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Households' Financial Fragility During the COVID-19 Pandemic in Germany

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Households' financial fragility during the COVID-19 pandemic in Germany

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Abstract

I examine the financial fragility of German households during the second wave of COVID-19 infections in the winter of 2020/21 by analyzing the households' ability to come up with EUR 2,000 within one month. About one in three households reports being unable to cover an unexpected expense of EUR 2,000 within one month, with some subgroups being particularly at risk, including individuals with children, tenants, respondents without employment or in marginal employment, and with lower levels of income, wealth, or education. While most households have access to rainy day funds for financial emergencies, a noticeable fraction complements this with borrowing, relying on family and friends, or overdrawing their accounts. Households that experienced more severe income losses since the onset of the crisis are more likely to report being unable to cope with an unexpected expense and are more likely to complement their rainy day savings with funds from other sources. Notably, my findings underline that financial literacy may protect households' financial capabilities in times of crisis: Financial literacy is associated with lower financial fragility and appears to mitigate the negative consequences of income losses on the ability to cope with emergency expenses.

JEL Classification: D14, D91, G51, G53, I18
Keywords: financial fragility, financial literacy, personal finance, financial behavior, COVID-19

I. Introduction

The COVID-19 pandemic severely impacted the financial situation of many households worldwide. To limit the virus's impact on public health, the German local, state, and federal governments introduced a wide range of non-pharmaceutical interventions in March 2020, that reduced public life to a minimum. The closure of many branches of the economy, the associated supply chain disruption, and the waning demand for many goods and services forced millions of employees to reduce their working hours substantially or to stop working altogether. The financial market turmoil at the beginning of the crisis led to financial losses for many households. For instance, the German blue-chip index DAX lost more than 30% of its value by March 20, 2020, compared to mid-February 2020. As these financial challenges for households unfolded, the levels of economic uncertainty spiked to unprecedented levels (Altig et al., 2020; Fetzer et al., 2020; Van der Wielen & Barrios, 2020), which is associated with more precautionary behaviors, such as cutting back consumption, securing additional credit access, and lowering the exposure to equity market investments (Ben-David et al., 2018; Kuchler & Zafar, 2019). To maintain the financial stability of households, governments aimed at buffering

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the losses of incomes and assets with the introduction and adjustment of numerous social policies.[1]

Irrespective of these financial challenges and the efforts of policymakers to mitigate the financial consequences, little research explored the initial impact of the pandemic on households' ability to withstand financial setbacks. In this article, I aim to fill this gap by examining the households' vulnerability to unexpected expenses and analyzing the mechanisms they would use to insure against them. I highlight the association of socioeconomic and demographic characteristics with the inability to cope with unexpected expenses and show how financial setbacks during the first months of the COVID-19 crisis are associated with the capacity to handle them. I use survey data collected at the height of the second COVID-19 wave in Germany. The sample is representative of the German-speaking labor force population aged 30 and above living in private households. Our survey uses the measure of Lusardi et al. (2011) to capture financial fragility. Specifically, we survey asked participants whether they could come up with the funds to deal with an unexpected expense of EUR 2,000 within one month. Respondents could indicate that they are "certainly", "probably", "probably not", or "certainly not" able to handle an unexpected expense within one month, or that they "do not know". Respondents are categorized as financially fragile if they report being "certainly not" or "probably not" able to handle an unexpected expense, or "do not know" whether they can. In a follow-up question, we asked financially fragile respondents to report how much they could approximately come up with within one month. Subsequently, we asked respondents who are "certainly" or "probably" able to cope and those able to raise an amount lower than EUR 2,000 about the strategies they would use to raise the funds. The list they could choose from included both formal and informal sources of funds and credit and an open category.

My analyses uncover five key findings. First, about one in three households is "certainly" or "probably" unable to handle an unexpected expense and therefore characterized as financially fragile. However, there are significant differences across socioeconomic and demographic characteristics. My findings underline that having children, lower educational attainment, working in atypical employment situations, being a tenant, and having low levels of net disposable income or wealth are associated with a higher probability of being unable to cope with an unexpected expense.

Second, households hit by the economic crisis during the first year of the pandemic are less likely to be able to come up with the funds for an unexpected expense. The share of financially fragile households is higher among those experiencing more severe income losses since the onset of the crisis. Whereas only one in four households without significant income changes or income gains indicates being financially fragile, almost half of those facing an income reduction between 20% and 35% of their monthly available household net income do so. Among respondents who lost 35% or more of their income, two-thirds indicate that they are probably or certainly unable to cover an unexpected expense of EUR 2,000.

Third, financial literacy is significantly negatively associated with financial fragility. This association is substantial: one additional correct answer to the "Big-3" financial literacy questions of Lusardi and Mitchell (2014) is associated with a 4.2 percentage points lower probability of being unable to cope. This association is highly significant even after controlling for other characteristics, including education, net disposable income, financial wealth, or the level of debt. Moreover, this finding is robust towards the inclusion of factors that earlier contributions uncovered to be important determinants of sound financial decision-making, including risk-aversion (see, e.g., Carroll & Samwick, 1998; Lusardi, 1998), optimism (Angelini & Cavapozzi, 2017; Hyytinen & Putkuri, 2018; Puri & Robinson, 2007) and confidence in financial knowledge (Babiarz & Robb, 2013; Bucher-Koenen et al., 2021; Lind et al., 2020; Robb et al., 2015; Van Rooij et al., 2012; Woodyard et al., 2017).

Fourth, Fourth, my results underline that financial literacy is associated with a more muted

[1] For a more detailed analysis of the social policy framework enacted during the crisis, see Aprea et al. (2021).

effect of income losses on the inability to handle unexpected expenses. Facing an income reduction of about one-fourth of the monthly net household income increases the financial fragility of a respondent with average financial literacy by 7.4 percentage points. However, facing an income loss of this size increases the financial fragility of households with an above-average level of financial literacy by only 5.1 percentage points, holding other demographic and socioeconomic characteristics constant. This difference across levels of financial literacy is sizable - it constitutes a drop in the chance of being financially fragile of about one-third - and is robust in a range of empirical specifications.

Fifth, I provide novel insights into the strategies German households apply to cope with financial setbacks in times of economic crisis. While most would rely on rainy day savings to handle unexpected expenses, a sizable share of respondents would supplement these provisions with other lines of formal or informal credit or resort to depleting their real or financial assets. Respondents reporting income losses during the first months of the pandemic are less often able to access rainy day savings and tend to combine several coping strategies, including overdrawing their accounts, selling valuables, or accessing their social networks for financial support. The results highlight the importance of studying the responses to financial challenges across different margins that are difficult to observe when focusing exclusively on the households' balance sheets.

This article contributes to the literature on the financial fragility of households in four ways. First, I study the situation at the height of the second COVID-19 wave in Germany during the winter of 2020/21. Hence, this article extends earlier contributions focusing either on the situation in the US at the early stages of the pandemic (Clark et al., 2021) or approaches considering the situation in Europe relying on information collected before the crisis (Demertzis et al., 2020; Midões, 2020; Midões & Seré, 2021). Second, using the financial fragility measure of Lusardi et al. (2011) by asking participants about their capacity and strategies to handle an unanticipated expense may better account for the unprecedented levels of economic uncertainty and anxiety during the COVID-19 pandemic, compared to approaches that rely on total savings, self-reported income, or simple yes-or-no measures. Third, my findings further add to the literature on the implications of financial literacy on financial behavior in times of macroeconomic crises (see, e.g., Bucher-Koenen and Ziegelmeyer, 2013, or Klapper et al., 2013). Lastly and most importantly, I study the role of financial literacy in coping with financial setbacks. Similar to the approaches of Clark et al. (2021) and Schneider et al. (2020), I consider income losses over the first months of the pandemic. In contrast to their work, I analyze how financial literacy helps mitigate the impact of income losses on the ability of households to cope with unexpected expenses.

The article is structured as follows. Section II gives a brief overview of the literature dealing with various aspects of financial vulnerability and introduces the financial fragility module as proposed by Lusardi et al. (2011). Section III introduces my main data source. In section IV, I present my results. I describe the financial fragility of the German labor force population in subsection IV.i. I analyze how financial setbacks experienced during the pandemic affect the ability to handle unexpected expenses and how financial literacy may help mitigate the impact of income losses in subsection IV.ii. Subsequently, I consider the strategies respondents would employ to handle unexpected expenses in subsection IV.iii. Section V concludes.

II. Literature Review

Over the last decades, scholars proposed different concepts to measure the (in-)ability to withstand financial setbacks. However, the approaches differ vastly in terms of methodology and terminology. In early contributions, the financial stability of a household mainly comprises the relationship between income, expenditures, and the ability to make provisions for handling sudden changes in the household's financial situation (see, e.g. Smythe, 1968). Other authors

focus on the vulnerability to financial shocks and analyze whether households own "adequate emergency funds", defined as two, three, or six months of household income equivalents.[2] More recent approaches study vulnerability to financial shocks of different intensities by considering a wide array of indicators, including a wide range of aspects related to the households' debt and liabilities (Ampudia et al., 2016; Brown & Taylor, 2008; Christelis et al., 2009; Cumming & Hubert, 2021; Rõõm & Meriküll, 2017), or comparisons of liquid assets and expenses (Brown & Taylor, 2008; Brunetti et al., 2016). Moreover, the related literature on hand-to-mouth households analyzes the limited consumption smoothing ability with illiquid assets (see, for instance, Kaplan et al., 2014, and Olafsson and Pagel, 2018 for a critical discussion). While the measures used in these studies differ, their common feature is their use of the (often self-reported) households' balance sheets to estimate the ability to withstand financial distress.

In contrast, the approach of Lusardi et al. (2011) builds on survey items targeting the households' confidence in their ability to handle an unexpected expense of USD 2,000 within one month and the strategies respondents would employ to cope with the expense. Directly asking about the respondents' confidence and coping strategies has several advantages over alternative measures of financial vulnerability.

First, the direct question measures the capacity to handle unexpected expenses and incorporates coping mechanisms that are difficult to capture even with complete information on households' balance sheets (Gathergood & Wylie, 2018). Nevertheless, theoretical contributions underlined these strategies as important devices of consumption insurance (including transfers from social networks (Ambrus et al., 2014), precautionary savings (Carroll & Samwick, 1998) or increasing the family labor supply (e.g. Blundell et al., 2008; Blundell et al., 2016)) or found to be relevant coping mechanisms in empirical studies (e.g., selling household valuables (Białowolski, 2017)). Second, the approach of Lusardi et al. (2011) incorporates the households' preferences and constraints in determining which funds to use for emergencies. Accounting for these dimensions is crucial, given the highly household-specific constraints that are difficult to observe in most data. Asking about the strategies most likely used in cases of financial distress allows to get a unique insight into these dimensions. Third, the approach captures the respondents' confidence in their ability to raise the funds within one month on an ordinal scale ("I could *certainly / probably / probably not / certainly not* come up with the funds"), which may better account for the uncertainty of an unanticipated shock than a simple yes-or-no question. Fourth and highly relevant to studies based on survey data, this measure does not require a detailed collection of assets and liabilities, which is often difficult to obtain in surveys due to item non-responses in financial questions. Fifth, the measure of financial fragility adequately characterizes the balance sheet of the households of interest and their capacity to borrow (Hasler et al., 2018).

While the pioneering work of Lusardi et al. (2011) focuses on the financial fragility in the wake of the financial crisis of 2007/08, applying their methodology is highly relevant for understanding the impact of the economic turmoil that unfolded during the first months of the COVID-19 pandemic. In the US, many families were fragile before the pandemic (Lusardi et al., 2020), but the levels of financial fragility increased as the economic consequences of the crisis unfolded in 2020. About 20% of older respondents (aged 45-75) could not handle a midsize emergency expense during the first weeks of the pandemic (Clark et al., 2021). Moreover, the inequality in levels of financial fragility grew over the first months of the pandemic along socioeconomic and demographic dimensions when pandemic-related unemployment benefits phased out (Schneider et al., 2020).

In contrast to the situation in the US, there is limited evidence on the impact of the COVID-19 crisis on European households' financial fragility. Existing studies considering the European situation largely rely on data collected before the pandemic. Demertzis et al. (2020) and Midões

[2]See Chang et al. (1997) for an overview of studies capturing financial vulnerability using the availability of monthly household income equivalents.

(2020) use data from the European Union's Survey of Income and Labor Conditions (EU-SILC) and the European Central Bank's Household Finance and Consumption Survey (HFCS) to highlight substantial heterogeneity in the ability to handle unexpected expenses in the years leading up to the pandemic, both within and across EU member states,[3] and Midões and Seré (2021) draw similar conclusions from a tax-benefit micro-simulation using HFCS data.

My article contributes to the discussion on financial fragility in Europe by analyzing the situation in one of the largest economies of the European Union using data collected at the height of the second COVID-19 wave in the winter of 2020/21 and employing the measure proposed by Lusardi et al. (2011). My analyses contribute to the literature in three ways. First, using the measure of financial fragility proposed by Lusardi et al. (2011) adds to the literature on evaluating financial vulnerability by accounting more adequately for the unprecedented levels of economic uncertainty and anxiety during the COVID-19 pandemic compared to approaches that rely on total savings, self-reported household balance sheets, or simple yes-or-no measures. Furthermore, it provides insights into the coping strategies of liquidity constraint households by considering other informal sources of funds to handle unexpected expenses.

Second, I contribute to the discussion on financial fragility in times of economic crisis by using data collected at the height of the second wave of COVID-19 infections in Germany. This allows me to add insights to the largely US-based findings (e.g., Clark et al., 2021; Hasler et al., 2018; Lusardi et al., 2020) with my results based on data from a country with a substantially different social safety net and policy responses to the current crisis. Moreover, compared to other contributions that analyzed the situation in Europe using data collected before the pandemic (e.g., Demertzis et al., 2020; Wiersma et al., 2020), I am able to leverage survey data collected at the height of the second COVID-19 wave. This allows me to directly consider the financial setbacks households experienced over the first months of the pandemic.

Third, my article adds to the literature on financial literacy more broadly, and to the literature on financial knowledge in economic crises in specific. While many contributions focus on the implications of financial knowledge for achieving long-term savings goals, including retirement preparedness and stock market participation (see Lusardi and Mitchell, 2014 for an overview), relatively fewer contributions study the implications for the availability of emergency funds. Earlier contributions highlight the positive association between the size and availability of emergency funds and "objective" financial literacy scores (Babiarz & Robb, 2013) and subjective self-rated financial knowledge (Despard et al., 2020; Woodyard et al., 2017). My analyses consider objective and subjective aspects of financial knowledge and uncover a robust positive and significant association of financial literacy scores with the ability to cope with an unexpected expense. Besides, my results on the moderating effect of financial knowledge on the negative consequences of income losses relate to the findings of Bucher-Koenen and Ziegelmeyer (2013), Grimes et al. (2021), and Klapper et al. (2013), who analyze how financial literacy mitigated the negative financial consequences for households in the aftermath of the crisis of 2007/08.

III. Data

III.i. Sample

The initial sample is based on a representative population survey covering various aspects of the social security system in Germany. A German polling institute conducted the survey on behalf of the Leibniz Centre for European Economic Research (ZEW) between October

[3]Note that the size of the unexpected expenses in the EU-SILC questionnaire differs across countries and over time. It corresponds to one-twelfth of the national at-risk-of-poverty threshold (irrespective of size and structure of household) two years before the interview. In 2009, the question about the ability to handle an unexpected expense covered an expense of EUR 885 in the German questionnaire. In 2019, the reference amount was EUR 1,100.

