying reasons why financial fraud is committed (e.g., Dimmock et al., 2018) and if so, where fraud geographically happens (Egan, Matvos, and Seru, 2018; Parsons, Sulaeman, and Titman, 2018), our study puts the spotlight on the *victim-side* of fraud and its severe consequences. Literature provides ample evidence that severe negative past experiences have a considerable impact on individuals' financial decisions, including individuals' risk taking behavior and stock market participation (e.g., Andersen, Hanspal, and Nielsen, 2018; Malmendier and Nagel, 2011). In this context, studies show that exposure to consumer fraud victimization on state and community level is associated with a considerable loss in individuals' trust in financial institutions (e.g., Giannetti and Wang, 2016; Gurun, Stoffman, and Yonker, 2018). This loss in trust is likely to affect individuals' financial well-being, because less trusting individuals reduce their investments in risky assets in favor of deposits, which fail to generate positive inflation-adjusted returns (Gurun et al., 2018). As another wide-ranging consequence of fraud, Titus et al. (1995) report that 20% of consumer fraud victims personally suffer from financial or personal credit problems. Further, studies provide evidence that consumer fraud victimization is associated with psychological consequences that range from anger and disappointment amongst victims (Shichor, Sechrest, and Doocy, 2000) even to relationship-and marital problems (Button, Lewis, and Tapley, 2014). Likewise, becoming a victim of fraud is often followed by stress, depressions and health issues (FINRA, 2015), which often result in a lasting decrease in life-satisfaction (Staubli, Killias, and Frey, 2014). We contribute to the literature and show that consumer fraud victimization can have severe impact on how

individuals evaluate their current and future financial situation, especially with regard to their perception about having a feeling of financial security.

2   Data and variable measurement

2.1   Sample collection

To assess the relationship between consumer fraud victimization and financial well-being, we use data collected in the Understanding America Study (UAS). The UAS is a nationally representative household panel recruited by the University of Southern California, featuring a sample of approximately 6,000 US respondents. In general, UAS consists of a diverse set of survey waves (around 150 different surveys), covering numerous aspects, such as financial literacy, psychological attitudes, financial well-being and financial behavior. A key feature of the UAS is that it allows us to link data across different surveys. In our study, we exploit this key feature and link data of six different surveys. Next to individuals' financial well-being and consumer fraud victimization, our dataset entails information on individuals' investment advisory status, actual and perceived financial literacy, labor market status, general trust, satisfaction domains as well as income, wealth and debt. In addition, we further supplement our data with other socio-demographic variables including gender, age, marital status, household size, ethnicity and education, which are available in each survey. The data we use stem from surveys conducted between April 2015 and August 2018. All surveys include time stamps featuring information on the date when a particular survey was taken. We exploit this information to mitigate concerns regarding reverse causality and drop respondents that completed the survey on financial well-being (UAS 38), before responding to the survey on consumer fraud victimization (UAS 18), resulting in a final sample of 4,864 individuals.

2.2   Measuring financial well-being

For our dependent variable, we use the Financial Well-Being Scale recently introduced by the Consumer Financial Protection Bureau (CFPB, 2017a). The CFPB defines financial well-being as "*a state of being wherein a person can fully meet current and ongoing financial obligations, can feel secure in their financial future, and is able to make choices that allow them to enjoy life*" (CFPB, 2017a, p. 6). Thus, the CFPB

Financial Well-Being Scale captures perceptions of both *current* and *future* financial well-being with a particular focus on individuals' perception of financial security. To assess individuals' financial well-being; respondents are asked to evaluate how well and how often 10 different statements and situations with regard to financial matters apply to them. For instance, respondents were asked how well the statement "*I am securing my financial future*" describes their financial situation, with possible answers ranging from "*4 = Describes me completely to 0 = Does not describe me at all*". Another item asks respondents how often the statement "*I am behind with my finances*" applies to them, with possible answers coded from "*4 = Always to 0 = Never*".[3] Respondents' answers to the 10-item questionnaire are then summed to an aggregate financial well-being score that can take on values ranging from 0 to 40, with higher values indicating higher levels of financial well-being. Instead of using the aggregate financial well-being score, we use a scoring procedure developed by the CFPB, which accounts for variations by item polarity, age group of respondent, and administration mode (self-administered vs. interviewer administered), resulting in a more precise score for each individual.[4] This score is captured in the *FWB* and can take on values between 0 and 100 and is centered at 50, with higher values indicating higher levels of financial well-being.[5] We use this score in all of our main analyses and provide detailed descriptions as well as summary statistics of each item in Table A2 in the appendix.

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[3] Please note that six out of ten questions are reverse coded. For the reverse coded items, the categories "*does not describe me at all*" as well as *"never"* receive the highest value of four. We mark all reverse coded items in Table A2 in the appendix.

[4] The method introduced by the CFPB accounts for item polarity, which tests whether the direction of the items (either negatively or positively worded) might have influenced individuals' responses.

[5] For a detailed description on the development of the CFPB Financial Well-Being Scale and the item response theory model employed, the reader is referred to the technical report of the CFPB (CFPB, 2017a)

2.3 Measurement of consumer fraud victimization

To create a measure for consumer fraud victimization, we utilize a specific survey module available in UAS 18 that comprises in-depth information on individuals' consumer fraud victimization. To identify consumer fraud victims, we use the following survey item:

> *Do you feel like you have been taken advantage of on a major financial transaction in the last 3 years? Major means at least $1,000.*

We build an indicator variable *Fraud* that equals one for respondents answering "yes" to this question (consumer fraud victims), and zero otherwise (non-victims). A key feature of our data is that respondents were further asked in what ways they were financially taken advantage of, which allows us to differentiate between various types of fraud. Respondents can choose different types of fraud that apply to them. For our analysis of fraud types, we differentiate between fraud regarding *unsuitable products* (e.g., products sold that were not requested), *misrepresentation of information* (e.g., hidden fees), *misusage of money by third parties* (e.g., embezzlement of investments), and *other* types of fraud. For each of the four preceding fraud types, we build an indicator variable that equals one if the respondent reports the respective fraud type, and zero otherwise.[6]

