

**Does getting infected with COVID lead to economic hardship in older persons? Results from
the COVID-19 Share Survey in 26 E.U. countries**

A working paper

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Abstract

Background: There are widespread concerns that COVID-19 infection could lead to substantial economic hardship in affected households and individuals. It is not clear whether the social protection programmes implemented across Europe have been sufficient to fully protect at-risk people from economic harm. Here we test the household and individual economic impact of COVID-19 infection, hospitalization and mortality.

Methods: We use the Survey on Health, Retirement and Ageing (SHARE) COVID-wave covering 8,800 adults aged 50+ who had complete data on financial hardship and were employed prior to COVID-19. Multivariate regression models were used to quantify the association of COVID caseness, symptoms, hospitalization, and death on financial difficulties, adjusting for potential socio-demographic and regional confounders.

Results: COVID exposure is associated with greater perceived financial difficulty, and this link increases in magnitude and significance with greater severity of COVID-19 infection. Our models find that COVID-19 symptoms are association with a 6.4 percentage point (pp) increase ($p<.01$, CI 95%: 0.017, 0.111) in the probability of having difficulty making ends meet; this association increased to 14.4 pp ($p<.05$, CI 95%: 0.007, 0.281) if someone in the household was hospitalized and 36.9 pp if someone had died ($p<.05$, CI 95%: 0.050, 0.688). On conducting mediation analysis, we found job loss does not seem to be a significant channel between COVID exposure and financial strain.

Conclusion: Our findings provide evidence that, despite measures to achieve financial protection, COVID-19 infection caused not only health suffering but considerable economic hardship to most affected families and individuals. Further research is needed to identify the role of health expenditures and the extent to which they were potentially catastrophic.

Introduction

Concerns about the impact of the pandemic on the financial capacity of households have been featured prominently, in particular, with regards to job loss[1–3]. A report by the OECD [4] in 16 EU countries highlights that almost three quarters of respondents declare facing financial difficulties since the start of the pandemic; while 41% reported disruptions in their jobs, like working fewer hours, being laid off or pay cuts. Early data from employment surveys confirmed these stark numbers; in Italy, the first developed country with a significant outbreak, almost 50 percent of workers were idle three weeks into the lockdown [5]. The situation was similar in Israel, where unemployment jumped from 3.4% in February 2020 to 26% by the end of April [6]. In the United States, unemployment peaked at 15% in April, the highest month-to-month increase in more than 70 years [7, 8].

The severity of the health and economic shock was called by German ex-Chancellor Angela Merkel the EU’s “biggest test since its foundation” [9] and has led to intense debate in the research and political spheres, quickly turning into actionable policies to protect the economy and to deter the negative effects of lockdowns [10–12]. These have come in the form of unemployment protections, economic support for workers, and liquidity provisions for firms. Moreover, the EU set a block-wide response in the form a fund consisting of immediate support, and a set of medium- and long-term policies designed to *rebuild* Europe [13, 14]. These coordinated efforts had positive effects in stabilizing the economy and providing a safety network for businesses and workers, but the results are unequal across economic and occupational status. For example, job disruptions were more extreme for those with less education; the income loss of lockdowns is borne by those who are economically vulnerable; and poverty rates have disproportionately increased for those with a job pre-pandemic [15–18].

In fact, there is evidence of the negative effects of COVID-19 (as a general health shock) on households’ financial stress, as well as its possible ramifications on overall poverty and declining mental health [8, 19–23]. However, there is little information on the economic effects of individual

and household COVID exposure, for example, what is the specific impact of having COVID on financial difficulty. Besides, although there is a buoyant literature on the channels through which health shocks affect financial distress; the novelty of the COVID pandemic has precluded studies that test these channels in the present context.

Designing effective social protection policies to ameliorate the economic consequences of the pandemic requires understanding on how different types of individual exposure to COVID-19 can impact finances. Besides, effective policies could target the channels that are found to be more important.

In this paper, we exploit panel data (pre and during COVID) from 25 European countries to examine how individual exposure to COVID affects financial distress. We derive our theoretical model, represented in the causal diagram of Figure 1, from the vast literature of illness and health shocks [24–27]. We consider that financial difficulty is an indirect result of COVID-19 exposure. Before any financial distress is realized, COVID has a direct effect in job loss, work hours, medical bills, and hospitalization expenses. As outlined by previous literature [20, 22, 28], the effect of COVID might be amplified by structural observable characteristics, which we include in our models.

We examine whether, and by how much, the relation between COVID shocks and financial distress is mediated by job loss during the pandemic. To this end, we consider COVID exposure of different types of increasing intensity: symptoms, caseness, hospitalization and death. To the best of our knowledge this is the first study to quantify the impact of different types of COVID exposure at the personal or household level on financial distress and to test whether job loss acts as a relevant channel for this link.

[Figure 1: Causal Diagram]

1. Methods

1.1.Source of Data

We use data from the Survey of Health, Ageing and Retirement in Europe (SHARE) [29]. This is a longitudinal database on health and socioeconomic variables to individuals older and 50 living in Europe and Israel, and representative at the national level. In particular, we use data from the 8th wave levied between 2019 and stopped at the beginning of 2020 (*Pre-COVID round*) and the SHARE-Covid 19 survey (*COVID-round*), done between June and September 2020.¹

Our initial sample is composed by 55 thousand individuals. After adding observations from Austria - which did the survey a few weeks later- and deleting observations from Israel and Portugal due to comparability issues, we end up with 25 European countries². We keep those observations in the pre and COVID rounds, which brings down the number to about 42 thousand individuals. We restrict our sample to those employed before the pandemic (14 695 individuals). After this, we drop those with missing information on education, worker status in the pre-COVID round, and other demographic variables. Finally, we keep those who have complete information for the dependent variable. Depending on the level of exposure, we get between 8 833 and 8 867 observations in our working sample. We provide a flowchart for the inclusion criteria in Figure A1 in Appendix, and a set of summary statistics in Table 1.