8 and December 9, 2020.[4] From this baseline survey, participants who consented to being re-contacted for a follow-up study are the initial sample of my main data source. Among those, the follow-up survey targeted the German-speaking labor force population aged 30 and above living in private households across Germany. Researchers from the University of Mannheim, the Leibniz Institute for Resilience Research (LIR), and the Leibniz Centre for European Economic Research (ZEW) jointly designed the survey questionnaire. Overall, of the 2,666 re-contacted respondents, 1,952 respondents participated in the follow-up survey (i.e., a response rate of 73,2%), with 70,3% complete interviews (N=1,875). The majority of interviews was conducted online ($N_{CAWI} = 1,850$), supplemented by telephone interviews ($N_{CATI} = 25$). All interviews took place between December 18, 2020, and January 14, 2021. To ensure representativeness and compensate for possible post-survey bias, we weight the descriptive statistics to approximate the distributions of the target population by household size, age, gender, highest school degree, and federal state through iterative steps.

III.ii. Variables

As outlined above, one central objective of the survey is estimating the financial fragility of German households. We measure the respondents' ability to deal with a medium-sized financial shock in a hypothetical scenario, using the question proposed by Lusardi et al. (2011). More specifically, we asked respondents the following question: "How confident are you that you could come up with EUR 2,000 if an unexpected need arose within the next month?" Respondents could answer that they can "certainly," "probably," "probably not," or "certainly not" come up with the amount within one month, or that they "do not know". A follow-up question to respondents certainly or probably unable to cope and those that did not know asked respondents to provide an estimate of an alternative amount of money they could raise instead within one month. In my analyses, I follow Clark et al. (2021), Lusardi et al. (2011), and Wiersma et al. (2020) and classify respondents who stated that they could *probably not* or *certainly not* come up with EUR 2,000 as financially fragile. The group of financially fragile respondents also includes respondents who "did not know" whether they could come up with the funds and reported a positive amount lower than EUR 2,000 in the follow-up question.[5]

Following the question on the ability to come up with the funds, we asked respondents about the strategies they would employ to raise the funds to handle an unexpected expense. We allowed respondents to give up to three answers. Respondents could choose to (1) use money they have put aside; (2) liquidate or sell investments (e.g., stocks, savings for retirement); (3) ask family or friends for help; (4) overdraw their checking- or savings accounts;[6] (5) take out a personal loan, or (6) sell valuable articles or other possessions. Furthermore, an open text box allowed respondents to add strategies they would use in case of an unexpected

[4]The survey contained actively recruited respondents ($N_{offline} = 1,010$) and active participants in an online panel ($N_{online} = 4,162$). The Computer Assisted Telephone Recruitment Interviews were conducted in a dual-frame procedure, including landline and mobile phone numbers. Respondents reached by landline phone numbers were selected by the *next birthday method* to ensure random draws within households, respondents reached by mobile phones were immediate targets for the survey. Of the 11,475 successful contacts by phone, 1,361 respondents agreed to participate in the study (i.e., 11.9% successful recruitments). The surveys were delivered as Computer Assisted Web Interviews (CAWI, $N_{CAWI} = 4,993$) or by pen and paper ($N_{P\&P} = 179$). In total, 5,172 individuals participated in this survey. 87% of them gave their consent to be contacted again for follow-up studies.

[5]Consequently, I exclude respondents who did not know whether they are able to come up with EUR 2,000 and did not answer the follow-up question from further analyses.

[6]The option "overdraft accounts" was not further specified and thus includes both arranged and unarranged overdrafts. In Germany, both the availability and credit lines of arranged and unarranged overdrafts depend on the regularity and amount of incoming payments to the respective account. In most cases, banks automatically grant arranged overdrafts. Each bank sets the interest rates individually, but the interest rate may not exceed twice the comparable market rate (i.e., the interest on loans of a similar size to lenders with comparable credit scores). During the interview period, the average effective yearly interest rate of revolving credits and overdrafts to private households in Germany was around 7.1 percent, and their volume was around EUR 28 bn. (Deutsche Bundesbank, 2021).

expense. However, only 17 respondents used the option to report an additional coping method, corresponding to less than one percent of the total sample.

Given the field time of the survey at the height of the second COVID-19 wave in Germany, I capture the financial setbacks respondents experienced during the COVID-19 pandemic by considering the changes in their household net income since the onset of the pandemic in March 2020. More specifically, we asked respondents "How has the monthly net income of your household developed during the COVID-19 crisis (since March 2020)?". If the income changed, respondents could enter the approximate difference in percent.[7]

In contrast to many other recessions, the pandemic dis-proportionally affected industries and occupations that require personal contact. To account for this, regressions analyzing the heterogeneity in handling income losses across levels of financial literacy include dummies for the respondent's employment industry.[8] The question targets the industry of the respondent's current employment or the industry the respondent worked in before becoming unemployed.

Following other studies documenting the association of financial knowledge with financial well-being and sound decision-making, I analyze how financial literacy relates to financial fragility and what role it could play in mitigating the adverse effects of income losses during the pandemic. To capture financial knowledge, I use the responses to the "Big-3" financial literacy questions proposed by Lusardi and Mitchell (2011) and two additional questions on debt literacy by Lusardi and Tufano (2015), including one question on compounding credit interest and one question on loan repayment. As commonly used in the literature, I create count measures on the number of correctly answered questions. The "Big-3" indicator adds the number of correct answers to the financial literacy questions on compound interest, inflation, and risk diversification.[9] The "FL-5" indicator adds the number of correct answers to all financial literacy questions included in the survey (i.e., also considers the questions on credit interest and loan repayment from the debt-literacy questionnaire of Lusardi and Tufano, 2015).

Recent contributions to the literature underlined the confidence in financial knowledge as a critical determinant for sound financial decision-making (Babiarz & Robb, 2013; Bucher-Koenen et al., 2021; Despard et al., 2020; Van Rooij et al., 2012; Woodyard et al., 2017). Specifically, the ability to cope with unexpected expenses builds on the ability to plan financially. Individuals that unjustifiably exaggerate their financial knowledge may block the necessary financial scope for emergencies by investing in financial products they do not fully understand. On the other hand, those lacking confidence in their financial knowledge may refrain from financial innovation, resulting in lower returns in the medium to long run, which could likewise limit their emergency savings. A priori, the overall effect on financial fragility is unclear. To measure financial over- and underconfidence, I follow the approach of Van Rooij et al. (2012) and build indicators based on the distributions of the self-assessed financial knowledge and the performance in the financial literacy questionnaire. I creates quartiles of subjective assessment and objective performance. Subsequently, I classify respondents in a higher (*lower*) quartile of subjective assessment compared to the quartile of objective performance as overconfident (*underconfident*). Following this methodology uncovers that about 35% of the respondents are overconfident regarding their financial knowledge and about 30% are underconfident, which is comparable to the results of Van Rooij et al. (2012).[10]

In addition to financial knowledge and confidence, my analyses account for risk aversion and optimism. Risk aversion is associated with higher precautionary savings (see, e.g. Lusardi, 1998)

[7]The wording of the answer options was the following: "It increased by approximately __%", "It did not change", and "It decreased by approximately __%".

[8]To capture the industries of employment, we use the one-digit codes of the 2008 edition of the "Classification of Economic Activities" (*Klassifikation der Wirtschaftszweige (WZ 2008)*), based on the European Union's Statistical Classification of Economic Activities in the European Community (NACE).

[9]In contrast to the "Big-3" of Lusardi and Mitchell (2011), the first question targets compound interest and is more difficult. See appendix A for more information on the financial literacy measures, including the questionnaire's wording and information on the baseline survey's financial literacy experiment.

[10]For more information on the construction of the confidence measures, see appendix B.

and hence a lower probability of being unable to cope with unexpected expenses. Optimism is associated with higher debt-to-income ratios and with the inability to handle (even small) unexpected expenses (Hyytinen & Putkuri, 2018), though higher optimism is also associated with higher savings (Puri & Robinson, 2007). To elicit risk aversion, we draw upon the approach proposed by Dohmen et al. (2011) and ask respondents how willing they are to take risks in general, which they could answer on an 11-point scale ranging from "0 (not willing to take risks at all)" to "10 (very willing to take risks)". We elicit optimism by explaining the concept and subsequently asking about the self-rated optimism as follows: "The next question is about optimism. Optimists look to the future with confidence and mostly expect good things. Please rate yourself: How optimistic are you in general?" We recorded answers on an 11-point scale, with 0 referring to "not optimistic at all" and 10 to "very optimistic".

Lastly, I draw upon a wealth of additional demographic information collected in the baseline survey for the analyses of this study. Additional information from the baseline study includes the respondent's gender, age, educational attainment, household composition and the number of children, current labor market status, whether the respondent owns the accommodation they are living in, and information on the households' net disposable income, financial wealth and debt before the pandemic (that is, at the end of 2019). I included details about the variables used and the wording of the underlying items in appendix E.

IV. Results

In the following, I present my results on the ability to cope with an unexpected financial expense. First, I describe the level of financial fragility in the second wave of the COVID-19 pandemic across households in Germany, that is, the respondents' inability to come up with EUR 2,000 within one month in case of a financial emergency. Subsequently, I analyze the associations with different socioeconomic and demographic characteristics, financial literacy, and (over-) confidence in financial knowledge, and the income changes these households experienced since the onset of the pandemic.

IV.i. Financial fragility of the German labor force population

Table 1 provides descriptive statistics of the respondents' financial fragility. The first row shows the overall capacity to raise EUR 2,000 within one month. The results indicate that about 20.6% of the German-speaking working population aged 30 and above can *certainly not* come up with the funds. In addition, 10.3% can *probably not* come up with the money within one month during the second wave of the pandemic. Compared to the findings of Lusardi et al. (2011) on the financial fragility in Germany after the economic crisis in 2007/08, households in Germany are much less financially fragile in 2020-21. In 2009, roughly 50.5% are unable to handle an unexpected midsize expense of EUR 1,500. However, the results regarding the ability to handle unexpected shocks in the EU-SILC survey indicate a steady increase in the ability to come up with funds since 2009, which could be related to the period of economic growth in Germany over the last decade.[11] Moreover, curfews and lockdown measures during the pandemic limited consumption opportunities, resulting in involuntary savings. In additional tabulations not shown, I find that about one in five respondents (21.6%) report reduced spending due to a lack of consumption opportunities, and about 13% put more money aside since the onset of the crisis.

Recall that our survey included a follow-up question for respondents unable to cope with an unexpected expense of EUR 2,000 (and those that did not know) about how much they could come up with instead. About 62.2% of these respondents provided an estimate, of which about

[11] Note that the questionnaire in the EU-SILC deviates from the financial fragility measure employed in this article. See section II for more information.

97.8% indicated that they could come up with EUR 1,000 or less, and about 82.1% could come up with EUR 500 or less.

Table 1 illustrates differences across socioeconomic and demographic dimensions. Women, younger respondents, and singles living with children are less frequently able to handle an unexpected expense, which is in line with recent studies on the economic implications of this crisis (see, e.g. Alon et al., 2021; Hövermann & Kohlrausch, 2020; Schröder et al., 2020). Moreover, a larger share of respondents with higher levels of educational attainment reports being able to cope with unexpected expenses. Tenants less often report to be able to raise funds in the event of an unexpected expense compared to households that own the accommodation they occupy. Regarding the differences across East and West Germany, respondents in the East are slightly but significantly less frequently able to handle an unexpected expense compared with respondents from West Germany.

A substantial share of those not employed, working in Mini-Jobs,[12] or working in part-time jobs reports being certainly or probably unable to cope. At a first glance, the insignificant difference between self-employed and those working in dependent employment is surprising, considering recent evidence on the pandemic as a crisis of the self-employed (Graeber et al., 2021; Kritikos et al., 2020). One possible explanation for this deviation from other findings is this article's focus on the ability to cope with an *additional* mid-sized financial shock, instead of considering decreases in income or the reduction of working time experienced during the crisis. Moreover, early in the pandemic, many policies targeted micro-entrepreneurs and self-employed, irrespective of their wealth. Notably, self-employed individuals in Germany held significantly more wealth before the onset of the COVID-19 crisis on average (Beznoska, 2017).

Furthermore, table 1 highlights an unexpected inconsistency regarding the level of household debt. Surprisingly, households in the lowest and second-lowest debt brackets are the most financially fragile. However, the composition of debt differs substantially across these brackets. Notably, in additional analyses not included in the table, I find that the share of uncollateralized consumer debt is much higher in the lower quintiles of the debt distribution. On the other hand, households with substantial debt also tend to own mortgages and the respective assets to back them.[13] In additional questions, two-thirds of all indebted respondents report that they are able to service their debt without any problems, which applies to 83% of respondents in the highest debt bracket, but only to a significantly smaller share of 61% in the lowest debt category.

In contrast to these surprising findings, the results in table 1 also indicate that households in the upper categories of household net disposable income or financial wealth are more resilient toward unexpected expenses compared to the medium and lower levels.

Earlier studies on the ability to handle financial emergencies have consistently uncovered significant associations between financial fragility and measures of financial literacy (see, e.g. Babiarz & Robb, 2013; Clark et al., 2021; Lusardi et al., 2011; Wiersma et al., 2020). Hence, I tabulate responses to the financial literacy questionnaire, the summary indicators of financial literacy, and the confidence measures proposed by Van Rooij et al. (2012) across answers to the financial fragility question. Furthermore, I consider financial fragility across two dimensions of personal characteristics – optimism and risk aversion.

Note that for the financial literacy measures, I only count the number of correct answers and treat respondents who skipped the questions or indicated that they do not know the answer the same as respondents who answered incorrectly. Similarly, I treat participants in the financial

[12] Mini-jobs are a distinct form of marginal employment in Germany. Employers pay a lump sum for social insurance and employees may contribute to the first pillar of pension insurance or opt out. The upper tax-exempt income threshold for mini-jobs was EUR 450 per month at the time of the interviews.

[13] For instance, whereas 73% of respondents in the lowest debt category report holding consumer loans, only 28% of respondents in the utmost debt category report holding consumer loans. On the contrary, 83% of respondents in the highest debt category report holding mortgages, which is true for only 8% of respondents in the lowest debt bracket. Respondents with substantial debt also hold substantial amounts of assets. Whereas the median respondent in the lowest debt category reports a gross financial wealth between EUR 5,000 to less than EUR 25,000, the median respondent in the highest debt category owns assets worth EUR 50,000 up to EUR 75,000.