We conduct some data cleansing steps to reduce potential measurement error in the variable *Fraud*. In this context, we exploit the information provided in the free-text response to *other* types of fraud in two ways. First, we assess whether the answer given in the free-text response matches a common definition of consumer fraud victimization. We follow the most common definition and define consumer fraud victimization as "*intentional deception or attempted deception of a victim with the promise of goods, services, or other benefits that are nonexistent, unnecessary, were never intended to be provided, or were grossly misrepresented*" (Titus, 2001, p. 57). We identify 112 observations that may not be classified as

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[6] Please note that respondents can choose multiple fraud types, indicating that they might report fraud types of more than one group at the same time. For detailed descriptions on the fraud items, please refer to Table A1 in the appendix.

being victimized by consumer fraud and drop them from our analysis. In a second step, we assess whether the fraud type mentioned in the free-text variable for the remaining observations can be attributed to any of the other three fraud categories (e.g., *misrepresentation of information*). In doing so, we reclassify one respondent from *other* to *unsuitable products*, 29 respondents from *other* to *misrepresented information* and nine respondents from *other* to *misusage of money by third parties*, respectively.[7]

2.4 Descriptive statistics

In Table 1, we report summary statistics for our explanatory variables (Panel A and B) as well as our dependent variable, the CFPB Financial Well-Being Scale (Panel C).

[Please insert Table 1 about here.]

Throughout our analyses, we include a large set of control variables that have been previously identified to affect financial well-being (see e.g., Brüggen et al., 2017). For instance, we include measures for respondents' financial literacy and perceived financial literacy (CFPB, 2017b), as well as whether the respondent consulted a professional financial advisor for investment advice (Gerrans, Speelman, and Campitelli, 2014). Furthermore, we include a comprehensive set of socio-demographic characteristics, including individuals' general trust, gender, age, marital status, household size, ethnicity, education, labor market status, household income and net wealth. We also control for individuals' satisfaction domains, including satisfaction with family, health, income, job and life, because prior studies show that financial well-being is strongly associated with, for example general satisfaction with life or income (e.g., Netemeyer, Warmath, Fernandes, and Lynch Jr, 2017). In Panel C of Table 1, we report summary statistics of our dependent variable financial well-being. The mean (median) financial well-being score equals 54.2 (54), indicating that financial well-being of respondents in our sample is slightly higher than for the average

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[7] Detailed descriptions on the free-text variable capturing other fraud reasons and their mapping to other categories are available upon request. Please note that our results do not change materially when we do not reclassify the respondents. The results are available upon request.

respondent in the US population. For detailed variable descriptions, please see Table A1 in the appendix. Subsequently, we provide the summary statistics of our main explanatory variable consumer fraud victimization and its underlying dimensions in Table 2.

[Please insert Table 2 about here.]

Table 2 shows that 10.5 percent of the population reports to be victimized by consumer fraud in the past three years, which is in line with findings in the 2011 Consumer Fraud in the United States Survey by the Federal Trade Commission (Anderson, 2013). We document that *misrepresentation of information* seems to be the most prominent form of fraud with 8.4 percent of the population reporting victimization. Since respondents can select different types of fraud that apply to them, we further focus on the fraud types reported by the subsample of consumer fraud victims. According to the rightmost column in Table 2, roughly 80 percent of the victims select *misrepresentation of information* as the respective fraud type providing further support for this type of fraud being the most prominent form.[8]

3 Empirical results

3.1 Consumer fraud victimization and financial well-being

3.1.1 *Main results*

To examine the impact of consumer fraud victimization on individuals' financial well-being, we estimate the following linear regression model

$$FWB_i = \beta_0 + \beta_1 Fraud_i + \gamma' \boldsymbol{c}_i + \delta' \boldsymbol{s}_i + \varepsilon_i \tag{1}$$

where FWB_i denotes respondent i`s financial well-being, and $Fraud$ is an indicator variable that equals one for consumer fraud victims, and zero otherwise. We supplement our regression model with a vector of

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[8] In unreported analyses, we also assess who is being victimized by fraud. Our results are consistent with DeLiema et al. (2018) and Titus et al. (1995), who show that there is neither a single personal factor nor a typical stereotype that reliably predicts fraud victimization.

control variables c_i, capturing all variables displayed in Panel A of Table 1 as well as a vector of satisfaction variables s_i as displayed in Panel B of Table 1, respectively.

[Please insert Table 3 about here.]

Table 3 reports coefficient estimates obtained from various specifications of Equation (1). In column (1), we report the unconditional effect of consumer fraud victimization on financial well-being excluding all other control variables from our model. The coefficient of *Fraud* reveals a statistically significant negative effect of consumer fraud victimization on individuals' financial well-being that amounts to -6.6. In other words, being victimized by fraud reduces individuals' financial well-being by approximately 12.2 percent according to a sample mean of financial well-being of 54.2. In specification (2) and (3), we add the vector of control variables c_i and the vector of satisfaction controls s_i to our regression model. While the effect of consumer fraud victimization decreases in magnitude, the results in specification (2) and (3) still provide strong evidence in support of a statistically and economically significant impact of consumer fraud victimization on financial well-being. More precisely, in our baseline model in specification (3), we document that being victimized by fraud reduces individuals' financial well-being by -3.4 (or 6.5 percent) after controlling for a large set of factors that have been previously identified to explain variation in financial well-being.

With respect to the remaining regressors, we confirm prior findings in the literature that financially literate and financially confident (i.e., high perceived financial literacy) individuals show higher levels of financial well-being (CFPB, 2017b). Moreover, we document an u-shaped relationship between age and financial well-being. Not surprisingly, we also find unemployment to decrease, and higher income and net wealth to increase financial well-being.[9]

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[9] We suppress all satisfaction controls in our analyses for brevity reasons. However, our results suggest that satisfaction with life and income are positively associated with financial well-being, whereas the remaining satisfaction domains do not explain any variation in individuals' financial well-being. The results are available upon request.