Measuring COVID exposure

We use different measures of COVID exposure depending on a set of questions on COVID-19 status. Respondents were asked if they had *symptoms*, had a *positive result* through a COVID test, were *hospitalized*, or if anyone *died* because of COVID. All questions can refer to the (1) **Individual** level (except for the *death* type); (2) **Household**, meaning self or someone in their household. In total, we use seven dummy variables measuring COVID-19 exposure, three at individual level and four at household level.

¹ *Pre-Covid round* was done with Computer Assisted Personal Interview (CAPI), in person, whereas the *COVID-round* had to be done by distance with CATI (Telephone based interviews). Most countries carried out the *COVID-round* between June and July 2020, only Austria carried it out in August and September 2020. For more details about the survey see Börsch-Supan et al, and Scherpenzeel et al [30, 31].

² Germany, Sweden, Netherlands, Spain, Italy, France, Denmark, Greece, Switzerland, Belgium, Czech, Poland, Luxembourg, Hungary, Slovenia, Estonia, Croatia, Lithuania, Bulgaria, Cyprus, Finland, Latvia, Malta, Romania, and Slovakia.

To test the validity of our variables, we calculate mean infections per capita given by data from the European Centre for Disease Control (ECDC) cumulative cases in August 2020. Then we calculate the proportion of respondents that reported a positive test, either themselves or for someone they know, by country and by region. The results show a consistent relationship between official and survey figures, with correlations at the national level at 0.84 and at the subregional level being .58. We do the same procedure but using Eurostat's Excess Deaths, and we find similar high correlations.

1.2.Measuring Financial Strain

Throughout this paper, we use a typical financial adequacy (Making ends meet) question, which is regarded as subjective. This is preferred to more objective measures of financial distress, like income reduction. Literature has argued that since some authors argue that subjective opinions *are more closely associated with underlying statistical constructs of material hardship than objective measures* [32–34]. We derived the variable from a Perceived Income Adequacy question. This type of variable has been widely used, even in COVID-related studies [6, 35], and described as culture-neutral, facilitating inter-country comparisons [36, 37]. The question asks *Would you say that your household is able to make ends meet?* With possible answers being *with great difficulty (1), with some difficulty (2), fairly easily (3), or, easily (4)*. We code the variable as 1 when the answer is (1) or (2).

Job Loss in the household: Since the effects of the pandemic and subsequent lockdowns were pervasive in the labor market, we test job loss as a channel for financial deterioration [5, 38–40]. We construct a dummy variable based on the question on job loss in the COVID-round questionnaire, *Due to the Corona crisis have you become unemployed, were laid off or had to close your business?.* Thus, this question includes workers, business owners, and self-employed. The dummy variable is then augmented to all members inside the household to create a household-wide job loss indicator.

1.3.Other Variables

Economic variables at baseline: We create a variable that summarizes the quintiles of income in the sample. Since many income observations were missing, we used SHARE's imputed income database. Additionally, we use the Meeting Ends question as a control at baseline (pre-COVID).

Survey Control Variables: We include an array of demographic variables (gender, age, marital status); and education variables (using ISCED 2011 standardized levels from SHARE). We also include a dummy variable indicating if the individual has supplementary insurance.

External COVID related variables: we include a variable for excess deaths per capita at the regional level (NUTS2 or NUTS1, depending on the country) from Eurostat. We also use the average stringency level of the lockdown measures, using the Oxford Government Response tracker[41], which goes from 0 (lowest stringency) to 100 (highest stringency).

GDP at the regional level: Evidence exists on the effects of overall regional economic indicators on the probability of infection [42–44]. Hence, we include GDP per capita at NUTS2 (or NUTS1 when not possible) using information from Eurostat. Observations that do not have information on NUTS region are assigned the national level GDP.

[Table 1: Summary Statistics]

2. Statistical Modelling

This section explores the statistical model following the causal relation presented in Figure 1. First, to account for the relation between COVID exposure and financial strain we estimate the following equation using a Linear Probability Model:

$$FinancialStrain_{i,t=1} = \beta_1 CovidExposure_{i,t=1} + X_{i,t=0}\gamma + Y_{i,t=0}\delta + \Upsilon_c + e_{1i}. \quad [1]$$

Where, as discussed in the previous section, *FinancialStrain* is a dummy variable determined by *difficulty making ends meet*; and *COVIDExposure* refers to any of the seven combinations of exposure. $Y_{i,t=0}$ is a vector including the economic variables at pre-COVID SHARE round (hence the $t=0$); and $X_{i,t=0}$ is vector for the rest of control variables at pre-COVID values. We include country fixed effects (Υ_c) to control for common factors at country level.

We expect β_1 , which reports the effect of Covid Exposure on Financial Strain, to be positive and significant.