Table 1: *Financial fragility, by socioeconomic and demographic characteristics*

	Able to raise EUR 2,000 within a month?					
	Certainly	Probably	Probably not	Certainly not	Don't know	Obs.
	%	%	%	%	%	
All	44.7	21.1	10.3	20.6	3.3	1,866
Gender						
Male	53.3	19.0	9.2	16.3	2.3	884
Female	36.0	23.1	11.3	25.2	4.4	976
Age						
30 to 39	36.0	22.8	14.0	24.4	2.8	474
40 to 49	46.2	21.4	10.0	19.1	3.4	483
50 to 59	48.6	19.8	8.1	19.4	4.1	646
60+	53.7	19.2	7.2	17.6	2.2	263
Household type						
Single, no children	36.5	20.1	11.5	29.5	2.4	465
Single, with children	20.6	14.0	13.7	46.3	5.3	136
Couple, no children	50.5	20.9	7.8	15.5	5.2	667
Couple, with children	48.3	22.8	11.1	15.9	1.9	593
Education						
Haupt-/Volksschule	23.7	22.3	11.2	37.2	5.6	233
Mittlere Reife	39.4	22.1	12.3	23.1	3.1	939
Abitur	60.3	19.1	7.1	10.9	2.7	694
East Germany incl. East Berlin						
West Germany	46.3	20.2	9.8	20.4	3.4	1,513
East Germany	37.5	25.1	12.9	21.8	2.8	353
German Citizenship						
German Citizenship	44.6	21.0	10.3	21.2	3.0	1,633
No German Citizenship	46.1	21.1	10.2	17.0	5.6	232
Accommodation						
Tenant	34.6	19.5	12.2	29.7	4.0	1,027
Homeowner	57.2	23.0	7.9	9.5	2.4	839
Labor market status						
Full-time employed	53.4	20.7	9.1	13.6	3.1	1,203
Part-time employed	33.6	25.5	10.4	26.9	3.7	451
Mini-job	20.8	17.2	20.7	37.9	3.4	81
Not employed	21.0	12.3	14.2	49.0	3.5	131
Self-employed						
Not self-employed	45.1	20.9	10.5	20.3	3.3	1,670
Self-employed	42.0	22.7	8.8	23.6	2.9	196
Household net disposable income in EUR						
Below 1.500	16.2	15.7	15.9	48.3	3.9	381
[1.500; 2.500)	34.4	26.4	10.7	25.1	3.4	415
[2.500; 3.500)	51.2	23.1	9.7	13.3	2.7	380
[3.500; 4.500)	56.3	22.4	13.0	7.0	1.3	276
4.500 and above	82.8	13.1	2.0	1.0	1.1	227
Not answered	41.4	24.0	6.2	19.4	9.0	187
Wealth 2019 in EUR						
Below 5.000	14.4	18.7	17.3	46.7	3.0	437
[5.000; 25.000)	48.7	28.5	10.0	11.8	1.0	335
[25.000; 50.000)	61.0	23.7	6.2	8.1	1.0	189
[50.000; 75.000)	78.3	14.0	4.9	1.5	1.3	133
75.000 and above	75.8	16.0	5.2	2.3	0.6	231
Not answered	39.1	21.4	9.8	22.2	7.5	541
Debt 2019 in EUR						
No debt	50.3	18.3	9.2	18.9	3.3	1,014
Less than 10.000	31.7	22.8	13.0	30.6	2.0	202
[10.000; 50.000)	42.5	21.8	12.5	21.1	2.1	187
[50.000; 100.000)	36.0	33.4	16.8	13.7	0.0	102
[100.000; 200.000)	57.6	21.8	9.2	11.4	0.0	103
200.000 and above	58.2	28.5	4.9	7.6	0.8	64
Not answered	26.2	22.7	10.2	31.1	9.8	194

Note: All frequencies are weighted for representativeness of the target population described in section III. For all variables except the East Germany dummy, citizenship, and self-employment, the difference in the ability to cope between groups is statistically significant.

literacy experiment who admitted that they picked an answer randomly but did not know the answer as if they answered incorrectly, irrespective of their guess.[14]

For each financial literacy question included in the survey, the results in table 2 highlight a substantially higher share of respondents "probably" or "certainly" unable to handle an unexpected expense among respondents who answered incorrectly. The tabulations across both the "Big-3" and "FL-5" financial literacy indicators show that financial fragility decreases with the number of correctly answered questions. About one-third of respondents answered one or less of the easier "Big-3" questions correctly, and about one-fourth answered at most one question of the extended questionnaire correctly. The low share of respondents providing the correct answer indicates a considerable variation regarding basic financial literacy in the sample. Nonetheless, the results in table 2 underline that the share of financially fragile respondents decreases with the number of correctly answered questions, which holds for both indices of financial literacy.

Regarding self-assessed financial knowledge, it is notable that respondents perceive themselves as rather well informed. On a scale from "0 (very low)" to "10 (very high)", about 47% of our sample rates their financial knowledge 7 or higher. Fewer respondents who assessed themselves as highly knowledgeable regarding financial matters are *probably* or *certainly unable* to come up with the funds if an unexpected expense arose, compared to respondents who assessed their financial knowledge as low. In the following rows, I combine the number of correct answers to the financial literacy questionnaire and the self-assessed financial knowledge to compute a measure of financial confidence, following the approach of Van Rooij et al. (2012).[15]

The results in table 2 indicate that 74.0% of "underconfident" respondents are *certainly* or *probably able* to cope with an unexpected expense. Notably, this share is higher than among respondents with adequate self-assessment (about 59.1%) and among overconfident respondents (about 66.6%). These results differ from Wiersma et al. (2020) on a Dutch sample. The authors report that under- and overconfident individuals are more likely to be financially fragile than respondents with adequate assessment. However, note that I use a less precise measure of confidence based on the self-assessment of overall financial knowledge, in contrast to the approach of Wiersma et al. (2020), who rely on the respondents' expectations about the number of correct answers to the financial literacy questions.

Lastly, I consider the distribution of financial fragility across two dimensions of individual preferences - risk aversion and optimism. For ease of presentation in table 2, I group the responses on an eleven-point scale into high, medium, and low groups. I find surprisingly minor differences in financial fragility across the three risk tolerance levels. About one-third of the respondents are *probably* or *certainly unable* to come up with the funds in all three groups. Nevertheless, financial fragility varies considerably across self-rated optimism. About 42% of respondents who report being not optimistic are financially fragile, compared to 23% of the very optimistic respondents.

The bivariate associations in tables 1 and 2 helped to identify financially fragile subgroups of the population. For further insights into the relationship between socioeconomic and demographic characteristics and the role of financial literacy over and above these associations, I estimate five linear probability models.[16] In each of these regressions, the dependent variable is a dummy that equals one if the respondent reports being *certainly* or *probably unable* to handle an unexpected expense and zero otherwise. Model 1 includes only socioeconomic and demographic characteristics. In model 2, I add the number of correct answers to the "Big-3" financial literacy questions, which most contributions to the literature on financial fragility use.

[14] Appendix D.2 includes robustness checks using alternative specifications of financial literacy. The alternative specifications yield quantitatively and qualitatively similar results.

[15] See section III.ii and appendix A for more information on the financial knowledge questionnaire. See appendix B for the construction of the financial confidence measures and its methodological deviations from earlier contributions.

[16] The results are qualitatively and quantitatively similar when considering average marginal effects based on probit regressions (see appendix D.1).

Table 2: *Financial fragility, by financial literacy, financial confidence, and economic preferences*

	Able to raise EUR 2,000 within a month?					
	Certainly	Probably	Probably not	Certainly not	Don't know	Obs.
	%	%	%	%	%	
All	44.7	21.1	10.3	20.6	3.3	1,866
Interest question						
Incorrect	35.5	21.2	13.0	25.6	4.6	863
Correct	52.7	20.9	7.9	16.3	2.2	1,003
Inflation question						
Incorrect	22.8	23.6	12.7	33.0	8.0	419
Correct	51.5	20.3	9.5	16.8	1.9	1,447
Risk Diversification question						
Incorrect	29.4	22.3	13.4	30.0	4.9	658
Correct	53.4	20.4	8.5	15.3	2.4	1,208
Compound interest question						
Incorrect	36.7	23.1	11.6	24.4	4.1	955
Correct	53.1	18.9	8.9	16.6	2.4	911
Loan repayment question						
Incorrect	37.7	23.0	11.3	24.0	4.0	1,368
Correct	63.8	15.9	7.5	11.5	1.3	498
Correct answers in Big-3						
0	20.2	21.6	12.9	36.7	8.7	170
1	28.4	21.4	15.1	30.0	5.1	408
2	43.3	23.5	10.5	19.8	2.9	614
3	62.8	18.5	6.5	11.2	1.1	674
Correct answers in FL-5						
0	18.9	21.5	12.8	36.8	10.0	134
1	29.1	22.5	14.2	30.2	4.0	289
2	35.6	23.2	12.1	25.1	4.0	416
3	42.1	23.9	11.2	19.2	3.6	414
4	59.8	20.3	7.1	11.7	1.0	361
5	74.3	12.6	4.6	8.1	0.3	252
Self-assessed financial knowledge (scale 0-10)						
Low (0-3)	26.7	21.4	12.3	33.5	5.9	234
Medium (4-6)	38.0	20.9	12.1	25.3	3.7	760
High (7-10)	55.6	21.1	8.2	13.0	2.2	872
Confidence in fin. knowledge						
Underconfidence	55.9	18.1	7.8	16.1	2.2	526
Adequate self-assessment	38.5	20.6	11.1	25.6	4.1	675
Overconfidence	42.7	23.9	11.4	18.8	3.3	665
Risk tolerance (scale: 0-10)						
Risk averse (0-3)	44.8	19.2	11.1	21.1	3.8	728
Risk neutral (4-6)	43.6	22.1	9.4	20.9	4.0	720
Risk seeking (7-10)	46.7	22.4	10.4	19.2	1.3	418
Optimism (scale: 0-10)						
Not optimistic (0-3)	30.7	22.4	10.4	31.9	4.6	207
Somewhat optimistic (4-6)	35.6	20.0	12.1	28.3	4.1	591
Optimistic (7-10)	52.6	21.4	9.3	14.1	2.6	1,067

Notes: All frequencies are weighted for representativeness of the target population reported in section III. For all variables except risk tolerance, the difference in the ability to cope between groups is statistically significant.

In models 3, 4, and 5, I consider the "FL-5" measure that uses all financial literacy questions included in the survey. In model 4, I add the indicators of confidence in financial knowledge.

Recall that the overconfidence (underconfidence) indicator equals one if the respondent ranked their financial knowledge higher (lower) compared to their performance on the financial literacy questionnaire. I omit the reference category of adequate assessment of financial knowledge. In model 5, I control for personal characteristics by including optimism and risk tolerance. Respondents with higher values on the eleven-point risk tolerance scale are more risk-seeking, and those with higher values on the eleven-point optimism scale are more optimistic.

Table 3 presents the results of this exercise. They essentially confirm the findings of the previous cross-tabulations. The baseline specification in model 1 shows significantly negative associations of higher ages and financial fragility. This implies older respondents are less financially fragile than younger respondents in the reference category. The baseline specification in model 1 confirms that the number of children living in a household is associated with a higher probability of being unable to cope with an unexpected expense: An additional child is associated with a lower probability of being able to handle an unexpected expense of about 5 percentage points. Similar to the bi-variate results, the regressions confirm a significantly negative effect of higher education on financial fragility. Compared to respondents with a degree from a *Haupt-/ Volksschule*, respondents with *Abitur* are about 11 percentage points less likely to report being unable to handle an unexpected expense of EUR 2,000.[17]

Table 3: *LPM on the inability to handle an unexpected expense within one month*

	(1) LPM	(2) LPM	(3) LPM	(4) LPM	(5) LPM
Female	0.0492**	0.0348*	0.0320	0.0305	0.0335
	(0.0208)	(0.0210)	(0.0213)	(0.0213)	(0.0216)
Age (Ref. = Younger than 40)					
40 to 49	-0.0545**	-0.0506*	-0.0531**	-0.0518*	-0.0460*
	(0.0268)	(0.0266)	(0.0267)	(0.0267)	(0.0270)
50 to 59	-0.0444*	-0.0390	-0.0406	-0.0399	-0.0345
	(0.0257)	(0.0255)	(0.0255)	(0.0255)	(0.0260)
60+	-0.0526*	-0.0464	-0.0498	-0.0481	-0.0385
	(0.0318)	(0.0316)	(0.0316)	(0.0316)	(0.0320)
No. of children in HH	0.0499***	0.0493***	0.0497***	0.0491***	0.0487***
	(0.0111)	(0.0111)	(0.0111)	(0.0111)	(0.0111)
Couple	0.00255	-0.00106	-0.00325	-0.00252	0.00274
	(0.0238)	(0.0238)	(0.0239)	(0.0238)	(0.0241)
Education (Ref. = Haupt-/Volksschule)					
Mittlere Reife	-0.0322	-0.0221	-0.0239	-0.0230	-0.0175
	(0.0315)	(0.0316)	(0.0316)	(0.0319)	(0.0324)
Abitur	-0.111***	-0.0868***	-0.0866**	-0.0857**	-0.0800**

[17] I capture the educational attainment using the respondent's highest school-leaving certificate. *Hauptschule* or *Volksschule* corresponds to lower secondary education certificates (ISCED Level 2). The mid category *Mittlere Reife* is a school leaving certificate usually awarded after ten years of schooling. Across different federal states, the names of this certificate vary (including *Realschulabschluss*, *(Qualifizierter) Sekundarabschluss I*, *Mittlerer (Schul-/Bildungs-)Abschluss*, *Fachoberschulreife*, *Wirtschaftsschulabschluss*, *Werkrealschulabschluss*, or *Abschluss der Polytechnischen Oberschule nach der 10. Klasse*, the latter which was part of the education system in the former GDR). It corresponds to a higher secondary education certificate (ISCED Level 2). The last category *Abitur* includes the *Allgemeine Hochschulreife*, which corresponds to the upper secondary general level, and *Fachhochschulreife*, *Fachabitur* and *fachgebundenes Abitur*, all of which correspond to the upper secondary vocational education.

	(0.0328)	(0.0336)	(0.0339)	(0.0342)	(0.0346)
Labor Market Status (Ref. = Full-time)					
Part-time employed	0.0425*	0.0430*	0.0432*	0.0445*	0.0486*
	(0.0254)	(0.0254)	(0.0254)	(0.0255)	(0.0256)
Marginal Employment (Mini-job)	0.124***	0.120**	0.122**	0.122**	0.119**
	(0.0478)	(0.0478)	(0.0478)	(0.0482)	(0.0488)
Not employed	0.163***	0.164***	0.165***	0.159***	0.153***
	(0.0404)	(0.0399)	(0.0400)	(0.0400)	(0.0405)
Self-employed	0.0379	0.0388	0.0414	0.0444	0.0374
	(0.0313)	(0.0314)	(0.0314)	(0.0315)	(0.0319)
Homeowner	-0.134***	-0.127***	-0.129***	-0.127***	-0.132***
	(0.0217)	(0.0217)	(0.0216)	(0.0217)	(0.0220)
East Germany	0.0130	0.0141	0.0118	0.0115	0.0107
	(0.0257)	(0.0255)	(0.0256)	(0.0256)	(0.0257)
No German Citizenship	-0.0155	-0.0213	-0.0222	-0.0225	-0.0233
	(0.0267)	(0.0265)	(0.0264)	(0.0265)	(0.0267)
Household net disposable income in EUR (Ref. = [2.500; 3.500))					
Below 1.500	0.281***	0.275***	0.273***	0.271***	0.255***
	(0.0358)	(0.0360)	(0.0359)	(0.0358)	(0.0364)
[1.500; 2.500)	0.0635**	0.0582*	0.0581*	0.0566*	0.0535*
	(0.0303)	(0.0302)	(0.0302)	(0.0302)	(0.0304)
[3.500; 4.500)	-0.0139	-0.0153	-0.0153	-0.0149	-0.0139
	(0.0299)	(0.0298)	(0.0298)	(0.0298)	(0.0299)
4.500 and above	-0.0911***	-0.0865***	-0.0856***	-0.0849***	-0.0792***
	(0.0276)	(0.0274)	(0.0273)	(0.0272)	(0.0275)
Not answered	-0.0368	-0.0355	-0.0364	-0.0361	-0.0356
	(0.0413)	(0.0409)	(0.0409)	(0.0408)	(0.0407)
Household fin. wealth in 2019 in EUR (Ref. = [25.000; 50.000))					
Below 5.000	0.285***	0.272***	0.274***	0.272***	0.271***
	(0.0385)	(0.0386)	(0.0385)	(0.0384)	(0.0386)
[5.000; 25.000)	0.0112	0.00562	0.00788	0.00805	0.00503
	(0.0350)	(0.0349)	(0.0349)	(0.0348)	(0.0350)
[50.000; 75.000)	-0.0301	-0.0312	-0.0276	-0.0294	-0.0374
	(0.0356)	(0.0354)	(0.0354)	(0.0353)	(0.0351)
75.000 and above	0.0123	0.00801	0.0136	0.0150	0.0106
	(0.0324)	(0.0318)	(0.0319)	(0.0320)	(0.0321)
Not answered	0.108***	0.0946***	0.0967***	0.0941***	0.0868**
	(0.0349)	(0.0349)	(0.0348)	(0.0347)	(0.0348)
Level of debt in 2019, in EUR (Ref. = [50.000; 100.000))					
No debt	-0.0861**	-0.0924**	-0.0954**	-0.0924**	-0.0921**
	(0.0407)	(0.0407)	(0.0406)	(0.0407)	(0.0412)