3.1.2   Heterogeneous effects of fraud

Next, we investigate whether and how the effect of consumer fraud victimization on financial well-being varies across subgroups of individuals. Analyzing potential differences in the impact of fraud on financial well-being across different subgroups might provide valuable insights on how individuals cope with victimization. In order to create targeted and effective measures to prevent detrimental effects of fraud, it would be highly relevant for policymakers to know if certain groups, such as the elderly or non-white population, are especially affected. To test for heterogeneous treatment effects of consumer fraud victimization we separately interact our key explanatory variable *Fraud* with all variables included in regression specification (3) of Table 3. All metric variables are dichotomized via median splits and the suffix *_high* denotes above-median values of observations for these variables. We estimate the following linear regression model

$$FWB_i = \beta_0 + \beta_1 Fraud_i + \beta_2 [Indicator\ variable_i]$$
$$+\beta_3 Fraud_i \times [Indicator\ variable_i] + \gamma' \boldsymbol{c}_i + \delta' \boldsymbol{s}_i + \varepsilon_i \qquad (2)$$

where the dichotomized variables enter our regression model as indicator variables.

[Please insert Table 4 about here.]

Table 4 presents the results row-wise by indicator variable. For instance, β_1 in the first row reports the effect of *Fraud* on financial well-being for the subgroup of the 50% less financially literate individuals (i.e., *Financial literacy_high* = 0), $\beta_1 + \beta_3$ denotes the effect of *Fraud* for the subsample of the 50% more financially literate individuals, and β_3 shows the difference in the effects of *Fraud* between financially illiterate and literate respondents, respectively. Analogously, the third row reports betas for unadvised individuals (β_1), advised individuals ($\beta_1 + \beta_3$) and the difference between the two groups (β_3).

Our analysis of treatment-effect heterogeneity provides two major results. First, we document that β_1 and $\beta_1 + \beta_3$ remain statistically significant in virtually every specification, indicating that the negative effect of fraud on financial well-being continues to be statistically and economically significant for virtually

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all subgroups. The only exception were fraud does not seem to affect financial well-being are unemployed and self-employed individuals. A possible explanation for this finding is that perceived financial well-being of unemployed individuals is already at a level where a consumer fraud victimization cannot further decrease it significantly.[10] For self-employed individuals, it is possible to assume that these individuals are used to engage in a higher risk environments and are thus not shocked by a consumer fraud case anymore. Second, while the coefficients of consumer fraud victimization vary between subgroups, we do not document any significant differences except that *Fraud* seems to have a stronger effect on financial well-being of higher educated and wealthier individuals as captured by the coefficient β_3. This finding might have its origin in the theory of the *loss in unique invulnerability* (Frieze and Bookwala, 1996; Perloff, 1983), indicating that especially individuals who do not expect to become victims and feel particularly invulnerable (Taylor and Brown, 1988) are most heavily affected by an unexpected victimization. Hence, it is reasonable to believe that the negative impact of an unexpected victimization is stronger for educated and wealthy individuals, compared to other groups generally feeling more vulnerable.

3.1.3 *Consumer fraud victimization types*

Following up on the finding that the negative effect of consumer fraud victimization on financial well-being does not vary across subgroups of victimized individuals, we now assess whether the negative effect of fraud on financial well-being varies between different types of fraud. Identifying variations in the effects of distinct types of fraud on individuals' financial well-being is a particularly interesting and important issue, because governmental resources to support anti-fraud programs are constraint. In light of the current funding decisions over the CFPB budget (e.g., Friedman, 2018), our results might serve as a guidance for decision makers seeking to utilize the available resources in the most efficient way. Thus, decision makers could use our findings to prioritize on the prevention of the *most detrimental* fraud types.

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[10] We document that unemployed individuals exhibit mean financial well-being scores of 46, indicating that unemployed individuals show approximately 15% lower financial well-being levels, compared to employed individuals.

To reveal potential variation in the effect of the distinct types of fraud, namely fraud regarding *unsuitable products*, *misrepresentation of information*, *misusage of money by third parties*, and *other*, we estimate the following linear regression model

$$FWB_i = \beta_0 + \omega' \boldsymbol{f}_i + \gamma' \boldsymbol{c}_i + \delta' \boldsymbol{s}_i + \varepsilon_i \qquad (3)$$

where $\boldsymbol{f}_i$ denotes a vector of the four types of fraud that enters our regression model instead of the aggregate measure of consumer fraud victimization, and $\boldsymbol{c}_i$ and $\boldsymbol{s}_i$ show the vectors of control variables as well as satisfaction domains, respectively.

[Please insert Table 5 about here.]

Table 5 reports coefficient estimates obtained from various specifications of Equation (3). In specification (1), we show the unconditional effects of the four major fraud types, excluding all control variables. Analogously to our main analysis in Table 3, we further add controls and satisfaction domains in specification (2) and (3) of Table 5, respectively. Throughout specification (1) to (3) of Table 5, we excluded 105 respondents reporting multiple fraud types, in order to ensure the interpretability of the coefficient estimates as well as to isolate the single effects of specific frauds. Thus, for example, a coefficient of *unsuitable products* in Table 5 can be interpreted as the effect of being a victim of fraud regarding *unsuitable products*, compared to the (omitted) reference group of non-victims, holding all other fraud types constant at zero.

Our results in specification (1) of Table 5 show that only two out of four fraud types seem to affect individuals' financial well-being. While the effect of fraud regarding *unsuitable products* and *other* are statistically insignificant, we document that fraud regarding *misrepresentation of information* and *misusage of money by third parties* are strongly related to financial well-being. Despite the coefficients of fraud regarding *misrepresentation of information* and misusage of money by third parties decreasing in magnitude, the economical relevance and statistical significance of both fraud types persists when we add control variables (specification (2)) and satisfaction controls (specification (3)). Possible explanations for

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our findings entail that becoming a victim of a fraudulent case involving strongly misrepresented information lets victims doubt their own abilities to handle financial matters, leading to a potential loss in trust in own financial decision making (Deem, 2000). Correspondingly, becoming a victim of an embezzlement of investments (or other cases of misusage of money by third parties) might shatter victims trust in the financial system with potential impact on individuals' future financial decisions and financial well-being (e.g., Giannetti and Wang, 2016).