2.1. Mediation Analysis

We then use a mediation analysis method considering whether Job Loss acts as a mediator between COVID exposure and financial strain. A mediation analysis helps uncover the possible participation of a mediator variable in the relationship with two variables [45–47]. To carry out this analysis we additionally estimate the following equations:

$$FinancialStrain_{i,t=1} = \beta_0 JobLoss_{i,t=1} + \alpha_1 CovidExposure_{i,t=0} + X_{i,t=0}\gamma + Y_{i,t=0}\delta + \epsilon_i + e_{2i}. \quad [2]$$

$$JobLoss_{i,t=1} = \beta_2 CovidExposure_{i,t=1} + X_{i,t=0}\gamma + Y_{i,t=0}\delta + \epsilon_i + e_{3i}. \quad [3]$$

If job loss mediates the relation between Covid exposure and financial stress the Covid exposure, the coefficient should be greater in Equation [1] than in Equation [2] ($|\beta_1| > |\alpha_1|$). This implies that adding the job loss variable attenuates the indirect effect of COVID on financial strain.

Further, Equation [3] provides the first leg of the causal diagram presented in Figure 1, in which COVID exposure first affects job loss. If job loss indeed mediates the relation, we would expect β_2 coefficient to be positive and significant.

3. Results

3.1. Preliminary results

Summary statistics are reported in Table 1. Overall, respondents declare less difficulty making ends meet during COVID (28.3%) than pre-COVID (30.7%). These results might stem from households finding it easier to pay for goods they prioritize during the first wave of the pandemic, like food. In the absence of needing to buy clothing, transportation, and leisure, households may legitimately be having an overall easier time paying bills. However, the picture turns different when we divide by job loss status (see Figure 2). Individuals who lost their job during COVID saw an increase of almost 5 percentage points (pp) in the difficulty of Making Ends Meet. In contrast, those who did not lose their jobs experienced a reduction of their difficulty making ends meet of about 4pp. Second, without controlling for any other variable, the two groups (lost job vs. not) have significantly different patterns

of pre-COVID difficulty making ends meet (36.6 vs. 29.1 percent, respectively); indicating that the two groups might be systematically different, with those losing their jobs being more vulnerable to health shocks.

[Figure 2: Difficulty Making ends meet by job loss]

We also point to the prevalence of COVID exposure, which is useful to understand the number of cases. Results in Table 1, Panel B show that the most prevalent level of COVID exposure is the one referring to *symptoms* (6.7% - 574 cases). This is expected as individuals may reply yes if they have any COVID-related symptoms, even in the absence of testing. On the other hand, the least prevalent level of exposure is *deaths inside the Household* (0.1% - 10 cases).

3.2.COVID exposure and financial strain

Figure 3 shows association between each level of COVID exposure and financial stress derived from Equation 1, after adjusting for all controls.³ Our results indicate that being exposed to COVID hurts financial status. Furthermore, this effect varies in both magnitude and significance depending on the nature of the exposure. The effects seem to increase as the exposure is more severe. For example, someone with COVID symptoms in the household, had a 4.1 pp increase in declaring financial difficulty. This figure was 6.4 pp if only the respondent manifesting symptoms. While if someone in the household dies, the increase is 36.9 pp. Having someone hospitalized in the household is related with at increase in 14.4 pp of financial difficulties ($p<0.01$, $p<0.01$, $p<0.05$ and $p<0.05$, respectively).

³ Unadjusted results (Table A1), on the other hand, showed no positive relation between COVID exposure and financial strain. Indeed, this is an indication that there are many observable factors related with both COVID exposure and financial symptoms that should be controlled for. These full set results are in Table A2 of the Appendix.

Large confidence intervals in the case of death and hospitalization (self) are due to the small number of people reporting having a person die in their Households (10 respondents); and the respondents having been hospitalized 11 people). However, the results still hold at a 5% level.

We cannot assess the effect of COVID in the case of positive test, be it at individual or household. The explanation is twofold and is related to the concept of power and statistical significance: (1) the ‘real’ effect is small in comparison to that of death and hospitalization; and (2) the number of positive cases is not high, as it is in the case of “symptoms”. That is, statistical significance happens in the case of death and hospitalization because its effect in financial stress is *large*, meaning that even with small number of cases we should be able to see it. On the other hand, if we have a large number of observations, we could potentially discern a small effect, as in the case of symptoms.

[Figure 3: Forest Plot]

3.3.Mediation of Job Loss

Table 2 summarizes the coefficients and statistical values necessary to test the mediation effect of job loss. It contains all the coefficients for the equations [1]-[3] presented in the Statistical Model section. In the case of mediation, we expect the coefficient of Equation [2] to be smaller (in absolute value) than the one in Equation [1]⁴. This is the case for all types of exposure, suggesting that Job Loss is, in fact, a channel through which COVID affects the finances of workers. However, the magnitude and the significance of the mediation are heterogeneous. For example, the only case in which COVID statistically affects Job Loss (Equation [3]) is in the case of symptoms inside the household, where it increases the probability of losing the job by approximately 5 percentage points.

We consider this an effect of the small number of observations for the other types of exposure. Without looking at statistical significance, it looks like Job Loss is actually negatively affected by

⁴ Notice that Annexes Table A2-A4 contain the full regressions for the results in Table 2, panel A.

COVID exposure, although given that both the small effect and the small number of observations, our sample is not able to fully elucidate this effect.