Less than 10.000	0.0235	0.0145	0.00979	0.0115	0.0106
	(0.0512)	(0.0512)	(0.0511)	(0.0512)	(0.0517)
[10.000; 50.000)	0.00255	-0.00355	-0.00562	-0.00439	-0.00551
	(0.0486)	(0.0487)	(0.0484)	(0.0485)	(0.0491)
[100.000; 200.000)	0.0207	0.0186	0.0178	0.0198	0.0247
	(0.0551)	(0.0545)	(0.0544)	(0.0543)	(0.0547)
200.000 and above	-0.0447	-0.0457	-0.0417	-0.0431	-0.0405
	(0.0535)	(0.0537)	(0.0536)	(0.0537)	(0.0541)
Not answered	0.0237	0.00340	-0.00207	-0.00128	0.00794
	(0.0508)	(0.0515)	(0.0515)	(0.0516)	(0.0521)
Correct answers in Big-3		-0.0417***			
		(0.0114)			
Correct answers in FL-5			-0.0277***	-0.0335***	-0.0329***
			(0.00741)	(0.00919)	(0.00936)
Confidence in financial knowledge (Ref. = adequate self-assessment)					
Underconfidence				0.00125	0.00100
				(0.0253)	(0.0259)
Overconfidence				-0.0415*	-0.0406*
				(0.0227)	(0.0228)
Optimism					-0.0117**
					(0.00489)
Risk seeking					0.00446
					(0.00410)
Constant	0.269***	0.358***	0.358***	0.385***	0.432***
	(0.0635)	(0.0696)	(0.0692)	(0.0713)	(0.0779)
Observations	1808	1808	1808	1808	1784
R2	0.331	0.337	0.337	0.338	0.335
Adj. R2	0.320	0.325	0.325	0.325	0.321

Notes: This table reports the coefficients of a linear probability model. The dependent variable is a dummy equal to 1 if the respondent reports being certainly or probably unable to cope and zero if the respondent reports being certainly or probably able to cope. Regressions using financial literacy measures include a dummy for the Financial Literacy Experiment treatment status (see Appendix A for further details). Robust standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Working in marginal employment (Mini-jobs), being not employed, or to a lesser degree, working in part-time employment, are all significantly positively associated with financial fragility, compared to those in full-time employment. The results in table 3 confirm the bivariate results and do not show a significant association between self-employment and financial fragility. Respondents with net household disposable incomes below EUR 2,500 per month, with financial wealth below EUR 5,000, or those who refused to answer the question about their financial wealth in 2019 are significantly more likely to be unable to handle an unexpected expense compared to respondents in the reference categories. In contrast, not holding any debt is associated with lower financial fragility. Similarly, home ownership is significantly negatively associated with financial fragility: compared to tenants, homeowners are about 13 percentage points less likely to be unable to cope with an unexpected expense.

All models using measures of financial literacy underline its significantly negative association

with the inability to cope with unexpected expenses. Answering one additional question of the "Big-3" correctly is associated with a lower probability of being unable to cope of 4.2 percentage points. One additional correct answer in the "FL-5" is associated with a 2.8 percentage points lower probability of being financially fragile. This association is highly significant even when controlling for confidence in financial knowledge, optimism and risk tolerance. Overall, these results are in line with the seminal findings of Lusardi et al. (2011), the results for Dutch households (Wiersma et al., 2020), and for US households during the pandemic (Clark et al., 2021).

However, there are remarkable differences to earlier contributions. My results regarding significant gender differences in the ability to handle unexpected expenses bridge the findings of Lusardi et al. (2011), who report women to be significantly less likely to be able to cope with an unexpected expense, to the findings of Wiersma et al. (2020) and Clark et al. (2021), who find no significant association between financial fragility and gender. The findings in table 3 underline that the measurement of financial literacy is critical in this regard. While these results confirm a significantly positive relationship when controlling only for demographics, socioeconomic characteristics, and the responses to the "Big-3", using the broader "FL-5" measure reduces the association of gender and financial fragility considerably. Overall, the results suggest that the additional information of the debt literacy questionnaire contains valuable information that accounts for a share of the association between gender and financial fragility.

Furthermore, my results indicate a small and negative association between confidence in financial knowledge and the inability to cope with unexpected expenses. Compared with respondents who adequately assess their financial knowledge, respondents who are overly confident about their financial knowledge are about 4.1 percentage points less likely to be unable to handle an unexpected expense. However, this result is not robust. When turning to the probit specification in table D.2 in appendix D.1, the results are qualitatively similar but insignificantly different from zero. This inconclusive result is in line with earlier findings, with some authors finding positive effects of high subjective financial knowledge and sound financial behavior (eg. Babiarz & Robb, 2013; Despard et al., 2020; Lind et al., 2020; Robb & Woodyard, 2011), others find negative associations (eg. Balasubramnian & Sargent, 2020; Kim et al., 2019; Robb et al., 2015; Woodyard et al., 2017).

My results also indicate that optimism is highly significantly negatively associated with the ability to handle an unexpected expense. Ranking oneself one point higher on the optimism scale is associated with a one percentage point lower chance of being unable to cope with an unexpected expense. This finding, therefore, adds to the insights that underline the importance of optimism for sound financial decision-making (Angelini & Cavapozzi, 2017; Hyytinen & Putkuri, 2018; Puri & Robinson, 2007) and shows that controlling for this dimension is an important extension to earlier approaches.

In contrast to the results regarding optimism, self-assessed risk tolerance appears to be insignificantly associated with financial fragility. One possible channel behind this surprising finding could lie in the savings behavior of risk-averse respondents. Risk-averse individuals could prefer safe but illiquid investments (e.g., life insurance policies and Riester Pensions) over riskier, liquid investments (stocks and corporate bonds), which could make their savings less accessible within one month.

All in all, my results uncover several associations worth noting. While about one in three households is *probably* or *certainly unable* to handle an unexpected expense within one month, I find some subgroups of the working-age population in Germany to be financially fragile. Households with children, those with lower educational attainment, in atypical employment situations, tenants, and those with low net disposable income or financial wealth are especially vulnerable to unexpected expenses. While financial literacy is robustly and highly significantly associated with lower financial fragility, gender and risk aversion appear to be less relevant for financial fragility.

IV.ii. Income losses and the moderating effect of financial literacy

In contrast to the economic downturn and financial crisis of 2007/08, the COVID-19 pandemic immediately affected the financial situation of many households in Germany. While the protection against dismissal is substantial in Germany and the overall social safety net is more tightly knit, the pandemic had a significant initial impact on the labor market. Compared to October 2019, unemployment increased by one-fourth, and short-time work was massively expanded in the first months of the crisis - though it decreased again over the summer (Eichhorst & Rinne, 2020). Our data allow me to study income changes during the first months of the pandemic, analyze how income losses increased the financial fragility of affected households, and how differences in financial literacy moderate this association.

Table 4 highlights the relationship between the ability to cope with an unexpected expense and changes in the households' monthly net income since the onset of the crisis in March 2020. The results underline that higher income losses are associated with higher financial fragility: Among households that received income increases, only one in six is financially fragile. The majority of respondents did not face any significant income changes, and only one in four of them is *probably* or *certainly unable* to cope with an unexpected expense of EUR 2,000. In contrast, almost half of the respondents who faced an income reduction between 20% and 35% are financially fragile, and two-thirds of those losing 35% or more of their income are unable to cope with an unexpected expense.

Table 4: *Financial fragility and income changes since the onset of the pandemic*

	Able to raise EUR 2,000 within a month?					
	Certainly	Probably	Probably not	Certainly not	Don't know	Obs.
	%	%	%	%	%	
All	44.7	21.1	10.3	20.6	3.3	1,866
Income change since onset of the crisis						
Income increase	66.9	17.4	4.2	10.9	0.6	129
No sig. change	48.0	21.5	9.8	17.3	3.4	1,272
Lost up to -10%	47.8	24.1	13.8	12.7	1.6	116
Lost up to -20%	31.9	23.8	10.1	30.5	3.7	122
Lost up to -35%	25.5	24.7	16.3	30.2	3.3	104
Lost -35% and more	16.3	12.6	14.3	53.2	3.5	112

Note: All frequencies are weighted for representativeness of the target population described in section III.

To receive insights into the associations between income losses and financial fragility, and how financial literacy can mitigate the adverse effects of these income shocks, I use multivariate regressions that account for a wide range of socioeconomic and demographic characteristics. To facilitate the interpretation of the results, I normalized both the indicator of income changes and the financial literacy measure based on all financial literacy questions included in our survey.[18] Column 1 of table 5 serves as a reference and corresponds to the model presented in column 5 of table 3. This analysis reveals that a one standard deviation increase in the level of financial knowledge measured by using all financial literacy questions included in our survey (FL-5) is associated with a decrease in financial fragility of about 4.9 percentage points. In column 2, the

[18]To account for the different survey modes in the treatment and control group of the financial literacy experiment, I normalize the count measures separately in both treatment conditions and add an experimental group dummy in all regressions. The results are qualitatively comparable when using alternative measures of financial literacy, as table D.5 in appendix D.2 shows.

significantly negative coefficient of income changes highlights that income losses are associated with *higher* financial fragility, and income increases are associated with *lower* financial fragility. Note that a one standard deviation below average income change corresponds to a loss of about 23% of the household's monthly net income. An income loss of this size is associated with a 7.4 percentage points higher chance of being financially fragile. Evaluated against the baseline chance of being financially fragile of 32.8%, this corresponds to a 22.5% increase. Financial literacy has a remarkably stable association with financial fragility. When controlling for income changes, my results indicate that a one standard deviation higher level of financial knowledge is associated with about 5.0 percentage points lower chance of being financially fragile.

In addition to these results, the model presented in column 3 dissects whether financial knowledge may support the ability to handle financial setbacks. When including the interaction of the normalized financial literacy measure and the normalized measure of income changes since the onset of the pandemic, the results are a first tentative indication in favor of the moderating effect of financial knowledge. At the mean level of financial literacy, a one standard deviation below average income change (corresponding to an income loss of about 23%) is associated with a 7.5 percentage point higher chance of being financially fragile. Moreover, the negative coefficient of the normalized financial literacy measure implies that having a one standard deviation above-average level of financial literacy is associated with a less severe impact of income losses. Moreover, the positive coefficient of the interaction term indicates that at an above-average level of financial literacy, income losses are less strongly associated with financial fragility. This moderating effect of about 2.4 percentage points is significant at the five percent level.

Table 5: *LPM on financial fragility, financial literacy and income losses*

	(1) LPM	(2) LPM	(3) LPM	(4) LPM
Correct answers in FL-5 (norm.)	-0.0491***	-0.0495***	-0.0503***	-0.0500***
	(0.0139)	(0.0137)	(0.0137)	(0.0137)
Income change during pandemic (norm.)		-0.0741***	-0.0749***	-0.0667***
		(0.0113)	(0.0109)	(0.0111)
Correct answers in FL-5 (norm.) × Income change during pandemic (norm.)			0.0243**	0.0222*
			(0.0121)	(0.0121)
Constant	0.345***	0.328***	0.328***	0.192
	(0.0740)	(0.0735)	(0.0732)	(0.127)
Socioeconomic & demographic controls	Yes	Yes	Yes	Yes
Controls for preferences	Yes	Yes	Yes	Yes
Industry of empl. controls	No	No	No	Yes
Observations	1784	1775	1775	1775
R2	0.335	0.356	0.358	0.376
Adj. R2	0.321	0.341	0.343	0.354

Note: The dependent variable equals one if the respondent is *certainly not* or *probably not* able to handle unexpected expense, and 0 otherwise. Socioeconomic and demographic controls include gender, age, number of children, marital status, education, labor market status, self-employment, homeownership, East/West dummy, citizenship dummy, and controls for the available household net income, the level of wealth and debt in 2019. Preference controls include indicators for confidence in financial knowledge, optimism, and risk-aversion. All regressions include a dummy for the Financial Literacy Experiment treatment status (see Appendix A for further details). Industry of employment controls are WZ-2008 classification dummies. I normalize the income change since the onset of the pandemic by subtracting the mean income change and dividing by the standard deviation. Standard errors in parentheses.* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

While these regressions control for a large set of socioeconomic and demographic characteristics, and differences in risk tolerance, optimism, and confidence, the associations could be driven by the unobserved heterogeneity across respondents with different levels of financial literacy. Both financial knowledge and the probability to experience income losses in the first months of the pandemic could be driven by omitted variables. For instance, some industries associated with high financial literacy, such as the banking sector, were less severely affected by the negative economic consequences of the pandemic, compared to sectors where financial literacy might be less widespread. To limit these concerns to some degree, I add dummies for the industry of the respondents' current or last employment. Adding these dummies does not substantially change the results, as column 4 of table 5 shows.

Overall, these results underline that households hit more severely by income losses during the first months of the pandemic report significantly less often to be able to handle an unexpected expense. Furthermore, I find that higher financial literacy is associated with a more muted effect of income losses on the ability to handle unexpected expenses. One plausible interpretation of this finding is that financial literacy could provide some protection for households facing income losses.

IV.iii. Household's strategies to cope with unexpected expenses

I examined the association between financial fragility and socioeconomic or demographic characteristics, highlighted the pandemic-related income changes associated with financial fragility, and analyzed how financial literacy may help mitigate the effect of income losses on the ability to cope with an unexpected expense. However, the ability to capture the respondents' coping strategies for financial emergencies is a substantial advantage of the financial fragility measure proposed by Lusardi et al. (2011). This section gives insights into the choice of strategies respondents would use when facing unexpected expenses, how households would combine these strategies, and how the strategies differ among financially fragile respondents and respondents who are not.

As described in section III.ii, following the question on the ability to cope, [19] our survey asked respondents how they would come up with the funds if an unexpected need arose. The survey presented a list of six coping strategies and an open-text field. Participants are able to choose up to three coping strategies.

The last column of table 6 shows the overall distribution of the coping strategies. Most households (79.0%) report having rainy day savings available. Notably, my results indicate that a much larger share would access rainy day savings, compared to the results on German households presented in Lusardi et al. (2011). In the aftermath of the financial crisis, only 54.8% of German households could access emergency funds. One potential explanation for this considerable divergence is the growth in financial savings over the last decade, which may have increased the share of households with rainy day savings.[20] Furthermore, respondents in our sample reported involuntary savings due to limited consumption opportunities caused by curfews and lockdown measures, as described in section IV.i.

Relying on overdraft lines of savings- or checking accounts (19.8%) is a more commonly reported strategy, compared with selling financial assets (10.4%) and asking family or friends for financial support (13.3%). Taking out a loan (6.0%) or selling valuables (5.5%) are even less often used in the overall sample. Only 17 respondents reported other strategies in the open text

[19] Respondents who indicate that they are *probably* or *certainly unable* to raise EUR 2,000 received an additional question in which they are able to specify a lower amount they could raise within one month. We asked respondents who could *certainly*, or *probably* come up with EUR 2,000 as well as respondents who specified a lower amount about the strategies they would use to raise the money.