3.1.4 *Does consumer fraud victimization alter individuals' perception of future financial security?*

To investigate this question, we exploit the two-dimensional conceptualization of the CFPB Financial Well-Being Scale capturing information related to both individuals' *current* and *future* financial well-being. Unfortunately, the CFPB does not provide sufficient information to perform an item response theory-based scoring procedure for only a subset of the financial well-being items. Instead, we use the aggregate score of financial well-being as outlined in section 2.2. Specifically, we split the aggregate score in items that capture either current or future financial well-being. While the current financial well-being score consists of six questions, i.e. takes on values between 0 and 24, the future financial well-being score is comprised of four items, resulting in a future score that ranges from 0 to 16.[11]

[Please insert Table 6 about here.]

Table 6 reports the coefficients obtained from linear regression models re-estimating Equation (1) featuring either the *aggregate* score of financial well-being, *current* financial well-being or *future* financial well-being as the dependent variable. In all specifications, we include the same control variables as in our baseline model in column (3) of Table 3.

Our analysis produces three results. First, the results in specification (1) of Table 6 are consistent with those obtained in our baseline specification using the IRT-based score, indicating that our results are robust

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[11] We provide detailed information on the respective items included in each score in Table A2 in the appendix.

to using an alternative measure for individuals' financial well-being. Second, we document that consumer fraud victimization seems to a have stronger impact on individuals' current financial well-being. While consumer fraud victimization is associated with a 11.2% decrease in current financial well-being, the effect on future financial well-being amounts only to approximately 5.5%.[12] However, our third finding provides evidence that consumer fraud victimization affects both individuals' perception of current and future financial well-being. The fact that crime can have a lasting psychological effect on victims, leading to a prolonged decrease in general life satisfaction is well documented in prior research (e.g., Hanslmaier, 2013; Norris and Kaniasty, 1994).[13] Combining this prior evidence with our findings from Table 6, we point out that it is likely that consumer fraud even shatters individuals' perception about having a feeling of future financial security.

3.2 Robustness section

3.2.1 *Controlling for a selection bias of consumer fraud victimization*

As a first robustness check, we address concerns regarding a potential selection bias of consumer fraud victimization. Consumer fraud victims might differ in observable covariates compared to non-victims. Against this background, fraud is often targeted among particular subgroups, such as among the elderly, indicating that they face unequal selection probabilities of being victimized by fraud (e.g., DeLiema, Deevy, Lusardi, and Mitchell, 2018; Egan et al., 2018; Reisig and Holtfreter, 2013). We address potential selection concerns in Table 7 by matching consumer fraud victims (treated) with non-victims (controls) in the sample based on their propensity score to become a fraud victim. For each treated individual, we use a 1:1 nearest-neighbor matching approach and match on all variables as in our baseline regression in column (3) of Table 3.

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[12] The calculations are based on sample means of current and future financial well-being of 13.9 and 8.4, respectively.

[13] For instance, Staubli et al. (2014) show that it takes up to three years after victimization to recover similar levels of life satisfaction as prior to fraud.

[Please insert Table 7 about here.]

In column (1) of Table 7, we reestimate our main model (column (3) of Table 3)), and in column (2), we reestimate the results of our main model using the matched sample, respectively. As can be inferred from the coefficient of *Fraud* in column (2), the effect of fraud on financial well-being does not vary much in quantitative terms and is still significantly related to financial well-being, indicating that our results seem to be robust to a potential selection bias resulting from distributional differences in observable covariates between consumer fraud victims and non-victims.

3.2.2   *Assessing potential endogeneity*

Next, we consider whether the effect of consumer fraud victimization on financial well-being is endogenous. Since we use cross-sectional survey data, endogeneity of consumer fraud victimization possibly occurs either due to reverse causality or confounding (omitted) variables, which are both correlated with consumer fraud victimization and financial well-being. Despite controlling for a large set of variables, one possible omitted variable that could bias our results is individuals' *lack of self-control*, which is reflected in impulsive behavior and short-sightedness. In this regard, studies have shown that a lack of self-control is associated with a higher propensity of being victimized by fraud (e.g., Holtfreter, Reisig, Leeper Piquero, and Piquero, 2010; Reisig and Holtfreter, 2013), and a lack of self-control has also been shown to affect individuals' financial well-being, for example, in terms of unfavorable debt decisions (e.g., Gathergood, 2012). Hence, not controlling for individuals' self-control in the linear regression model in equation (1) could lead to either under- or overestimation of the effect of consumer fraud victimization on financial well-being.

To circumvent both reverse causality and omitted variable bias, we perform three different instrumental variable regressions. First, we employ a standard instrumental variable approach. Second, we use an alternative identification approach introduced by Lewbel (2012) that generates instruments using heteroscedasticity of the error structure from the first-stage regression to achieve identification. Third, we use a combined approach and estimate an instrumental variable regression using both external and

generated instruments to increase efficiency of the IV estimates. We report the results of the three instrumental variable regressions in Table 8.

[Please insert Table 8 about here.]

In our first approach (column (1) of Table 8), we perform a standard instrumental variable regression using two external instruments. In the sense of Netemeyer, Warmath, Fernandes, and Lynch Jr (2017), valid instruments for the potentially endogenous variable *Fraud* should satisfy the following four criteria. First, the instruments should be correlated with consumer fraud victimization (i.e., the potentially endogenous predictor). Second, the instruments should be correlated with financial well-being (i.e., the outcome), but the effects of the instruments should be insignificant when we control for consumer fraud victimization. As a third criterion, the error term for the prediction of financial well-being should be uncorrelated with the instruments. Finally, to ensure that the instruments are sufficiently strong, the fourth criterion suggests that the F-values for the instruments predicting consumer fraud victimization should exceed 10 (Stock, Wright, and Yogo, 2002). We chose individuals' *misunderstanding of financial transactions* and *average consumer fraud victimization on state level* as external instruments.[14] We argue that individuals' propensity of victimization is likely to increase when respondents enter financial transactions that they do not understand completely. With regard to our second instrument, Parsons, Sulaeman, and Titman (2018) show that financial misconduct rates differ widely between major U.S. cities. Against this background, we argue that individuals living in high-fraud states might face a higher propensity of becoming victims themselves.