[Table 2: Results of the mediation]

We can quantify the mediation effect by looking at the coefficients of the mediation versus the unmediated equations and perform tests⁵ on whether the mediation is significant. These results are summarized in Table 2 Panel B. First, we see that financial strain is very weakly mediated by job loss in most cases, except in the case of symptoms inside the household. In this case, Job Loss accounts for the 10.8 percent of the total effect of COVID on Financial Strain. This relationship is further confirmed by the three tests (Sobel, Aroian and Goodman), which are significant at a 5% level.

Finally, our mediation analysis leaves unexplained about 90-95 percent of the effect on COVID in Financial distress, which we attribute to other channels, like the direct costs of hospitalization, medicines, and caring for others, or other economic losses that do not imply necessarily job loss, such as salary cuts or drop in business revenues.

4. Robustness checks

We perform several robustness checks to our analysis. First, we employ a different measure of financial strain, namely, *income reduction*. This variable takes a value of 1 if the respondent declares a negative difference between their normal wage or income and their minimum income during the COVID pandemic. Results are presented in Table A 5. Even if the magnitude of the results is different from the ones using making ends meet; they are in the same direction: more significant exposure to the virus (like hospitalization) is associated with higher probability of income reduction. Interestingly, now both hospitalization at the individual and household level are significant, but the effect of death is not significant. Moreover, the mediation of job loss is now even higher, explaining about a third of

⁵ We perform all calculations using Stata 17 for macOS (Apple Silicon Version). Moreover, we used Trenton Mize's `sgmediation2` Stata command to check results, provide hypothesis testing (Sobel, Aroian and Goodman tests), and calculate the magnitude of the mediation effect [48]. We provide the three tests that the `sgmediation2` command gives. In our case, they all provide the same results. However, in case of disagreement, MacKinnon et al. 2002 provide a discussion of each test.

the effect (31%) in the case of hospitalization in the household. This is expected, as job loss and income are directly related, more than subjective financial status. Although these results are very interesting, we focused on the subjective financial strain because of the high variability and lower sample size of income variables. In fact, we lose some observations for death in the household, which could explain why it becomes non-significant in this case.

Second, we used binary regressions (probit) instead of linear regressions. In this case, mediation analysis is not easily interpretable and only the full equation is presented in Table A6. Results are similar to the linear regressions, with signs following the same pattern.

Third, we repeated the analysis excluding Austria. This is because fieldwork there was mostly done during August and September 2020 (instead of June and July), when lockdown restrictions have mostly relaxed. The reduction on the number of observations is minimal – Austria represents around 180 observations, or less than 3% of the sample. Results (Table A7) remain basically unaffected, with little change in the magnitude of the coefficient.

Fourth, we considered the variable of job loss at the individual level. That is, instead of the variable being determined by someone in the household losing their job, the variable is now only applicable for individual workers and not their households. Under this assumption, the health shock happens at the individual level, as well as the financial strain. This could seem counter-intuitive, as the financial distress variable is a household variable. However, the exercise gave some interesting results – see Table A 8. Job loss now is responsible for about 11.9 percent of the relationship between Covid exposure -as hospitalization in the household- and financial strain. Moreover, the equation for Job loss indicates that *individual* job loss is affected by hospitalization in the household. The explanation could stem from individuals losing their jobs (voluntarily or involuntarily) when they themselves or someone in their household is hospitalized, for example if they must take care of someone and they have to close their business.

Finally, we repeated the analysis accounting for the intensive margin of the loss of employment. In this case, the job loss variable takes a value of 0 if the person did not lose their job, and if they did, it

takes the number of weeks that the person was not working. Results are presented in Table A9. As with the other checks, point estimates for the COVID exposure variable do not change direction from our main results.

5. Discussion

The present study sheds light on the association between financial strain and COVID-19 exposure by using panel data first collected right before the beginning of the pandemic and then during its first wave. Our results point to a substantial impact of COVID deaths and hospitalizations on financial stress, as measured by difficulties making ends meet. This is happening despite COVID care being freely available in the European countries investigated, although inter-country differences could be a contributing factor [49]. Moreover, we found that the association of COVID with economic hardship was very weakly mediated by job loss. This suggests that although many countries have attempted to help the economy by actively protecting jobs during COVID, there are other channels through which COVID had an impact on economic difficulties.

Our results are consistent with the current literature on the economic consequence of health shocks and illnesses. During COVID, individuals with lower economic There is evidence of larger health shocks associated with greater economic distress; for example, in Vietnam, death of a working age member lead to a reduction of earned income as high as 36% [25]. In China deteriorations in subjective health led to up to a 10% income loss and 15% decrease in Labor Force participation. Moreover, illness is associated with decreased labor supply and income: in Taiwan, heart disease is associated with a reduction of 27.3% of Labor Force participation [50];

Mediation analysis uncovers job loss as a channel, although weak, in the case of symptoms within the household, but not in the other cases. We consider this a consequence of the lockdown restrictions, which in many cases required individuals suspected to have the virus to shelter at home, leading to job losses and business closures. The fact that we do not see any effect for the positive test could be due to low availability of testing at the early stages of the pandemic. For example, those who got tested might be structurally different from those who did not, even if they had symptoms. On the

other hand, for the extreme case of death and hospitalization, job loss in the household does not appear to be a channel. One explanation is that there is actually an (small) effect, but we do not see it because of the small sample. However, we do see that both hospitalization and death affect household finances negatively, which in first case might be related to hospitalization costs, and in the second, to unforeseen catastrophic expenditures like funeral costs.