[20] As the data of Deutsche Bundesbank (2019) show, financial savings in Germany grew substantially at the mean, median, 25th, and 75th percentile of the distribution of financial wealth in the ten years following the survey of Lusardi et al. (2011).

field.[21]

Analyzing the choice of strategies across the number of reported strategies offers additional insights. First, most households report relying on only one strategy (75.3%). Among those, most respondents rely on rainy day savings. All other strategies are rarely used in isolation. Only 7.9% of the single-strategy households report that they would use overdraft credit lines of their savings- or checking accounts. Second, only 14.6% of households would combine two strategies to cope, and 10.1% report combining three strategies. Among respondents combining two or three different approaches to handle unexpected expenses, most respondents have access to some rainy day savings (70.7% and 76.7% among respondents using two or three strategies, respectively). Regardless, many complement these savings by overdrawing their accounts. Every second respondent who relies on two coping strategies, and two out of three respondents relying on three coping strategies would use their overdraft lines of credit. Hence, the popularity in the total sample is mainly driven by respondents supplementing other approaches with their overdraft lines of credit. Third, the results underline a substantial share of respondents who would have to dismantle their real or financial assets or take up debt to handle an unexpected expense. Overall, about one in three respondents able to handle an unexpected expense of EUR 2,000 or less would rely to some degree on selling financial or real assets, taking out loans, or using their overdraft lines of credit.

Recall that "financially fragile" respondents who would be *probably* or *certainly unable* to come up with EUR 2,000 within one month could specify an alternative amount they could come up with. Respondents who provided a non-zero amount are able to report their coping strategies. This allows me to analyze differences in the choices of coping strategies across the levels of financial fragility. Table 7 highlights the significant differences in coping strategies and the tendency to combine different resources to handle an unexpected expense. Notably, financially fragile respondents are significantly less likely to rely on rainy day savings. They report selling financial assets less often. Instead, these respondents rely on the support of family and friends more often. Furthermore, these respondents tend to rely on selling valuables and using their overdraft lines of credit. Compared to non-fragile respondents, they combine different coping strategies significantly more often.

Table 6: *Distribution of strategies to cope with unexpected expenses*

	Share of indicated group (%)			
Coping strategies	Chose one strategy	Chose two strategies	Chose three strategies	Total respondents
Rainy day savings	80.9	70.7	76.7	79.0
Sell fin. assets	4.0	21.4	42.3	10.4
Family or friends	4.4	30.0	55.6	13.3
Overdraft account	7.9	49.3	66.5	19.9
Take loan	0.5	13.0	36.2	6.0
Sell valuables	1.3	15.3	22.7	5.5
Other	1.0	0.5	0.0	0.8
No. of obs.	1196	231	161	1588
Share of respondents using resp. number of coping strategies	75.3	14.6	10.1	100.00

Notes: Frequencies weighted for representativeness of the population described in section III.

[21]The strategies reported in the open text field include cutting back non-essential spending (mentioned 11 times), working overtime (mentioned twice), taking an employer loan, paying by credit card, delaying repayment of student loans, or using expected windfall gains (each mentioned once).

Table 7: *Distribution of coping strategies across levels of financial fragility*

	Financial Fragility		
	Not fragile (%)	Fragile (%)	Difference
Rainy day savings	85.71	55.19	30.52***
Sell fin. assets	12.28	3.66	8.62***
Family or friends	8.31	30.98	-22.68***
Overdraft account	15.80	34.18	-18.38***
Take loan	5.95	6.03	-0.08
Sell valuables	3.04	14.28	-11.24***
Other	0.45	2.23	-1.78
Chose one strategy	78.12	65.31	12.81***
Chose two strategies	12.23	22.82	-10.59***
Chose three strategies	9.65	11.87	-2.22
Observations	1,245	343	

Note: Financial fragility refers to the ability to handle an unexpected expense of EUR 2,000 within one month. Respondents that indicated that they are certainly or probably *able* to handle the unexpected expense are classified as not fragile, respondents that indicated that they were certainly or probably *unable* are classified as financially fragile. Fragile respondents were asked about their strategies if they were able to come up with an amount lower than EUR 2,000 within one month, with an average amount of EUR 419.04. Frequencies weighted to achieve representativeness of the population described in section III. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

In addition to differences across levels of financial fragility, the choices of coping strategies also differ among respondents who report having lost income during the first months of the pandemic and those that did not. The results in table 8 highlight that respondents who faced income losses since the onset of the pandemic would significantly less often access rainy day savings to handle unexpected expenses. Instead, they would rely on family or friends for financial support, use their accounts' overdraft lines of credit, or sell valuables significantly more often. Moreover, respondents with income losses combine coping strategies significantly more often, compared to respondents who did not face significant income changes or reported an increase in income.

Table 8: *Distribution of coping strategies and income losses since the onset of the pandemic*

	Income loss since the onset of the pandemic		
	Did not lose income	Lost income	Difference
Rainy day savings	80.6	73.4	7.2***
Sell fin. assets	9.8	12.4	-2.7
Family or friends	11.1	20.9	-9.8***
Overdraft account	18.0	26.1	-8.1***
Take loan	6.3	4.8	1.5
Sell valuables	4.4	9.3	-4.9***
Other	1.0	0.4	0.6
Observations	1221	363	

Note: Frequencies weighted to achieve representativeness of the population described in section III. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Overall, these tabulations offer three insights in line with the results of Lusardi et al. (2011).

First, German households can respond to unexpected expenses during the second wave of the pandemic across different margins. While most households report having access to rainy day savings, many would supplement these provisions with other lines of formal or informal credit or resort to depleting their real or financial assets to cope with unexpected expenses. Second and related, the findings reveal that a narrow view of incomes and assets may overstate financial fragility. The tabulations of the strategic choices show a wide range of alternative lines of credit and strategies that are not accounted for in alternative approaches to analyzing financial fragility. Third, in addition to higher levels of financial fragility among respondents who experienced income losses during the first months of the pandemic, their coping strategies differ significantly from respondents who did not lose income. Fewer respondents who lost income report being able to access rainy day savings and those respondents report to combine various coping strategies significantly more often. Moreover, they tend to cope with an unexpected expense by overdrawing their accounts, selling valuables, or accessing their social networks for financial support.

V. Concluding Remarks

This article assesses the financial fragility of households in Germany at the height of the second wave of the COVID-19 pandemic. I provide descriptive empirical results on the associations between socioeconomic and demographic characteristics and the ability to cope with an unexpected emergency expense of EUR 2,000 within one month. I analyze how financial literacy, confidence in financial knowledge, and economic preferences relate to the ability to cope and consider how households are affected by income changes they experienced during the first months of the COVID-19 crisis. In addition, I examine income changes are associated with financial fragility among respondents with different levels of financial literacy. Lastly, I study the association between the strategies respondents would apply in case of an emergency expense and how income changes experienced since the onset of the crisis are related to the choice of coping strategies.

In December 2020 and January 2021, about one in three households was financially fragile and would have had difficulties facing an unexpected expense of EUR 2,000 within one month. Some subgroups of the population are particularly financially fragile: households with children; employees in marginal employment, part-time jobs or those not employed; tenants; people with lower educational attainment; low levels of monthly available net income or low levels of wealth are significantly less likely to be able to come up with EUR 2,000 in an emergency situation. My results also point towards the scarring effects of the economic crisis during the COVID-19 pandemic in Germany: Households that experienced more substantial income losses during the first months of the crisis are less likely able to come up with the means to handle an unexpected mid-size expense. However, my findings also highlight that financial literacy could be associated with less severe increases in financial fragility when households lose income. Among respondents able to cope with unexpected expenses, the majority report having rainy days savings available. Some households, especially those unable to come up with EUR 2,000, combine several sources, including their overdraft facilities, relying on their social networks and selling financial assets.

My results can neither confirm the strong association of confidence in financial knowledge with financial fragility, nor support earlier findings of substantial gender differences in the ability to handle unexpected shocks. However, my results confirm a strong and positive association between financial literacy and the ability to handle unexpected expenses. The associations are not limited to bi-variate correlations but also prevail in linear probability models controlling for a wide range of socioeconomic and demographic characteristics, optimism, confidence, and risk-aversion. Hence, my results add to the growing evidence on the association between financial knowledge and financial decision-making in general, and the importance of financial

knowledge for being resilient against unexpected expenses in particular. Importantly, my results uncover that a sound understanding of basic financial principles could mitigate the negative effects of income losses in times of economic crisis.

Importantly, my findings are descriptive in nature and cannot uncover the causes of households' financial fragility. My results rely on the variation in income changes during the first months of the pandemic to highlight how financial literacy may mute the association of income losses and financial fragility. However, income changes are unlikely randomly distributed across the population and could be related to unobserved characteristics, which severely limits my results. Lastly, it is essential to underline that the measurement of financial fragility implemented in my approach relies on a hypothetical scenario. While there is evidence for the concepts' adequacy in characterizing the financial well-being of households (Hasler et al., 2018), the respondents' behavior in acute economic distress may differ from their intended coping strategies.

Notwithstanding these limitations, policymakers ought to pay special attention to vulnerable subgroups of the population as the pandemic progresses. The associations uncovered in my analyses suggest that financial education programs could be a valuable tool to promote resilience against financial setbacks and help individuals cope with emergency expenses. Regardless, policies to foster financial knowledge may not be able to help those households already in financial woes from the COVID-19 crisis. In contrast to policies supporting long-term savings goals, there are no similar governmental endorsements to build rainy day funds in Germany. In contrast, numerous proposals to incentivize saving for emergencies are discussed in the US. One innovative approach is to introduce a rainy day savings component to the Earned Income Tax Credit (see, e.g. Halpern-Meekin et al., 2018) with the goal of supporting low-income households in building emergency savings. The main pillars of this approach (and similar proposals) are the simplification of tax declaration and the incentivization of higher tax refund savings rates. While the evaluations of large-scale pilot projects are promising (Azurdia & Freedman, 2016; Despard et al., 2022), tax filing is optional in Germany, and non-filing common among the less financially literate low-income taxpayers (Hauck & Wallossek, 2021), which may impede the effectiveness of these programs.

Overall, the results presented in this article are a starting point for studying the financial fragility of German households. Further research is needed to identify the cause and effect of the associations uncovered in this article.

VI. References

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Appendices

A. Financial literacy questionnaire and experiment

The first three questions of the financial literacy questionnaire used in our survey are closely related to the German translations of the "Big-3" questions of Lusardi and Mitchell (2011). Whereas the first two questions measure the respondents' basic understanding of interest rates and inflation, the third question is more advanced and evaluates the knowledge of risk diversification. In contrast to the interest rate question of Lusardi and Mitchell (2011), the first question of our survey covers compound interest and is, therefore, more complex. The fourth and fifth questions cover credit interest and loan repayment. Both draw upon the debt literacy questions proposed by Lusardi and Tufano (2015). The correct answer choices are in bold.

1. **Compound interest question:** Suppose you had EUR 100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow? **More than EUR 110** / Exactly EUR 110 / Less than EUR 110 / *Do not know / Refuse to answer*

2. **Inflation question:** Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After one year, would you be able to buy exactly the same as, more than, or less than today with the money in this account? More / Exactly the same / **Less than today** / *Do not know / Refuse to answer*

3. **Risk diversification question:** Do you agree with the following statement: "Buying a single company stock is less risky than investing in a mutual fund with stocks of similar companies"? I agree / **I disagree** / *Do not know / Refuse to answer*

4. **Credit interest question:** Suppose you take out a loan of EUR 1,000 from the bank at an interest rate of 20% per year. If you do not pay anything off, at this interest rate, how long will it take for the amount you owe the bank to double? Less than 2 years / **2 to less than 5 years** / 5 to less than 10 years / 10 years or more / *Do not know / Refuse to answer*

5. **Loan repayment question:** Suppose you have taken out a loan of EUR 3,000 with the bank. You pay the minimum payment of EUR 30 per month to the bank. The annual interest is 12% (or 1% per month). How many years will it take to pay off this loan? Less than 5 years / Between 5 and 10 years / Between 10 and 15 years / **Never, the debt will remain** / *Do not know / Refuse to answer*

Note that the options *Do not know / Refuse to answer* are not available to all survey respondents. A subset of the respondents are participants of an experiment that drew upon Bucher-Koenen et al. (2021). The treatment condition did not allow respondents to refuse to answer or state that they do not know the answer. After responding to any of the questions outlined above, the treated respondents are able to indicate that they guessed and did not actually know the answer. The control group received the regular financial literacy questionnaire with the option to skip questions and to answer "do not know".

Overall, the main sample used in this article includes 75% of the respondents who received the standard version of the financial literacy questionnaire (i. e., the control group of the experiment) and 25% who received the modified version of the questionnaire (i. e., the experimental treatment group). I include dummies for the respondents' experimental group status in all regressions that include measures of financial literacy. Moreover, instead of only summarizing the number of correct answers to build the "Big-3" and "FL-5" indicators, I do not count the number of correct responses from the treatment group of the experiment if respondents admitted guessing.

B. Confidence in financial knowledge

To capture respondents' "confidence in their financial knowledge", I follow Van Rooij et al. (2012) and build indicators of over- and underconfidence in financial knowledge based on a question about self-rated financial knowledge and the number of correctly answered financial literacy questions. Our survey captured self-rated financial knowledge by the following question: "How would you rate your knowledge regarding financial matters?" Respondents could rank themselves on an 11-point scale, ranging from "0 (low)" to "10 (high)".

Similar to the approach of Van Rooij et al. (2012), I grouped responses to the self-rated financial knowledge and the number of correct answers to the financial literacy questions into four groups of about equal size. Hence, financial overconfidence (underconfidence) captures higher (lower) scores on the self-rated financial knowledge scale compared to the performance in the financial literacy questionnaire. Both variables are binary and take the value of 1 if the respondent is over- or underconfident, respectively, and 0 if not. The reference category is adequate self-assessment. The measure of financial confidence deviates slightly from the approach of Wiersma et al. (2020), who use the respondents' expected number of correct answers to the financial literacy questions instead of the self-rated financial literacy.

I categorize 652 respondents as overconfident (34.8% of the total sample), 517 respondents are underconfident (27.6%), and 706 respondents (37.7%) rank equally high on both their actual performance on the financial literacy questionnaire and their self-assessed financial knowledge. The group sizes are comparable to those of Van Rooij et al. (2012, see appendix C.2).

Table B.1: *Components of financial confidence by our measure of financial confidence*

	Confidence in fin. knowledge			
	Underconfidence	Adequate self-assessment	Overconfidence	Obs.
	%	%	%	
Self-assessed financial knowledge				
(0) very low	25.2	74.8	0.0	30
(1)	52.7	47.3	0.0	23
(2)	32.1	67.9	0.0	60
(3)	46.2	53.8	0.0	122
(4)	38.0	62.0	0.0	153
(5)	42.3	57.7	0.0	327
(6)	31.9	24.0	44.1	283
(7)	17.3	25.3	57.3	371
(8)	24.2	22.4	53.4	297
(9)	0.0	23.2	76.8	129
(10) very high	0.0	25.4	74.6	80
Ranking of self-assessed financial knowledge				
1 (low)	40.7	59.3	0.0	715
2	31.9	24.0	44.1	283
3	20.3	24.1	55.7	668
4 (high)	0.0	24.1	75.9	209
Correct answers in FL-5				
0	0.0	61.3	38.7	135
1	0.0	51.2	48.8	291
2	0.0	45.5	54.5	417
3	38.2	16.9	44.9	414
4	42.9	43.2	13.9	364
5	80.3	19.7	0.0	254
Ranking of financial literacy (FL-5)				
1 (low)	0.0	50.2	49.8	843
2	38.2	16.9	44.9	414
3	42.9	43.2	13.9	364
4 (high)	80.3	19.7	0.0	254
Total	27.6	37.7	34.8	1,875

Note: Frequencies weighted for representativeness of the population described in section III.