Next, we assess whether both instrumental variables meet the criteria outlined in Netemeyer et al. (2017). *Misunderstanding of financial transactions* and *average consumer fraud victimization on state level* are both highly correlated with individuals' consumer fraud victimization and financial well-being.[15] The

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[14] Please see Table A1 in the appendix for detailed variable descriptions.

[15] The correlations between misunderstanding of financial transactions and fraud victimization equals $r = .31$ ($p < .01$). The correlation between average fraud victimization on state level is $r = .11$ ($p < .01$), and the correlation between misunderstanding

effects of *misunderstanding of financial transactions* ($\beta = 0.42, t = 12.94, p < .01$) and *average consumer fraud victimization on state level* ($\beta = 0.83, t = 6.09, p < .01$) on individuals' propensity of being victimized by fraud were significant, when we controlled for the other predictors as in our baseline specification in column (3) of Table 3. The *F*-value for both external instruments ($F = 107.13$) highly exceeds the critical value of 10. Most importantly, for predicting financial well-being, we observe no direct effect of both instruments on financial well-being when we control for *Fraud*, and the error term for the prediction of financial well-being is uncorrelated with both instruments.[16] Results from the second-stage regression in column (1) of Table 8 reveal that the effect of *Fraud* on financial well-being is still economically and statistically significant. The exogeneity tests are rejected ($p = 0.94$), and Hansen's J-statistic for overidentifying restriction highly accepts the null hypothesis that our external instruments are valid ($p = 0.77$), offering support for a causal relationship between consumer fraud victimization and financial well-being.

In our second IV regression, we employ a generated instrumental variable approach introduced by Lewbel (2012) that does not rely on the validity of the instruments compared to a standard IV regression. To achieve identification, we exploit variations in higher moment conditions of the error distribution from a first-stage regression of consumer fraud victimization on covariates as displayed in column (3) of Table 3. However, the model only generates valid instruments that can be used for identification if the error terms of the first-stage regression are heteroscedastic. In line with prior studies (e.g., Bannier and Schwarz, 2018; Deuflhard, Georgarakos, and Inderst, 2018; Meyll and Walter, 2018), we test for heteroscedasticity by

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of financial transactions as well as average fraud victimization on state level and financial well-being equal $r = -.07$ ($p < .01$) and $r = -.03$ ($p < .05$), respectively.

[16] Controlling for *Fraud*, the partial effects of misunderstanding of financial transactions and average fraud victimization on state level on financial well-being equal $\beta = -1.09, t = -1.27, p = 0.20$ and $\beta = -4.11, t = -0.77, p = 0.44$, respectively. The correlations between misunderstanding of financial transactions and average fraud victimization on state level and the error term for prediction financial well-being are $r = .00$ ($p = 0.78$) and $r = -.00$ ($p < .99$).

performing both a White test as well as the Breusch-Pagan test and find the assumption of heteroscedasticity to be strongly supported in our data.[17] Next, we generate instruments by multiplying the residuals from the first-stage regression with each of the covariates, centered at their sample means. The second-stage estimates of this approach are reported in column (2) of Table 8 and show that consumer fraud victimization is still significantly and negatively related to individuals' financial well-being. Similar to the standard IV regression in column (1), we can reject the exogeneity test and Hansen's J-statistic for overidentifying restriction highly accepts the null hypothesis that the generated instruments are valid.

Finally, Lewbel (2012) suggests to combine both external instruments (approach 1) and generated instruments (approach 2) to increase the efficiency of the IV estimator. We proceed in this way and provide the results of this combined approach in column (3) of Table 8. Similar to the previous IV regressions, the estimated coefficient of consumer fraud victimization remains also statistically significant in this specification, and both the exogeneity tests and Hansen's J-statistic suggest causality between consumer fraud victimization and financial well-being.

4   Conclusion

In our study, we introduce the negative life event *consumer fraud victimization* as a novel determinant for individuals' perceived financial well-being. Perceived financial well-being measures individuals' level of comfort in meeting current and future financial obligations, as well as individuals' perception about having a feeling of financial security. A sufficient level of financial well-being is of high importance due to its strong individual and societal impact (e.g., Brüggen et al., 2017; Griggs, 2013). In line with these findings, the OECD declares sustained financial well-being as the ultimate goal of all their financial education efforts (INFE, 2011). We show that consumer fraud victimization has a significant negative impact on the perceived financial well-being of individuals. Our results reveal that victimization exhibits

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[17] The results for the White test $\chi^2 = 94.59$ ($p < .01$) and the Breusch-Pagan test $\chi^2 = 16.24$ ($p < .01$) strongly support the assumption of heteroscedasticity in the first-stage regression of fraud victimization.

this detrimental effect among virtually all subgroups of individuals providing some evidence that the negative impact does not vary between particular groups of income or age. Further, we provide evidence that the negative effect of consumer fraud victimization mainly stems from the two fraud types *misrepresentation of information* and *misusage of money by third parties*. Finally, we find that consumer fraud victimization affects both the perception of *current* and *future* financial well-being, indicating that consumer fraud victimization might also alter individuals' perception about future financial security.

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Tables and figures

Table 1
Sample characteristics

	US population					
	Mean	Std. dev.	Min.	Median	Max.	N
Panel A. Controls						
Financial literacy	9.167	3.131	0	9	14	4,843
Perceived financial literacy	7.560	2.122	0	8	10	4,843
Investment advice	0.212	0.409	0	0	1	4,864
General trust	4.148	1.045	1	4	5	4,836
Female	0.531	0.499	0	1	1	4,864
Age	47.611	16.295	18	47	107	4,860
Married	0.564	0.496	0	1	1	4,864
Number of household members	1.461	0.753	1	1	6	4,864
White	0.768	0.422	0	1	1	4,854
Education	1.240	0.621	0	1	3	4,777
Unemployed	0.057	0.232	0	0	1	4,864
Self-employed	0.065	0.247	0	0	1	4,864
Household income	106,101	142,396	0	72,339	2,604,000	4,672
Household net wealth	308,914	1,422,793	-6,875,099	56,638	81,450,000	4,833
Panel B. Satisfaction domains						
Satisfaction with family	7.691	2.076	0	8	10	4,840
Satisfaction with health	6.791	2.211	0	7	10	4,838
Satisfaction with income	5.549	2.585	0	6	10	4,840
Satisfaction with job	6.486	2.352	0	7	10	4,840
Satisfaction with life	7.363	1.852	0	8	10	4,840
Panel C. Financial well-being						
Financial well-being	54.244	12.572	14	54	95	4,830

This table reports summary statistics on variables used in our analysis. We provide detailed variable descriptions in Table A1 in the appendix. The data is weighted and representative for the US population.