In fact, in the extreme cases of hospitalizations and death, individuals have a double burden of economic and health harm, and governments stimuli may not be enough to assure economic protection. For example, in the case of hospitalization, self-employed individuals and small business owners may not be eligible for income-protection schemes. In the case of death, funeral costs can cause a great toll on household finances, despite some jurisdictions implementing subsidies.

Importantly, our study focused on older adults, a population that is most vulnerable to COVID-19 infection but also thought to be better protected economically, thanks to pension supports and social programmes. Our focus is relevant in the context of an aging continent, where almost 35 percent of the population is 50 or older [51]. Conducting the same regressions with the individuals who are pensioners leads to non-significance of the COVID exposure coefficient, supporting the hypothesis of financial protection of steady income from pensions. As interesting as this last result might seem, we consider that the focus on the workers offers a picture of a group that is more vulnerable economically and that requires more public policy emphasis.

5.1. Study Limitations

We identified several limitations in our study. First, COVID exposure might be caused by several unobserved variables at individual level. This raises an issue of endogeneity of the COVID exposure variable that we do not fully address here. However, we control for a range of socioeconomic variables both pre and during COVID in order to attenuate this issue. Second, there may be bias problems with the survey: (i) Changes between the CAPI and CATI rounds can lead to differing responses[52–55]. We found, for example, that incomes varied widely between the two rounds. However, we calculated the Spearman correlation of several before and during COVID cofounders,

and they were high and significant. (ii) There could be bias between those respondents who did the two rounds and those who only did the COVID round. We calculated means, and found that demographics were mostly similar, but economic variables had small differences. We identified an upward bias, with individuals with higher structural economic status being most likely to answer both rounds. Given our controls, we can assume that our results are a lower bound. These biases curtail our ability to generalize results to the population. A third limitation comes from the number of individuals and households with hospitalizations and deaths being low which is detrimental for statistical power. However, as pointed out before, the effect is so large that it is even visible for our small sample.

5.2. Conclusion and policy implications

Notwithstanding these limitations, our findings show the harmful effects of COVID exposure in terms of financial strains. Although the pandemic might seem over, there are still lessons to be learned and that could be helpful for eventual health shocks, even if the magnitude is less than that of COVID. First, these results highlight the importance of European Countries implementing their furlough, income support and business support programs to avoid mass layoffs reduce economic hardship. Second, given fact that the relation between COVID exposure and financial hardship is weakly mediated by job loss, indicates that government support measures should be amplified to more dimensions. Initiatives like subsidies for funerary expenses can be implemented nationwide. Also, additional support to relatives providing caregiving to those who become severely ill and need hospitalization. Further research may explore the effect of COVID-19 exposure by type of worker or occupation (blue-collar vs white collar) to gain more insights on how to design more effective government support schemes.

Conference Draft

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Tables and Figures

Figure 1. Hypothesized causal relationships between COVID infection and Financial Strain

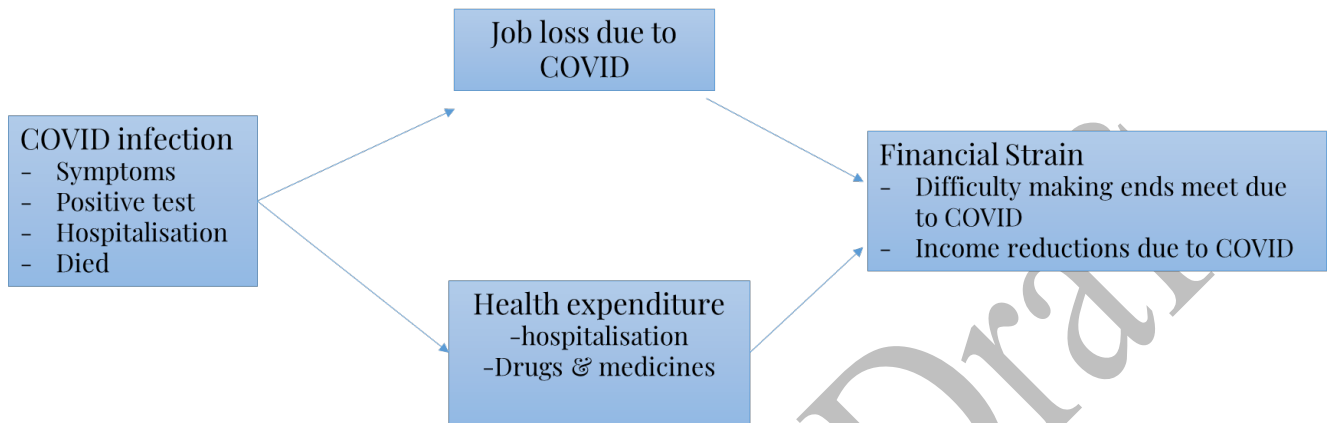


Table 1. Summary statistics of the sample used (Working sample. N = 8867⁺)