C. Summary statistics by choice of coping strategy

	Rainy day savings	Sell fin. assets	Family or Friends	Overdraft account	Take loan	Sell valuables
Financial literacy						
Correct answers in Big-3 (0-3)	2.10	2.24	1.75	2.01	1.99	1.79
Correct answers in FL-5 (0-5)	2.95	3.26	2.39	2.78	2.78	2.52
Demographics						
Female (=1)	0.47	0.25	0.51	0.49	0.42	0.47
No. of children in HH	0.75	0.77	0.93	0.90	0.88	0.81
Not in a relationship (=1)	0.24	0.27	0.29	0.26	0.20	0.32
West Germany (=1)	0.83	0.87	0.82	0.87	0.84	0.85
East Germany (=1)	0.17	0.13	0.18	0.13	0.16	0.15
German Citizenship (=1)	0.88	0.85	0.86	0.88	0.85	0.86
No German Citizenship (=1)	0.12	0.15	0.14	0.12	0.15	0.14
Age						
30 to 39 (=1)	0.30	0.31	0.47	0.34	0.40	0.46
40 to 49 (=1)	0.27	0.31	0.29	0.32	0.38	0.26
50 to 59 (=1)	0.31	0.32	0.20	0.26	0.18	0.20
60+ (=1)	0.12	0.06	0.04	0.08	0.04	0.09
Educational attainment						
Haupt-/Volksschule (=1)	0.10	0.10	0.18	0.12	0.08	0.17
Mittlere Reife (=1)	0.50	0.43	0.45	0.54	0.51	0.45
Abitur (=1)	0.40	0.48	0.37	0.34	0.41	0.38
Employment status						
Full-time employed (=1)	0.67	0.78	0.53	0.68	0.73	0.52
Part-time employed (=1)	0.24	0.15	0.24	0.21	0.20	0.29
Marginal Empl. (Mini-job) (=1)	0.03	0.02	0.07	0.03	0.01	0.03
Not employed (=1)	0.06	0.05	0.16	0.08	0.05	0.15
Self-employment (=1)	0.09	0.14	0.13	0.14	0.07	0.21
Home ownership						
Tenant (=1)	0.48	0.52	0.73	0.56	0.57	0.63
Homeowner (=1)	0.52	0.48	0.27	0.44	0.43	0.37
Monthly household net income (in EUR)						
Below 1,500 (=1)	0.12	0.15	0.27	0.18	0.16	0.35
$[1,500; 2,500)$ (=1)	0.20	0.19	0.26	0.25	0.17	0.29
$[3,500; 4,500)$ (=1)	0.18	0.13	0.11	0.15	0.28	0.09
4.500 and above (=1)	0.17	0.16	0.07	0.12	0.15	0.03
Not answered (=1)	0.09	0.11	0.06	0.08	0.04	0.08
Household financial wealth 2019 (in EUR)						
Below 5,000 (=1)	0.15	0.15	0.38	0.24	0.23	0.39
$[5,000; 25,000)$ (=1)	0.21	0.24	0.18	0.20	0.27	0.18
$[50,000; 75,000)$ (=1)	0.10	0.15	0.04	0.08	0.06	0.08
75,000 and above (=1)	0.15	0.19	0.05	0.10	0.05	0.02
Not answered (=1)	0.27	0.20	0.26	0.30	0.32	0.28
Level of debt 2019 (in EUR)						
No debt (=1)	0.56	0.49	0.56	0.35	0.25	0.49
Less than 10,000 (=1)	0.09	0.15	0.14	0.17	0.24	0.13
$[10,000; 50,000)$ (=1)	0.11	0.05	0.09	0.14	0.18	0.10
$[100,000; 200,000)$ (=1)	0.06	0.06	0.04	0.09	0.09	0.08
200,000 and above (=1)	0.04	0.08	0.04	0.06	0.10	0.07
Not answered (=1)	0.08	0.11	0.08	0.11	0.04	0.10
Observations	1256	146	197	299	89	3190

Note: Frequencies are weighted for representativeness of the population described in section III.

D. Robustness checks

The following section includes the results of various robustness checks of the analyses presented in the main text.

Firstly, the results on the fragility of German households presented in section IV.i are based on linear probability models. In contrast, table D.2 in appendix D.1 displays the average marginal effects based on Probit regressions. Notably, the results are qualitatively similar to those presented in the main body.

Second, one concern regarding my findings is that they hinge critically on the answers to the debt-literacy questions. These debt literacy questions are less commonly used in the literature and may only represent a minor aspect of financial knowledge. Hence, the comparability to earlier results could be limited. Moreover, if my findings critically rely on these additional questions, my results could critically rely on the respondent's understanding of fundamental concepts of debt. To tackle this concern, I use two alternative specifications to capture the respondents' general financial knowledge. I restrict the information used to calculate the financial literacy indicator to the "Big-3" financial literacy questions and the credit interest question proposed by Lusardi and Tufano (2015). Subsequently, I further reduce the information to include only the "Big-3" financial literacy questions. Appendix D.2 presents the results. Irrespective of the specification used to estimate the association between financial knowledge and the ability to handle an unexpected expense, the findings are qualitatively similar to those presented in the main text. Furthermore, the results in table D.4 and table D.5 show that the mitigating effect of financial literacy is broadly confirmed when using much less information to measure financial knowledge.

Third, less financially literate individuals may not only perform worse on the financial literacy questionnaire but could also be less able to provide a (correct) approximation of their income changes since the onset of the pandemic. Two different mechanisms could be at work. First, less financially literate respondents could be less inclined to provide an approximation of their income change and instead choose to report no changes, irrespective of the actual realization. Second, less financially literate respondents could report less accurate estimates of their income changes. While it is likely that less financially literate respondents are more inclined to report rounded-off versions of actual income changes, the direction of misreporting is unclear. Note that the first problem would imply a downward bias of my estimates, and the second mechanism would imply larger standard errors but would not bias my estimates. To address these concerns, appendix D.3 presents the results of the moderation analysis when accounting only for the direction of income changes instead of using the distribution of income changes. The results of these exercises are qualitatively similar to those presented in the main text. Income losses are associated with a higher probability of being financially fragile, and the negative association of income losses with financial fragility is mitigated by higher levels of financial literacy.

Lastly, the financial fragility measure following Lusardi et al. (2011) asks about a specific amount of EUR 2,000. However, Gathergood and Wylie (2018) highlight recent theoretical contributions that emphasize households adjusting their consumption habits and commitments in line with their long-run income (see, e.g. Chetty & Szeidl, 2007; Chetty & Szeidl, 2016). If this is the case, the fixed amount of EUR 2,000 included in the financial fragility question would be less appropriate to capture an emergency expenditure for higher-income households. To address this concern, I use additional data collected in our survey. Our survey asked respondents to estimate how long they would be able to cover their living costs without having to borrow money, or having to move if their household lost its main source of income. The results in appendix D.4 show that using income-related measures (i.e., the ability to cover living

costs for at least one month or at least three months) yields qualitatively similar results as those based on the financial fragility question proposed by Lusardi et al. (2011).

D.1. Probit specifications

Table D.2: *Average marginal effects based on probit regressions on the ability to handle an unexpected expense within one month*

	(1) AME	(2) AME	(3) AME	(4) AME	(5) AME
Female	0.0458**	0.0308	0.0272	0.0267	0.0296
	(0.0203)	(0.0203)	(0.0205)	(0.0205)	(0.0209)
Age (Ref. = Younger than 40)					
40 to 49	-0.0474*	-0.0421*	-0.0445*	-0.0433*	-0.0376
	(0.0248)	(0.0246)	(0.0246)	(0.0246)	(0.0246)
50 to 59	-0.0456*	-0.0391	-0.0399	-0.0390	-0.0354
	(0.0248)	(0.0246)	(0.0246)	(0.0246)	(0.0248)
60+	-0.0471	-0.0404	-0.0442	-0.0418	-0.0326
	(0.0315)	(0.0313)	(0.0312)	(0.0313)	(0.0316)
No. of children in HH	0.0448***	0.0437***	0.0437***	0.0435***	0.0432***
	(0.0109)	(0.0107)	(0.0107)	(0.0108)	(0.0108)
Couple	0.00256	-0.000305	-0.00197	-0.00152	0.00366
	(0.0220)	(0.0219)	(0.0220)	(0.0220)	(0.0220)
Education (Ref. = Haupt-/Volksschule)					
Mittlere Reife	-0.0268	-0.0167	-0.0193	-0.0190	-0.0128
	(0.0298)	(0.0292)	(0.0292)	(0.0291)	(0.0296)
Abitur	-0.105***	-0.0811**	-0.0818***	-0.0816***	-0.0758**
	(0.0317)	(0.0317)	(0.0317)	(0.0316)	(0.0321)
Labor Market Status (Ref. = Full-time)					
Part-time employed	0.0375	0.0387	0.0397*	0.0409*	0.0450*
	(0.0242)	(0.0239)	(0.0240)	(0.0240)	(0.0241)
Marginal Employment (Mini-job)	0.110**	0.105**	0.107**	0.107**	0.102**
	(0.0498)	(0.0493)	(0.0493)	(0.0491)	(0.0500)
Not employed	0.141***	0.146***	0.147***	0.143***	0.135***
	(0.0404)	(0.0404)	(0.0404)	(0.0404)	(0.0407)
Self-employed	0.0519*	0.0518*	0.0563*	0.0591*	0.0509
	(0.0312)	(0.0310)	(0.0310)	(0.0311)	(0.0316)
Homeowner	-0.134***	-0.126***	-0.127***	-0.126***	-0.130***
	(0.0235)	(0.0234)	(0.0234)	(0.0234)	(0.0236)
East Germany	0.00591	0.00862	0.00676	0.00658	0.00467
	(0.0233)	(0.0231)	(0.0230)	(0.0230)	(0.0230)
No German Citizenship	-0.0128	-0.0180	-0.0185	-0.0195	-0.0204
	(0.0278)	(0.0275)	(0.0275)	(0.0275)	(0.0277)

Net household income in EUR (Ref. = [2,500; 3,500))					
Below 1,500	0.259***	0.250***	0.247***	0.244***	0.229***
	(0.0375)	(0.0372)	(0.0372)	(0.0372)	(0.0375)
[1,500; 2,500)	0.0584*	0.0508*	0.0501	0.0492	0.0464
	(0.0309)	(0.0306)	(0.0306)	(0.0306)	(0.0307)
[3,500; 4,500)	-0.0211	-0.0226	-0.0226	-0.0222	-0.0211
	(0.0332)	(0.0330)	(0.0330)	(0.0330)	(0.0330)
4,500 and above	-0.153***	-0.153***	-0.151***	-0.152***	-0.146***
	(0.0357)	(0.0362)	(0.0365)	(0.0365)	(0.0369)
Not answered	-0.0355	-0.0373	-0.0373	-0.0374	-0.0372
	(0.0385)	(0.0384)	(0.0384)	(0.0384)	(0.0384)
Household net disposable income in EUR (Ref. = [25,000; 50,000))					
Below 5,000	0.244***	0.229***	0.230***	0.228***	0.225***
	(0.0390)	(0.0391)	(0.0389)	(0.0390)	(0.0394)
[5,000; 25,000)	0.0107	0.00643	0.00818	0.00755	0.00329
	(0.0355)	(0.0357)	(0.0356)	(0.0357)	(0.0359)
[50,000; 75,000)	-0.0706	-0.0686	-0.0665	-0.0682	-0.0806*
	(0.0452)	(0.0461)	(0.0461)	(0.0460)	(0.0459)
75,000 and above	-0.0368	-0.0456	-0.0405	-0.0404	-0.0463
	(0.0437)	(0.0440)	(0.0442)	(0.0444)	(0.0444)
Not answered	0.0990***	0.0847**	0.0861**	0.0829**	0.0740**
	(0.0357)	(0.0360)	(0.0358)	(0.0359)	(0.0362)
Level of debt in 2019, in EUR (Ref. = [50,000; 100,000))					
No debt	-0.0968**	-0.103**	-0.106**	-0.103**	-0.104**
	(0.0451)	(0.0448)	(0.0451)	(0.0450)	(0.0452)
Less than 10,000	0.00340	-0.00597	-0.0104	-0.00834	-0.0108
	(0.0519)	(0.0514)	(0.0516)	(0.0515)	(0.0518)
[10,000; 50,000)	-0.0105	-0.0144	-0.0174	-0.0157	-0.0185
	(0.0516)	(0.0512)	(0.0514)	(0.0513)	(0.0515)
[100,000; 200,000)	0.0292	0.0252	0.0242	0.0267	0.0301
	(0.0585)	(0.0582)	(0.0583)	(0.0582)	(0.0584)
200,000 and above	-0.0587	-0.0615	-0.0576	-0.0564	-0.0526
	(0.0746)	(0.0744)	(0.0749)	(0.0746)	(0.0747)
Not answered	0.00426	-0.0154	-0.0228	-0.0199	-0.0142
	(0.0531)	(0.0526)	(0.0528)	(0.0527)	(0.0532)
Correct answers in Big-3		-0.0404***			
		(0.00965)			
Correct answers in FL-5			-0.0287***	-0.0330***	-0.0327***
			(0.00679)	(0.00838)	(0.00850)
Confidence in financial knowledge (Ref. = adequate self-assessment)					
Underconfidence				0.000956	0.00331
				(0.0277)	(0.0280)

Overconfidence				-0.0354*	-0.0336
				(0.0205)	(0.0208)
Optimism					-0.0104**
					(0.00450)
Risk seeking					0.00457
					(0.00407)
N	1808	1808	1808	1808	1784
Pseudo R2	0.296	0.304	0.304	0.306	0.304
Loglikelihood	-792.9	-784.4	-784.2	-782.5	-769.1

Notes: This table reports the average marginal effects based on probit regressions. The dependent variable is a dummy equal to 1 if the respondent reports being certainly or probably able to cope and zero if the respondent reports being certainly or probably unable to cope. The average marginal effects are weighted for the representativeness of the population described in section III, standard errors are reported in parentheses. Regressions using financial literacy measures include a dummy for the Financial Literacy Experiment treatment status (see Appendix A for further details). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D.2. Alternative specifications of financial literacy

Table D.3: *LPM on the inability to handle an unexpected expense within one month, using alternative financial literacy measures*

	(1) LPM	(2) LPM	(3) LPM	(4) LPM
Correct answers in Big-3	-0.0433***	-0.0427***		
	(0.0126)	(0.0127)		
Correct answers in Big-3 & Credit Interest Q.			-0.0316***	-0.0308***
			(0.0103)	(0.0105)
Confidence in financial knowledge				
Underconfidence	-0.0155	-0.0155	-0.0131	-0.0137
	(0.0237)	(0.0241)	(0.0244)	(0.0249)
Overconfidence	-0.0364	-0.0352	-0.0379*	-0.0368
	(0.0224)	(0.0224)	(0.0226)	(0.0226)
Optimism		-0.0121**		-0.0121**
		(0.00487)		(0.00488)
Risk seeking		0.00423		0.00420
		(0.00410)		(0.00411)
Socioeconomic & demographic controls	Yes	Yes	Yes	Yes
Controls for preferences	Yes	Yes	Yes	Yes
Observations	1808	1784	1808	1784
R2	0.338	0.335	0.337	0.334
Adj. R2	0.325	0.321	0.324	0.320