Table 2
Consumer fraud victimization among US households

	US population (*N* = 4,844)	Consumer fraud victims (*N* = 527)
	Mean	Mean
Fraud	0.105	1.000
Unsuitable products	0.021	0.199
Misrepresentation of information	0.084	0.799
Misusage of money by third parties	0.018	0.172
Other	0.004	0.036

This table reports summary statistics on our main explanatory variable *Fraud* and its different categories. While the left column shows the fraction of US individuals reporting each type of consumer fraud victimization, the right column displays what reasons for fraud are reported by individuals conditional on being a victim of consumer fraud. Please note that sum of means in the right column do not equal to one because respondents can be victimized by more than one fraud type at the same time. We provide detailed variable descriptions in Table A1 in the appendix. The data is weighted and representative for the US population.

Table 3
Consumer fraud victimization and financial well-being

	Dependent variable: *Financial well-being (FWB)*		
	(1)	(2)	(3)
Fraud	-6.6140***	-4.5045***	-3.4460***
	(0.7709)	(0.7000)	(0.6432)
Financial literacy		0.4758***	0.4839***
		(0.0917)	(0.0873)
Perceived financial literacy		1.3253***	1.0473***
		(0.1339)	(0.1240)
Investment advice		1.6222***	0.9761*
		(0.5603)	(0.5318)
General trust		0.0451	-0.1840
		(0.2227)	(0.2137)
Female		-0.2608	-0.4123
		(0.4415)	(0.4196)
Age		-0.5868***	-0.4161***
		(0.1241)	(0.1004)
Age^2		0.0061***	0.0043***
		(0.0013)	(0.0010)
Married		0.5837	-0.4974
		(0.4740)	(0.4682)
Number of household members		-0.1684	-0.2081
		(0.3117)	(0.2811)
White		-1.1242**	-0.9299*
		(0.5644)	(0.5376)
Education		1.1553***	0.9364**
		(0.4067)	(0.3797)
Unemployed		-2.4212**	-1.0939
		(0.9718)	(0.8976)
Self-employed		-0.4294	0.0549
		(0.7609)	(0.7202)
Household income (Q2)		0.9244	0.3218
		(0.6530)	(0.6144)
Household income (Q3)		2.6845***	1.3984**
		(0.6880)	(0.6582)
Household income (Q4)		3.5805***	1.9492***
		(0.7795)	(0.7297)
Household net wealth (Q2)		0.7736	0.2851
		(0.6604)	(0.6192)
Household net wealth (Q3)		3.5969***	2.7318***
		(0.6742)	(0.6303)
Household net wealth (Q4)		8.5916***	7.1156***
		(0.8620)	(0.7870)
Satisfaction controls	No	No	Yes
N	4,811	4,496	4,472
R^2	0.0261	0.3619	0.4426

This table reports coefficient estimates obtained from a linear regression model of the generic form

$$FWB_i = \beta_0 + \beta_1 Fraud_i + \gamma' c_i + \delta' s_i + \varepsilon_i.$$

Specification (1) shows the unconditional effect of *Fraud* on individuals i's financial well-being (*FWB*), excluding all control variables c_i as well controls for satisfaction domains. Specification (2) shows the conditional effect of *Fraud* on *FWB* including control variables c_i. Finally, in specification (3) we present our baseline model, in which we further add satisfaction controls s_i to our regression model. We provide detailed variable descriptions in Table A1 in the appendix. The data is weighted and representative for the whole US population. Tailor linearized standard errors are reported below the coefficients in parentheses. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Table 4
Heterogeneous effects of consumer fraud on financial well-being

	Dependent variable: *Financial well-being (FWB)*				
	β_1	$\beta_1 + \beta_3$	β_3	N	R^2
Financial literacy_high	-3.0362***	-3.8852***	-0.8490	4,472	0.4371
	(0.9776)	(0.7788)	(1.2456)		
Perceived financial literacy_high	-3.4449***	-3.7398***	-0.3931	4,472	0.4363
	(0.7373)	(1.2758)	(1.4568)		
Investment advice	-3.6416***	-2.5837**	1.0579	4,472	0.4427
	(0.7425)	(1.1714)	(1.3877)		
General trust_high	-3.8081***	-3.0722***	0.7359	4,472	0.4425
	(0.8859)	(0.9239)	(1.2737)		
Female	-2.7334***	-4.0178***	-1.2844	4,472	0.4429
	(0.9982)	(0.8306)	(1.2958)		
Age_high	-3.0737***	-4.1913***	-1.1176	4,472	0.4343
	(0.9173)	(0.8909)	(1.2696)		
Married	-2.8180***	-3.9604***	-1.1424	4,472	0.4428
	(0.9435)	(0.8615)	(1.2733)		
Household members_high	-3.5139***	-3.2943***	0.2196	4,472	0.4425
	(0.7337)	(1.2186)	(1.4168)		
White	-3.7194**	-3.3333***	0.3861	4,472	0.4427
	(1.4745)	(0.6695)	(1.6134)		
Education_high	-2.7358***	-5.4219***	-2.6861*	4,472	0.4452
	(0.7464)	(1.2057)	(1.4108)		
Unemployed	-3.4313***	-3.6310	-0.1997	4,472	0.4426
	(0.6568)	(2.8532)	(2.9283)		
Self-employed	-3.6014***	-1.7817	1.8197	4,472	0.4428
	(0.6711)	(2.2718)	(2.3724)		
Household income_high	-2.4674***	-4.4900***	-2.0226	4,472	0.4430
	(0.8959)	(0.9083)	(1.2721)		
Household net wealth_high	-2.2151**	-5.1203***	-2.9051**	4,472	0.4305
	(0.8798)	(0.9234)	(1.2732)		