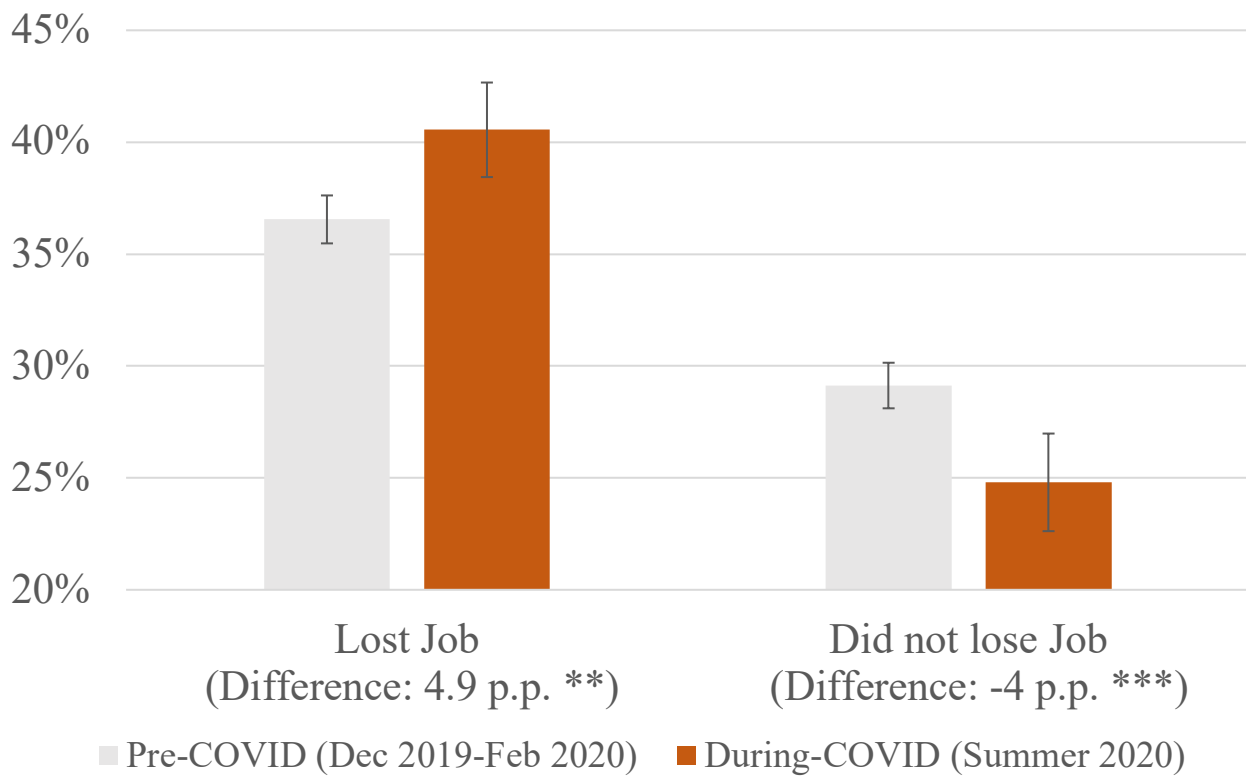
| <i>Panel A: Summary Statistics</i> | Mean | SD | Min | Max |
|--|--------|--------|----------------|-------------------|
| <i>Outcome Variable: Making Ends meet</i> | | | | |
| Difficulty Making Ends Meet During COVID (Dummy) | 28.3% | 0.450 | | |
| <i>Demographics</i> | | | | |
| Male (dummy) | 47.4% | 0.499 | | |
| Age (in years) | 62.4 | 5.90 | 50 | 96 |
| <i>Marital Status/Household</i> | | | | |
| Lives with partner (dummy) | 83.0% | 0.376 | | |
| Married (dummy) | 78.2% | 0.413 | | |
| Single (dummy) | 17% | 0.376 | | |
| Widowed (dummy) | 4.8% | 0.215 | | |
| Household size | 2.332 | 0.986 | 1 | 10 |
| <i>Education</i> | | | | |
| Less than Highschool (dummy) | 15.1% | 0.358 | | |
| Highschool (dummy) | 51.7% | 0.500 | | |
| Tertiary/Advanced degrees (dummy) | 33.2% | 0.471 | | |
| <i>Economic</i> | | | | |
| Has Supplementary Insurance (dummy) | 32.7% | 0.47 | | |
| Lost Job Because of the Pandemic (dummy) | 22.0% | 0.414 | | |
| Difficulty Making Ends Meet (pre-COVID) | 30.7% | 0.460 | | |
| Bottom Quintile* (1000€/year) | 11.536 | 7.538 | 0.02 | 40.80 |
| Second Quintile (1000€/year) | 18.209 | 11.377 | 2.68 | 54.00 |
| Third Quintile (1000€/year) | 23.570 | 14.997 | 3.99 | 66.00 |
| Fourth Quintile (1000€/year) | 31.255 | 21.684 | 5.52 | 99.89 |
| Fifth Quintile (1000€/year) | 66.413 | 98.203 | 7.85 | 1008.87 |
| <i>Additional Variables</i> | | | | |
| Stringency Index (Oxford) | 42.316 | 5.080 | 34.7 | 58.3 |
| GDP per capita - regional level (1000€/year) | 29.399 | 11.689 | 10.2 | 79.0 |
| <i>Panel B: COVID Exposure</i> | Mean | SD | Positive Cases | Total Respondents |
| Someone in the Household with Symptoms | 6.5% | 0.246 | 574 | 8867 |
| Someone in the Household had Positive Test | 2.0% | 0.140 | 176 | 8833 |
| Someone in the Household was Hospitalized | 0.4% | 0.064 | 36 | 8850 |
| Someone in the Household Died | 0.1% | 0.034 | 10 | 8859 |
| Respondent with Symptoms | 2.6% | 0.160 | 232 | 8867 |
| Respondent with Positive test | 0.6% | 0.079 | 55 | 8833 |
| Respondent Hospitalized | 0.1% | 0.035 | 11 | 8850 |

Note: Working sample using the panel structure of wave 8 and the inclusion criteria highlighted in Figure A1, for the case in which someone had symptoms in the Household.