Notes: This table reports the coefficients of a linear probability model. The dependent variable is a dummy equal to 1 if the respondent reports being certainly or probably unable to cope and zero if the respondent reports being certainly or probably able to cope. Regressions using financial literacy measures include a dummy for the Financial Literacy Experiment treatment status (see Appendix A for further details). Robust standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table D.4: *LPM on financial fragility, financial literacy based on the "Big-3" financial literacy questions and income changes*

	(1) LPM	(2) LPM	(3) LPM	(4) LPM
Correct answers in Big-3 & Credit Interest Question (norm.)	-0.0389***	-0.0409***	-0.0415***	-0.0418***
	(0.0132)	(0.0129)	(0.0129)	(0.0129)
Income change during pandemic (norm.)		-0.0746***	-0.0761***	-0.0677***
		(0.0114)	(0.0110)	(0.0112)
Correct answers in Big-3 & Credit Interest Question (norm.) × Income change during the pandemic (norm.)			0.0227**	0.0201*
			(0.0113)	(0.0113)
Constant	0.347***	0.329***	0.330***	0.193
	(0.0742)	(0.0737)	(0.0734)	(0.127)
Socioeconomic & demographic controls	Yes	Yes	Yes	Yes
Controls for preferences	Yes	Yes	Yes	Yes
Industry of empl. controls	No	No	No	Yes
Observations	1784	1775	1775	1775
R2	0.334	0.354	0.356	0.374
Adj. R2	0.320	0.340	0.342	0.352

Note: The dependent variable equals one if the respondent is *certainly not* or *probably not* able to handle unexpected expense, and 0 otherwise. Socioeconomic and demographic controls include gender, age, number of children, marital status, education, labor market status, self-employment, homeownership, East/West dummy, citizenship dummy, and controls for the available household net income, the level of wealth and debt in 2019. Preference controls include indicators for confidence in financial knowledge, optimism, and risk-aversion. All regressions include a dummy for the Financial Literacy Experiment treatment status (see Appendix A for further details). Industry of employment controls are WZ-2008 classification dummies. I normalize the income change since the onset of the pandemic by subtracting the mean income change and divide it by the standard deviation. Standard errors in parentheses.* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table D.5: *LPM on financial fragility, financial literacy based on the "Big-3" questions and income changes*

	(1) LPM	(2) LPM	(3) LPM	(4) LPM
Correct answers in Big-3 (norm.)	-0.0417***	-0.0433***	-0.0437***	-0.0463***
	(0.0125)	(0.0122)	(0.0123)	(0.0123)
Income change during pandemic (norm.)		-0.0745***	-0.0754***	-0.0671***
		(0.0114)	(0.0112)	(0.0114)
Correct answers in Big-3 (norm.) × income change during pandemic (norm.)			0.0204*	0.0183
			(0.0115)	(0.0114)
Constant	0.346***	0.327***	0.326***	0.187
	(0.0740)	(0.0735)	(0.0734)	(0.129)
Socioeconomic & demographic controls	Yes	Yes	Yes	Yes
Controls for preferences	Yes	Yes	Yes	Yes
Industry of empl. controls	No	No	No	Yes
Observations	1784	1775	1775	1775
R2	0.335	0.356	0.357	0.376
Adj. R2	0.321	0.341	0.343	0.354

Note: The dependent variable equals one if the respondent is *certainly not* or *probably not* able to handle unexpected expense, and 0 otherwise. Socioeconomic and demographic controls include gender, age, number of children, marital status, education, labor market status, self-employment, homeownership, East/West dummy, citizenship dummy, and controls for the available household net income, the level of wealth and debt in 2019. Preference controls include indicators for confidence in financial knowledge, optimism, and risk-aversion. All regressions include a dummy for the Financial Literacy Experiment treatment status (see Appendix A for further details). Industry of employment controls are WZ-2008 classification dummies. I normalize the income change since the onset of the pandemic by subtracting the mean income change and divide it by the standard deviation. Standard errors in parentheses.* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

D.3. Alternative specifications of income changes

We asked participants of our survey to indicate whether their household faced income gains, no significant income changes or income losses since the onset of the pandemic. Moreover, we prompted participants to approximate the change in percent. One concern with this approach is that respondents with lower financial literacy are less likely able to provide an approximation in percent, which could bias the estimate. Note that the survey did not force responses, and 11 participants skipped the question. If less financially literate respondents try to avoid to provide an estimate of their income changes in percent or are unaware of the changes, we would expect a downward bias of the interaction effect. Furthermore, the results in table D.6 shows that the results are qualitatively similar when accounting only for the direction of income changes.

Table D.6: *LPM on financial fragility, financial literacy and dummies indicating direction of income changes since the onset of the pandemic (ref.: no sig. change in net income)*

	(1) LPM	(2) LPM	(3) LPM
Correct answers in FL-5 (norm.)	-0.0486***	-0.0380***	-0.0387***
	(0.0135)	(0.0145)	(0.0145)
Increase in net income	-0.0149	-0.0169	-0.0172
	(0.0291)	(0.0349)	(0.0339)
Decrease in net income	0.151***	0.151***	0.135***
	(0.0236)	(0.0235)	(0.0239)
Increase in net income × Correct answers in FL-5 (norm.)		-0.00342	0.00535
		(0.0308)	(0.0295)
Decrease in net income × Correct answers in FL-5 (norm.)		-0.0426*	-0.0375*
		(0.0224)	(0.0225)
Constant	0.290***	0.289***	0.151
	(0.0739)	(0.0739)	(0.130)
Socioeconomic & demographic controls	Yes	Yes	Yes
Controls for preferences	Yes	Yes	Yes
Industry of empl. controls	No	No	Yes
Observations	1775	1775	1775
R2	0.353	0.354	0.373
Adj. R2	0.338	0.339	0.350

Note: The dependent variable equals one if the respondent is *certainly not* or *probably not* able to handle unexpected expense, and 0 otherwise. Socioeconomic and demographic controls include gender, age, number of children, marital status, education, labor market status, self-employment, homeownership, East/West dummy, citizenship dummy, and controls for the available household net income, the level of wealth and debt in 2019. Preference controls include indicators for confidence in financial knowledge, optimism, and risk-aversion. All regressions include a dummy for the Financial Literacy Experiment treatment status (see Appendix A for further details). Industry of employment controls are WZ-2008 classification dummies. We normalize the income change since the onset of the pandemic by subtracting the mean income change and divide it by the standard deviation. Standard errors in parentheses.* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

D.4. Alternative specification: ability to cover living costs

The results in this section are based on the answers to the following question: "If you or your household were to lose your main source of income, how long would you be able to cover your

living costs without having to borrow money or move?" Respondents could answer that they could cover their living costs (1) less than a week; (2) one week to less than a month; (3) one month to less than three months; (4) three months to less than six months; (5) six months or more; (6) I don't know.

In the following two tables, I draw upon earlier literature (see section II for details) and analyze whether respondents would be able to cover living costs for less than one month (table D.9) or for less than three months (table D.10). Note that in both cases, I do not use the information of the 200 respondents that indicated that "do not know".

Table D.7: *LPM on inability to cover living costs for at least one month one month*

	(1) LPM	(2) LPM	(3) LPM	(4) LPM	(5) LPM
Female	0.0478**	0.0382*	0.0339*	0.0320	0.0293
	(0.0197)	(0.0201)	(0.0203)	(0.0203)	(0.0205)
Age (Ref. = Younger than 40)					
40 to 49	0.0139	0.0162	0.0144	0.0155	0.0152
	(0.0256)	(0.0255)	(0.0254)	(0.0254)	(0.0257)
50 to 59	-0.00935	-0.00589	-0.00651	-0.00597	-0.00648
	(0.0238)	(0.0237)	(0.0237)	(0.0237)	(0.0240)
60+	-0.0278	-0.0222	-0.0237	-0.0221	-0.0172
	(0.0280)	(0.0280)	(0.0279)	(0.0280)	(0.0283)
No. of children in HH	0.0412***	0.0407***	0.0409***	0.0404***	0.0396***
	(0.0109)	(0.0109)	(0.0108)	(0.0109)	(0.0109)
Couple	-0.0413*	-0.0439*	-0.0464**	-0.0452*	-0.0460**
	(0.0232)	(0.0232)	(0.0233)	(0.0233)	(0.0234)
Education Level (Ref. = Haupt-/Volksschule)					
Mittlere Reife	-0.0124	-0.00560	-0.00572	-0.00572	-0.00508
	(0.0318)	(0.0316)	(0.0316)	(0.0317)	(0.0318)
Abitur	-0.0366	-0.0206	-0.0171	-0.0172	-0.0152
	(0.0330)	(0.0332)	(0.0333)	(0.0334)	(0.0335)
Labor Market Status (Ref. = Full-time)					
Part-time employed	-0.00771	-0.00813	-0.00771	-0.00685	-0.000315
	(0.0241)	(0.0241)	(0.0241)	(0.0241)	(0.0241)
Marginal Employment (Mini-job)	0.110**	0.107**	0.107**	0.107**	0.103*
	(0.0534)	(0.0535)	(0.0537)	(0.0541)	(0.0550)
Not employed	0.0889*	0.0887*	0.0895**	0.0842*	0.0857*
	(0.0455)	(0.0454)	(0.0453)	(0.0452)	(0.0451)
Self-employed	0.0501*	0.0500*	0.0523*	0.0555*	0.0501*
	(0.0300)	(0.0300)	(0.0299)	(0.0300)	(0.0303)
Homeowner	-0.104***	-0.0991***	-0.0999***	-0.0985***	-0.103***
	(0.0195)	(0.0195)	(0.0195)	(0.0195)	(0.0195)
East Germany	-0.0201	-0.0204	-0.0219	-0.0219	-0.0226
	(0.0230)	(0.0231)	(0.0231)	(0.0231)	(0.0232)

No German Citizenship	-0.0132	-0.0164	-0.0173	-0.0189	-0.0177
	(0.0253)	(0.0252)	(0.0251)	(0.0251)	(0.0252)
Income quintile (Ref. = [2,500; 3,500))					
Below 1,500	0.174***	0.171***	0.169***	0.165***	0.148***
	(0.0331)	(0.0331)	(0.0331)	(0.0330)	(0.0331)
[1,500; 2,500)	0.0455*	0.0429	0.0419	0.0385	0.0300
	(0.0263)	(0.0261)	(0.0261)	(0.0260)	(0.0261)
[3,500; 4,500)	-0.00187	-0.00259	-0.00278	-0.00334	-0.00347
	(0.0249)	(0.0250)	(0.0249)	(0.0250)	(0.0251)
4,500 and above	-0.0408*	-0.0375	-0.0360	-0.0366	-0.0302
	(0.0234)	(0.0233)	(0.0233)	(0.0234)	(0.0236)
Not answered	0.00646	0.00846	0.00928	0.00762	0.00469
	(0.0376)	(0.0376)	(0.0376)	(0.0376)	(0.0377)
Wealth quintile (Ref. = [25,000; 50,000))					
Below 5,000	0.186***	0.177***	0.178***	0.175***	0.168***
	(0.0343)	(0.0346)	(0.0344)	(0.0343)	(0.0343)
[5,000; 25,000)	-0.0260	-0.0298	-0.0286	-0.0287	-0.0309
	(0.0279)	(0.0278)	(0.0277)	(0.0277)	(0.0279)
[50,000; 75,000)	-0.0313	-0.0309	-0.0284	-0.0289	-0.0391
	(0.0289)	(0.0286)	(0.0285)	(0.0287)	(0.0280)
75,000 and above	0.0234	0.0206	0.0245	0.0292	0.0285
	(0.0275)	(0.0271)	(0.0270)	(0.0273)	(0.0275)
Not answered	0.0397	0.0310	0.0303	0.0272	0.0219
	(0.0293)	(0.0294)	(0.0293)	(0.0294)	(0.0295)
Debt quintile (Ref. = [50,000; 100,000))					
No debt	-0.0396	-0.0429	-0.0465	-0.0430	-0.0390
	(0.0366)	(0.0367)	(0.0367)	(0.0368)	(0.0369)
Less than 10,000	-0.0121	-0.0180	-0.0235	-0.0199	-0.0123
	(0.0467)	(0.0469)	(0.0471)	(0.0471)	(0.0469)
[10,000; 50,000)	0.0501	0.0461	0.0437	0.0457	0.0474
	(0.0445)	(0.0448)	(0.0448)	(0.0448)	(0.0446)
[100,000; 200,000)	0.00247	0.00248	0.00133	0.00567	0.0147
	(0.0438)	(0.0436)	(0.0438)	(0.0438)	(0.0440)
200,000 and above	0.0473	0.0471	0.0497	0.0517	0.0610
	(0.0511)	(0.0506)	(0.0501)	(0.0504)	(0.0508)
Not answered	0.0438	0.0305	0.0221	0.0245	0.0343
	(0.0497)	(0.0503)	(0.0507)	(0.0506)	(0.0508)
Correct answers in Big-3		-0.0273**			
		(0.0108)			
Correct answers in FL-5			-0.0221***	-0.0321***	-0.0303***
			(0.00726)	(0.00873)	(0.00879)

Confidence in financial knowledge					
Underconfidence				0.0340	0.0316
				(0.0227)	(0.0233)
Overconfidence				-0.0230	-0.0202
				(0.0215)	(0.0214)
Optimism					-0.0116**
					(0.00472)
Risk seeking					-0.000986
					(0.00406)
Constant	0.143**	0.201***	0.215***	0.240***	0.320***
	(0.0589)	(0.0643)	(0.0647)	(0.0660)	(0.0733)
Observations	1661	1661	1661	1661	1644
R2	0.208	0.212	0.213	0.215	0.215
Adj. R2	0.193	0.196	0.197	0.198	0.197

Notes: The dependent variable equals one if the respondent is unable to cover living expenses for at least one month without borrowing or moving in case their household would lose its main income source, it equals 0 if the respondent indicates that they would be able, and is missing if they indicate that they do not know. Regressions using financial literacy measures include a dummy for the Financial Literacy Experiment treatment status (see Appendix A for further details). Robust standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table D.8: *LPM on inability to cover living costs for at least three months*

	(1) LPM	(2) LPM	(3) LPM	(4) LPM	(5) LPM
Female	0.0587**	0.0443*	0.0355	0.0345	0.0404
	(0.0245)	(0.0248)	(0.0249)	(0.0250)	(0.0253)
Age (Ref. = Younger than 40)					
40 to 49	-0.0403	-0.0367	-0.0392	-0.0383	-0.0310
	(0.0299)	(0.0298)	(0.0296)	(0.0297)	(0.0299)
50 to 59	-0.0820***	-0.0769***	-0.0773***	-0.0766***	-0.0734**
	(0.0293)	(0.0293)	(0.0292)	(0.0292)	(0.0293)
60+	-0.126***	-0.118***	-0.120***	-0.118***	-0.108***
	(0.0371)	(0.0372)	(0.0371)	(0.0371)	(0.0372)
No. of children in HH	0.0513***	0.0509***	0.0513***	0.0507***	0.0497***
	(0.0132)	(0.0132)	(0.0131)	(0.0131)	(0.0132)
Couple	-0.00176	-0.00495	-0.00941	-0.00871	-0.00955
	(0.0267)	(0.0267)	(0.0268)	(0.0268)	(0.0269)
Education Level (Ref. = Haupt-/Volksschule)					
Mittlere Reife	-0.0303	-0.0202	-0.0192	-0.0189	-0.0107
	(0.0362)	(0.0362)	(0.0360)	(0.0361)	(0.0362)
Abitur	-0.101***	-0.0796**	-0.0711*	-0.0704*	-0.0637*
	(0.0377)	(0.0385)	(0.0384)	(0.0384)	(0.0384)
Labor Market Status (Ref. = Full-time)					