This table reports coefficient estimates obtained from a linear regression model of the generic form:

$$FWB_i = \beta_0 + \beta_1 Fraud_i + \beta_2 [Indicator\ variable_i] + \beta_3 Fraud_i \times [Indicator\ variable_i] + \gamma' \boldsymbol{c}_i + \delta' \boldsymbol{s}_i + \varepsilon_i.$$

Thus, for the first indicator variable *Financial literacy_high*, for example, β_1 reports the effect of being victimized by fraud on financial well-being for the group of financially illiterate individuals (i.e., *Financial literacy_high* = 0). $\beta_1 + \beta_3$ reports the effect of being victimized by fraud on financial well-being for the subsample of financially literate individuals, and β_3 shows the difference in the reported effects between financially illiterate and literate individuals, respectively. All metric variables are dichotomized via median splits. The variable suffix *_high* denotes above-median values of observations for a given variable. To gauge statistical significance of the estimated coefficients pertaining to $(\beta_1 + \beta_3)$, each regression is rerun with rescaled values. The data is weighted and representative for the whole US population. Tailor linearized standard errors are reported below the coefficients in parentheses. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Table 5
Consumer fraud victimization types and financial well-being

	Dependent variable: *Financial well-being (FWB)*		
	(1)	(2)	(3)
Fraud types			
Unsuitable products	-3.3141	-1.9350	-1.3053
	(2.1127)	(1.5472)	(1.8216)
Misrepresentation of information	-6.0637***	-3.9987***	-3.1459***
	(0.9494)	(0.9176)	(0.8532)
Misusage of money by third parties	-8.7998***	-6.8677***	-4.0359**
	(2.4794)	(2.0356)	(1.6691)
Other	-1.6652	-3.2450	-1.0445
	(5.6940)	(3.5566)	(3.0630)
Controls	No	Yes	Yes
Satisfaction controls	No	No	Yes
N	4,706	4,399	4,375
R²	0.0202	0.3590	0.4389

This table reports coefficient estimates obtained from a linear regression model of the generic form:

$$FWB_i = \beta_0 + \omega' \boldsymbol{f}_i + \gamma' \boldsymbol{c}_i + \delta' \boldsymbol{s}_i + \varepsilon_i.$$

To analyze the effect of various fraud types, we exclude 105 respondents with multiple fraud types in specification (1) to (3). Specification (1) shows the unconditional effects of the vector of various fraud types $\boldsymbol{f}_i$ on respondents' financial well-being (*FWB*), and in specifications (2) and (3), we report the conditional effects of fraud types including the vector of control variables $\boldsymbol{c}_i$ and satisfaction controls $\boldsymbol{s}_i$, respectively. Reference category are respondents not being victimized by any fraud. The data is weighted and representative for the whole US population. Tailor linearized standard errors are reported below the coefficients in parentheses. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Table 6
Consumer fraud victimization and a two-dimensional conception of financial well-being

	Dependent variable:		
	FWB (total score)	*Current FWB*	*Future FWB*
	(1)	(2)	(3)
Fraud	-2.0006***	-1.5519***	-0.4661**
	(0.4122)	(0.2647)	(0.1857)
Controls	Yes	Yes	Yes
Satisfaction controls	Yes	Yes	Yes
N	4,457	4,440	4,395
R²	0.4886	0.4581	0.4175

In this table, we split the two-dimensional CFPB financial well-being scale in its underlying dimensions, i.e., *current and future financial well-being*. In specification (1), we replicate the results from our baseline regression in column (3) of Table 3. Specification (2) shows the coefficient estimates of a linear regression model featuring *Current FWB*, and specification (3) shows the same results for the concept of *Future FWB*. For detailed variable descriptions, please refer to Table A1 in the appendix. The data is weighted and representative for the whole US population. Tailor linearized standard errors are reported below the coefficients in parentheses. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Table 7
Consumer fraud victimization and financial well-being: propensity score matched sample

	Dependent variable: *Financial well-being (FWB)*	
	Unmatched sample (main results)	Matched sample
	(1)	(2)
Fraud	-3.4460***	-3.0582***
	(0.6432)	(0.8372)
Controls	Yes	Yes
Satisfaction controls	Yes	Yes
N	4,472	954
R^2	0.4426	0.4598

In this table, we present the results of a propensity score matching analysis, in which we match each consumer fraud victim (treated individual) with a non-victim (control group) based on her propensity score to be victimized by consumer fraud. For each treated individual, we use a 1:1 nearest-neighbor matching approach and match on all variables used in our baseline specification in column (3) of Table 3. In specification (1), we replicate the results from our baseline model in column (3) of Table 3 (i.e., unmatched sample), and in specification (2), we use the matched sample, respectively. The data is weighted and representative for the whole US population. Tailor linearized standard errors are reported below the coefficients in parentheses. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Table 8
Consumer fraud victimization and financial well-being: IV regression results

	Dependent variable: *Financial well-being (FWB)*		
	Standard IV	Lewbel (2012)	Combined
	(1)	(2)	(3)
Fraud	-3.0117**	-3.6593***	-3.3537***
	(1.4602)	(1.1985)	(0.9703)
Controls	Yes	Yes	Yes
Satisfaction controls	Yes	Yes	Yes
N	4,472	4,472	4,472
R^2	0.473	0.473	0.473
Hansen *J*-test (*p*-value)	0.773	0.444	0.550
F-*statistic* first stage	107.128	8.083	22.663
Endogeneity test (*p*-value)	0.938	0.565	0.695

The table reports second stage IV estimates from regressions of financial well-being on *Fraud* and all control variables from our baseline specification in column (3) of Table 3. In specification (1), we employ a standard instrumental variable regression, instrumenting *Fraud* using a respondent's *misunderstanding of financial transactions* and *average consumer fraud victimization on state-level* as external instruments. Next, in specification (2), we instrument *Fraud* using generated instruments after Lewbel (2012). Finally, in specification (3), we use a combined approach by Lewbel (2012) using both, the generated and external instruments from specification (1) and (2), respectively. We provide detailed variable descriptions in Table A1 in the appendix. Standard errors are robust. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Appendix