Cases indicates the number of respondents that answered 'yes' to that type of exposure. *: Quintiles are done at the country level, so the variation of the pooled sample is high, and the ranges overlap.

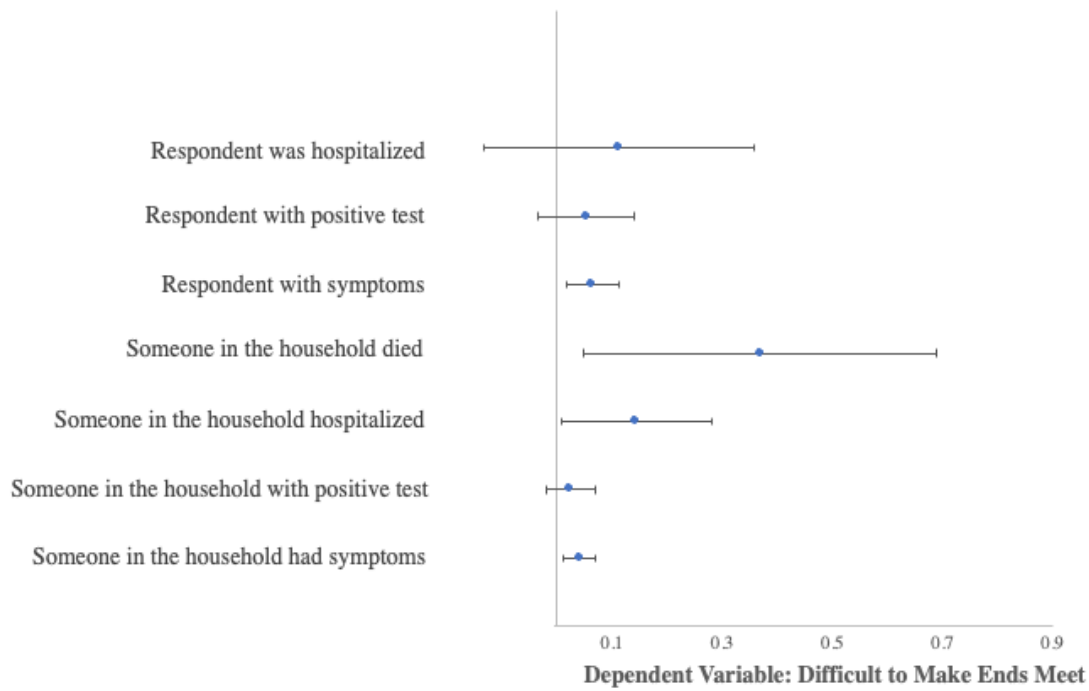
+: Sample sizes vary between 8833 to 8867, due to respondents refusing to answer a question but not another in the COVID exposure roster. All results presented in the table do not statistically change when using either sample.

Figure 2. Difficulty making ends Meet by Job Loss Status



Note: Each graph indicates the simple proportion of the Difficulty Making Ends Meet, for both the Pre-COVID and during COVID periods, by whether the individual indicated losing their job (or someone in the household) because of the pandemic. 95% confidence intervals using a logit regression are indicated as lines. Additionally, difference indicates the point estimate difference of the Difficulty Making Ends meet, inside the lost job categories; asterisks are provided for the test of hypothesis of the difference. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Figure 3. Forest Plot for the COVID Exposure Variable.



Notes: Adjusted association between COVID exposure and Difficulty making Ends meet, by type of exposure. Each row represents a different regression, with point estimates from the full model of Eq [1] described in section 3 [Coefficient β_1]. Lines denote 95% Confidence Intervals. Full results of these regressions are reported in the Appendix, Table A2.

Table 2. Results of the Mediation Analysis regressions

Panel A: Summary of regression results of the three equations.

| <i>Equation and Dependent Variable</i> | Type of Exposure, Coefficient of Exposure | | | | | | |
|---|---|------------------|----------------------|---------------------|------------------|----------------------|--------------------|
| | Self | | | Household | | | |
| | Symp- toms | Positive test | Hospita- lization | Symp- toms | Positive test | Hospita- lization | Death |
| Eq [1]: Ends meet (β_1) | 0.064*** (0.024) | 0.053 (0.044) | 0.113 (0.125) | 0.041*** (0.015) | 0.025 (0.023) | 0.144** (0.070) | 0.369** (0.163) |
| Eq [2]: Ends meet (α) | 0.060** (0.024) | 0.050 (0.043) | 0.109 (0.120) | 0.036** (0.015) | 0.024 (0.023) | 0.136** (0.068) | 0.368** (0.167) |
| Eq [3]: Job Loss (β_2) | 0.043 (0.029) | 0.030 (0.058) | 0.046 (0.135) | 0.047** (0.019) | 0.012 (0.031) | 0.087 (0.082) | 0.012 (0.146) |

Note: Each cell contains the point estimate of the COVID exposure for different regressions. Equations [x] refers to the equation numbering in the Methods section: [2] is the full regression, including the mediator and all controls. [1] does not include the mediator. [3] refers to the regression of the mediator on all controls. Robust standard errors in parenthesis, while asterisks denote significance levels, where * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