Part-time employed	0.00998	0.00841	0.00899	0.00999	0.0147
	(0.0286)	(0.0286)	(0.0286)	(0.0286)	(0.0288)
Marginal Employment (Mini-job)	0.0276	0.0237	0.0232	0.0230	0.00595
	(0.0544)	(0.0549)	(0.0549)	(0.0552)	(0.0561)
Not employed	0.0725*	0.0722*	0.0736*	0.0700	0.0699
	(0.0433)	(0.0434)	(0.0434)	(0.0434)	(0.0437)
Self-employed	0.0707**	0.0695*	0.0733**	0.0752**	0.0738**
	(0.0355)	(0.0356)	(0.0354)	(0.0354)	(0.0359)
Homeowner	-0.106***	-0.1000***	-0.101***	-0.0998***	-0.106***
	(0.0258)	(0.0259)	(0.0258)	(0.0258)	(0.0260)
East Germany	0.0112	0.0114	0.00882	0.00845	0.00691
	(0.0288)	(0.0287)	(0.0288)	(0.0288)	(0.0289)
No German Citizenship	0.0260	0.0215	0.0196	0.0191	0.0256
	(0.0318)	(0.0317)	(0.0314)	(0.0314)	(0.0316)
Income quintile (Ref. = $[2,500; 3,500)$)					
Below 1.500	0.188***	0.185***	0.180***	0.178***	0.160***
	(0.0394)	(0.0394)	(0.0392)	(0.0393)	(0.0398)
$[1,500; 2,500)$	0.0401	0.0362	0.0341	0.0331	0.0226
	(0.0346)	(0.0344)	(0.0342)	(0.0343)	(0.0344)
$[3,500; 4,500)$	-0.0302	-0.0317	-0.0322	-0.0320	-0.0319
	(0.0374)	(0.0374)	(0.0373)	(0.0373)	(0.0372)
4,500 and above	-0.152***	-0.147***	-0.144***	-0.143***	-0.131***
	(0.0378)	(0.0377)	(0.0375)	(0.0375)	(0.0377)
Not answered	-0.0686	-0.0650	-0.0633	-0.0636	-0.0646
	(0.0488)	(0.0488)	(0.0486)	(0.0487)	(0.0486)
Wealth quintile (Ref. = $[25,000; 50,000)$)					
Below 5,000	0.347***	0.335***	0.334***	0.333***	0.330***
	(0.0435)	(0.0434)	(0.0431)	(0.0431)	(0.0434)
$[5,000; 25,000)$	0.0773*	0.0715	0.0728*	0.0736*	0.0670
	(0.0436)	(0.0435)	(0.0433)	(0.0434)	(0.0438)
$[50,000; 75,000)$	-0.0322	-0.0323	-0.0281	-0.0293	-0.0381
	(0.0491)	(0.0489)	(0.0487)	(0.0487)	(0.0488)
75,000 and above	0.00648	0.00345	0.00932	0.0102	0.00450
	(0.0429)	(0.0424)	(0.0421)	(0.0422)	(0.0424)
Not answered	0.101**	0.0883**	0.0856**	0.0842**	0.0716*
	(0.0422)	(0.0421)	(0.0419)	(0.0419)	(0.0422)
Debt quintile (Ref. = $[50,000; 100,000)$)					
No debt	-0.114**	-0.118**	-0.125**	-0.123**	-0.126**
	(0.0520)	(0.0518)	(0.0513)	(0.0512)	(0.0516)
Less than 10,000	0.0470	0.0396	0.0296	0.0303	0.0276
	(0.0599)	(0.0596)	(0.0593)	(0.0593)	(0.0596)

[10,000; 50,000)	0.0520	0.0469	0.0422	0.0420	0.0423
	(0.0612)	(0.0610)	(0.0604)	(0.0604)	(0.0610)
[100,000; 200,000)	-0.0221	-0.0210	-0.0228	-0.0220	-0.0176
	(0.0678)	(0.0677)	(0.0674)	(0.0675)	(0.0677)
200.000 and above	0.0909	0.0890	0.0931	0.0921	0.0951
	(0.0763)	(0.0760)	(0.0751)	(0.0751)	(0.0750)
Not answered	-0.00259	-0.0217	-0.0378	-0.0368	-0.0471
	(0.0613)	(0.0618)	(0.0617)	(0.0616)	(0.0618)
Correct answers in Big-3		-0.0395***			
		(0.0128)			
Correct answers in FL-5			-0.0359***	-0.0391***	-0.0368***
			(0.00865)	(0.0104)	(0.0105)
Confidence in financial knowledge					
Underconfidence				-0.00508	-0.0154
				(0.0302)	(0.0305)
Overconfidence				-0.0298	-0.0264
				(0.0254)	(0.0257)
Optimism					-0.0205***
					(0.00559)
Risk seeking					0.00408
					(0.00478)
Constant	0.434***	0.511***	0.543***	0.563***	0.677***
	(0.0772)	(0.0819)	(0.0822)	(0.0837)	(0.0915)
Observations	1661	1661	1661	1661	1644
R2	0.276	0.281	0.285	0.285	0.291
Adj. R2	0.262	0.266	0.270	0.270	0.274

Notes: The dependent variable equals one if the respondent is unable to cover living expenses for at least three months without borrowing or moving in case their household would lose its main income source, it equals 0 if the respondent indicates that they would be able, and is missing if they indicate that they do not know. Regressions using financial literacy measures include a dummy for the Financial Literacy Experiment treatment status (see Appendix A for further details). Robust standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table D.9: *LPM on inability to cover living costs for at least one month, financial literacy and income losses*

	(1) LPM	(2) LPM	(3) LPM	(4) LPM
Correct answers in FL-5 (norm.)	-0.0452***	-0.0436***	-0.0441***	-0.0448***
	(0.0131)	(0.0130)	(0.0130)	(0.0132)
Income change during pandemic (norm.)		-0.0253**	-0.0262***	-0.0243**
		(0.0103)	(0.00991)	(0.0102)
Correct answers in FL-5 (norm.) × Income change during pandemic (norm.)			0.0228**	0.0228**
			(0.0103)	(0.0104)
Constant	0.240***	0.226***	0.226***	0.115
	(0.0693)	(0.0692)	(0.0690)	(0.110)
Socioeconomic & demographic controls	Yes	Yes	Yes	Yes
Controls for preferences	Yes	Yes	Yes	Yes
Industry of empl. controls	No	No	No	Yes
Observations	1644	1635	1635	1635
R2	0.215	0.216	0.219	0.233
Adj. R2	0.197	0.197	0.200	0.204

Note: The dependent variable equals one if the respondent is unable to cover living expenses for at least one month without borrowing or moving in case their household would lose its main income source. The dependent variable equals 0 if the respondent indicates that they would be able, and missing if they indicate that they do not know. Socioeconomic and demographic controls include gender, age, number of children, marital status, education, labor market status, self-employment, homeownership, East/West dummy, citizenship dummy, and controls for the available household net income, the level of wealth and debt in 2019. Preference controls include indicators for confidence in financial knowledge, optimism, and risk-aversion. All regressions include a dummy for the Financial Literacy Experiment treatment status (see Appendix A for further details). Industry of employment controls are WZ-2008 classification dummies. We normalize the income change since the onset of the pandemic by subtracting the mean income change and divide it by the standard deviation. Standard errors in parentheses.* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table D.10: *LPM on inability to cover living costs for at least three months, financial literacy and income losses*

	(1) LPM	(2) LPM	(3) LPM	(4) LPM
Correct answers in FL-5 (norm.)	-0.0552***	-0.0548***	-0.0554***	-0.0558***
	(0.0156)	(0.0156)	(0.0155)	(0.0157)
Income change during pandemic (norm.)		-0.0287**	-0.0296**	-0.0208*
		(0.0122)	(0.0116)	(0.0120)
Correct answers in FL-5 (norm.) × Income change during pandemic (norm.)			0.0243*	0.0239*
			(0.0124)	(0.0124)
Constant	0.580***	0.568***	0.567***	0.604***
	(0.0884)	(0.0893)	(0.0891)	(0.161)
Socioeconomic & demographic controls	Yes	Yes	Yes	Yes
Controls for preferences	Yes	Yes	Yes	Yes
Industry of empl. controls	No	No	No	Yes
Observations	1644	1635	1635	1635
R2	0.291	0.291	0.293	0.306
Adj. R2	0.274	0.274	0.276	0.279

Note: The dependent variable equals one if the respondent is unable to cover living expenses for at least three months without borrowing or moving in case their household would lose its main income source. The dependent variable equals 0 if the respondent indicates that they would be able, and missing if they indicate that they do not know. Socioeconomic and demographic controls include gender, age, number of children, marital status, education, labor market status, self-employment, homeownership, East/West dummy, citizenship dummy, and controls for the available household net income, the level of wealth and debt in 2019. Preference controls include indicators for confidence in financial knowledge, optimism, and risk-aversion. All regressions include a dummy for the Financial Literacy Experiment treatment status (see Appendix A for further details). Industry of employment controls are WZ-2008 classification dummies. We normalize the income change since the onset of the pandemic by subtracting the mean income change and divide it by the standard deviation. Standard errors in parentheses.* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

E. List of variables and wording of survey questionnaire

Table E.11: *List of variables*

Variable	Underlying question(s) of the survey	Answer options & notes
Gender	Are you...	1. Male 2. Female 3. Diverse
Age	In which year were you born?	Year: (numeric) *Note: Age derived from year of birth.*
No. of children in household	How many children or step-children are living in your household?	1. No children are living in our household 2. (numeric)
Couple	What is your current marital status?	1. Single, without partner in the household 2. Single, with partner in household 3. Married and living together 4. Divorced / separated / widowed without partner in household 5. Divorced / separated / widowed with partner in household *Note: I defined couples as respondents from 2, 3 and 5, and singles as respondents from 1 and 4.*
Education	What is your highest general school-leaving qualification?	1. Hauptschulabschluss/ Volksschulabschluss 2. Mittlere Reife / Realschulabschluss / Polytechnische Oberschule / zehnte Klasse 3. Fachhochschulreife 4. Allgemeine oder fachgebundene Hochschulreife / Abitur *Note: I recoded the school-leaving certificates and combined categories 3 and 4 (see also footnote 18 on p. 13).*
Labor market status	Are you currently employed in any way? Gainful employment includes any paid activity or activities associated with regular income, regardless of the amount of time it takes. Which of the following describes your employment most appropriately?	1. Full-time employment with a weekly working time of 35 hours or more 2. Part-time employment with a weekly working time of 15 to less than 35 hours 3. Marginal employment with a weekly working time of less than 15 hours ("Minijob") 4. Occasional employment 5. Not employed in any way *Note: I recoded the labor-market status and categorized those not employed in any way or in occasional employment as "not employed".*

Note: table continues on next page

Variable	Underlying question(s) of the survey	Answer options & notes
Self-employed	Are you currently...	1. Laborer 2. Employee 3. Civil Servant 4. Self-employed without employees 5. Self-employed with employees *Note: Only respondents in full-time or part-time employment receive this question. Given the time-lag between the screening and follow-up, I use the follow-up survey's question on self-employment ("Are you currently self-employed?" [Yes / No]), and responses to a retrospective question about changes in the employment situation due to the Covid-19 ("Did your employment or work-situation change due to the Corona-crisis? If this was the case, please choose from the list below.", which included the option "I terminated my self-employment.").*
Homeowner-ship	Are you currently renting or are you the owner of your accommodation?	1. Tenant 2. Owner
East Germany incl. East Berlin	In which German federal state do you live?	*Note: Respondents could choose from a list including all 16 federal states of Germany. Eastern federal states include Brandenburg, Mecklenburg Western-Pommerania, Saxony, Saxony-Anhalt, and Thuringa, Western federal states include Baden-Württemberg, Bavaria, Bremen, Hamburg, Hesse, North Rhine-Westphalia, Rhineland-Palatinate, Saarland and Schleswig-Holstein. Furthermore, the 62 respondents reported living in Berlin received a follow-up about their district. The 32 respondents that indicated living districts in East Berlin, which was a part of the former GDR, were treated as respondents from East Germany. The eastern disctricts include Friedrichshain, Hellersdorf, Hohenschönhausen, Köpenick, Lichtenberg, Marzahn, Mitte, Pankow, Prenzlauer Berg, and Treptow).*
German Citizen-ship	Do you have the German citizenship? Note: If you hold multiple citizenships, please indicate "yes" if you also hold the German citizenship.	1.Yes 2. No

Note: table continues on next page

Variable	Underlying question(s) of the survey	Answer options & notes
Net Household Income in EUR	What do you estimate is the monthly net disposable income of your household, i.e. the money available to the entire household after deduction of taxes and social security contributions to cover expenses? Please consider the following types of income for your answer. (Salary, Income from self-employment, Pensions, Income from public benefits, Income from renting, Income from leasing, Housing benefit ("Wohngeld"), Child benefit, Other income)	For ease of presentation, I combined valid responses to five groups of roughly the same size, namely "Below EUR 1,500", "EUR 1,500 to less than EUR 2,500", "EUR 2,500 to less than EUR 3,500", "EUR 3,500 to less than EUR 4,500", and "4,500 and above".
Fin. Wealth (2019, in EUR)	How high were your financial assets (i.e. those of your household) in financial and pension assets in total at the end of 2019? Please include any repurchase values of life insurance policies; but exclude real estate and other tangible assets.	For ease of presentation, I combined valid responses to five groups of roughly the same size, namely "Below EUR 5,000", "EUR 5,000 to less than EUR 25,000", "EUR 25,000 to less than EUR 50,000", "EUR 50,000 to less than EUR 75,000", and "75,000 and above".
Debt (2019, in EUR)	Did you have any loans that had not been fully repaid by the end of 2019, for instance to finance home ownership, cars, holidays, etc.? Please disregard overdrafts on your current account. However, please also include any loans you may have received from friends or relatives. Please disregard smaller remaining loans of less than 50 euros. *If respondent reported to have loans, follow-up:* What was the total amount of this debt at the end of 2019?	I combined the responses to both questions. Respondents that reported to not hold any loans that are not fully repay are categorized as having "no debt". Among those that reported to hold debt, I combined valid responses to five groups of roughly the same size for ease of presentation, namely "Less than EUR 10,000", "EUR 10,000 to less than EUR 50,000", "EUR 50,000 to less than EUR 100,000)", "EUR 100,000 to less than EUR 200,000", and "EUR 200,000 and above".
Self-Assessed Financial Knowledge	How would you rate your personal knowledge regarding financial matters?	11-point scale from "0 (very low)" to "10 (very high)"
Risk tolerance	How do you personally rate yourself: How willing are you to take risks in general?	11-point scale from "0 (not at all willing to take risks)" to "10 (very willing to take risks)"
Optimism	The following question is about optimism. Optimists are people who look to the future with confidence and mostly expect good things. Please rate yourself: How optimistic are you in general?	11-point scale from "0 (not optimistic at all)" to "10 (very optimistic)"
Income change since onset of the crisis	How has the monthly net income of your household developed during the COVID-19 crisis (since March 2020)?	1. It increased by approximately __% 2. It did not change 3. It decreased by approximately __%

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