Table A1
Variables descriptions

Name	Description	UAS survey
Panel A: Control variables		
Financial literacy	Ordinal variable measuring the number of correct answers to 14 financial literacy questions. For the specific wording of the financial literacy questions, we refer to the survey codebook of UAS 1 at https://uasdata.usc.edu/index.php.	UAS 1
Age	Ordinal variable measuring respondent's age.	General
Education	Ordinal variable that describes the respondent's highest degree of education: [1] - Higher education entrance; [2] - Non-academic post-secondary education; [3] - University degree or higher. Zero otherwise.	General
Female	Dummy = 1 if respondent is female, and zero otherwise	General
General trust	Ordinal variable measuring respondent's general trust level. Corresponding item "Are you generally a trusting person?" with a corresponding scale ranging from [1] - Disagree strongly to [5] - Agree strongly.	UAS 1
Household income	Continuous variable measuring households' yearly net income ($US).	UAS 24
Household net wealth	Continuous variable measuring households' total net wealth ($US).	UAS 24
Investment advice	Dummy = 1 if respondent received investment advice of a professional financial advisor or attorney, and zero otherwise.	UAS 18
Married	Dummy = 1 if respondent is married, and zero otherwise	General
Number of household members	Ordinal variable measuring the number of household members, including the respondent taking the survey.	General
Perceived financial literacy	Ordinal variable measuring respondent's confidence in the ability to make financial decisions on a scale from 0 to 10 (highest confidence).	UAS 38
Self-employed	Dummy =1 if respondent is self-employed, and zero otherwise.	UAS 38
Unemployed	Dummy = 1 if respondent is unemployed, and zero otherwise.	UAS 38
White	Dummy = 1 if respondent's race is white, and zero otherwise.	General
Panel B: Satisfaction domains		
Satisfaction with family	Ordinal variable measuring respondent's overall satisfaction with family. Corresponding item: "Overall, how satisfied are you with your family?" with possible answers ranging on a scale from [0] - Not at all to [10] - Completely.	UAS 2
Satisfaction with health	Ordinal variable measuring respondent's overall satisfaction with health. Corresponding item: "Overall, how satisfied are you with your health?" with possible answers ranging on a scale from [0] - Not at all to [10] - Completely.	UAS 2
Satisfaction with income	Ordinal variable measuring respondent's overall satisfaction with income. Corresponding item: "Overall, how satisfied are you with your income?" with possible answers ranging on a scale from [0] - Not at all to [10] - Completely.	UAS 2
Satisfaction with job	Ordinal variable measuring respondent's overall satisfaction with job. Corresponding item: "Overall, how satisfied are you with your job?" with possible answers ranging on a scale from [0] - Not at all to [10] - Completely.	UAS 2
Satisfaction with life	Ordinal variable measuring respondent's overall satisfaction with life. Corresponding item: "Overall, how satisfied are you with your life?" with possible answers ranging on a scale from [0] - Not at all to [10] - Completely.	UAS 2
Panel C: Consumer fraud victimization and fraud types		
Fraud	Dummy =1 if respondent answered "yes" to the following item: "Do you feel like you have been taken advantage of on a major financial transaction in the last 3 years? Major means at least $1,000", and zero otherwise.	UAS 18
Unsuitable products	Dummy = if respondent reports being a victim of fraud regarding unsuitable products (i.e., (additional) products sold there were needed), and zero otherwise	UAS 18
Misrepresentation of information	Dummy = 1 if respondent reports being a victim of fraud regarding misrepresentation of information (i.e., undisclosed fees, higher price than named, less product or service received than expected and unclear terms of transaction), and zero otherwise.	UAS 18
Misusage of money by third parties	Dummy = 1 if respondent reports being a victim of fraud regarding misusage of money by third parties (i.e., embezzlement of investments by third parties), and zero otherwise.	UAS 18
Other	Dummy = 1 if respondent reports being a victim of other fraud, and zero otherwise.	UAS 18
Panel D: Instrumental variables		
Misunderstanding of financial transactions	Dummy = 1 if respondent answered "yes" to the following item: "In the last 3 years have you entered into a major (greater than $1,000) financial transaction that you did not completely understand at the time?", and zero otherwise.	UAS 18
Average fraud victimization on state-level	Calculated average consumer fraud victimization by state level.	UAS 18

Table A2
Financial well-being scale: item summary statistics

	% of US population					Item information	
Panel A: This statement describes me	Completely	Very well	Somewhat	Very little	Not at all	Reverse coded	Financial well-being category
I could handle a major financial transaction	9.89%	19.43%	35.29%	18.72%	16.67%	No	Current
I am securing my financial future	9.58%	22.58%	38.55%	19.54%	9.74%	No	Future
Because of my money situation, I feel like I will never have the things I want in life	7.44%	10.84%	34.56%	30.70%	16.46%	Yes	Future
I can enjoy life because of the way I'm management my money	8.33%	24.30%	40.48%	19.59%	7.30%	No	Future
I am just getting by financially	11.74%	13.87%	35.70%	21.58%	17.11%	Yes	Current
I am concerned that the money I have or will save won't last	15.65%	15.96%	38.29%	20.44%	9.66%	Yes	Future
Panel B: This statement applies to me	Always	Often	Sometimes	Rarely	Never		
Giving a gift for a wedding, birthday or other occasion would put a strain on my finances for the month	6.48%	9.94%	29.57%	34.32%	19.69%	Yes	Current
I have money left over at the end of the month	17.94%	22.72%	31.10%	18.49%	9.75%	No	Current
I am behind with my finances	5.38%	8.29%	21.42%	30.85%	34.07%	Yes	Current
My finances control my life	8.58%	13.96%	31.93%	27.81%	17.71%	Yes	Current

This table reports summary statistics on the items used to build the financial well-being scale. Please note that for reverse coded items in Panel A and B, the categories "*Not at all*" and "*Never*" receive the highest value of four. In the rightmost column, we provide information on which items have been classified to belong to the section of either current or future financial well-being.