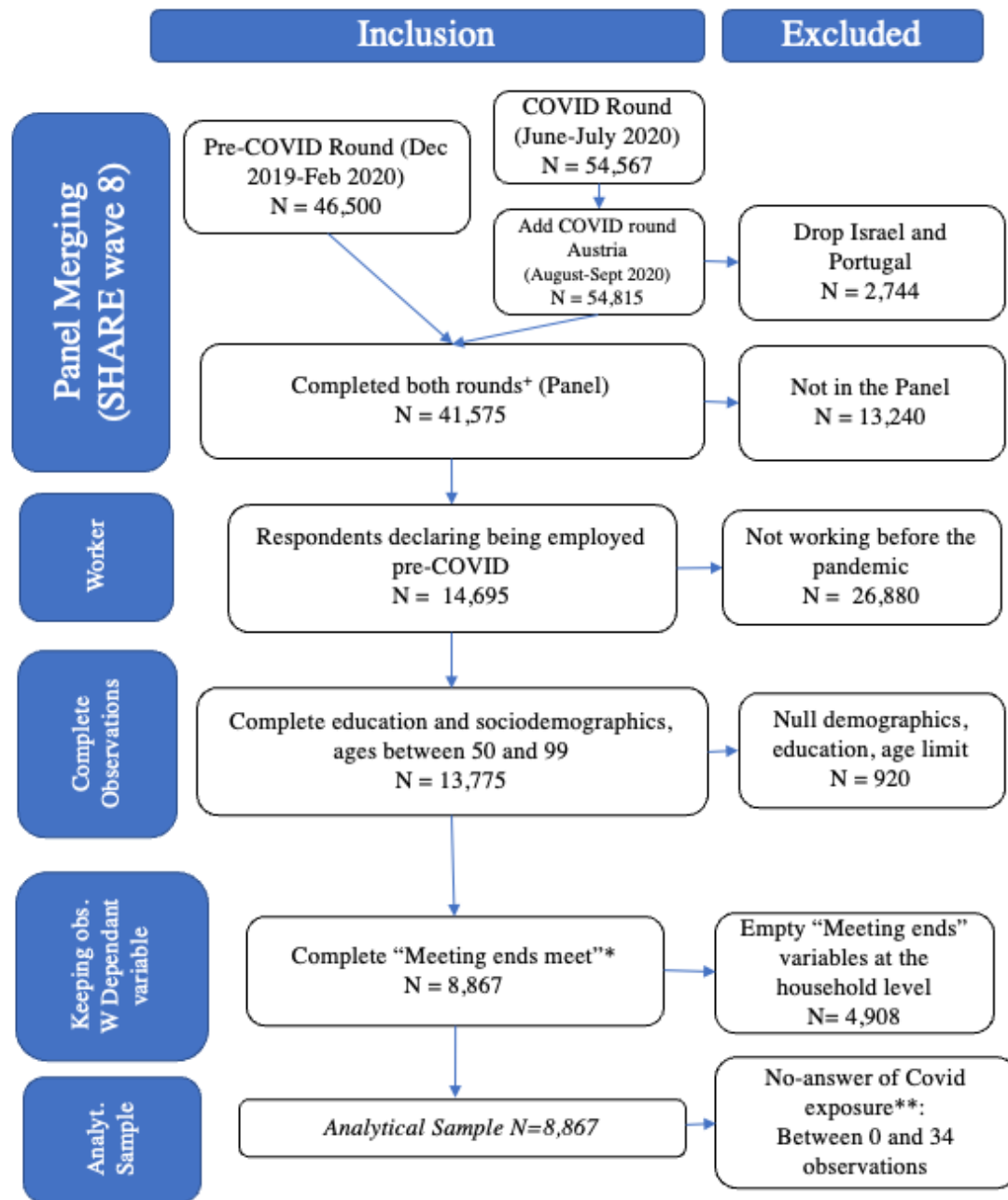
Panel B: Summary of the results on the mediation effect and different tests

| <i>Mediation Effect of Job Loss</i> | Type of Exposure | | | | | | |
|--|------------------|------------------|-------------------|---------------------|-----------------------|----------------------|----------------------|
| | Sympt. Self | Positive Self | Hospital. Self | Sympt. Household | Positive Household | Hospit. Household | Died in Household |
| Proportion of total effect that is mediated | 0.062 | 0.052 | 0.038 | 0.108 | 0.043 | 0.056 | 0.003 |
| <i>Mediation Tests (z-Values, significance given by stars)</i> | | | | | | | |
| Sobel | 1.468 | 0.510 | 0.340 | 2.419** | 0.367 | 1.058 | 0.081 |
| Aroian | 1.460 | 0.507 | 0.339 | 2.405** | 0.365 | 1.052 | 0.081 |
| Goodman | 1.477 | 0.513 | 0.342 | 2.432** | 0.369 | 1.064 | 0.081 |

Notes: The first row of value indicates the portion of the relationship between COVID and financial strain that is explained through the Job Loss Channel, which is equivalent to $\frac{\beta_1}{\alpha} - 1$. The last three rows are the z-values of the test of hypothesis of the proportion, indicating whether it is significantly different from zero. Significance levels * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Appendix

Figure A1. Sample selection flowchart



+ Includes also people inside the household of someone who completed the 8th round

* Making ends meet" questions are asked only to one member of the household. Thus, they should be assigned to all members of the household.

** The final analytical ranges between 8,833 and 8,867 observations.

Table A 1. Regressing Financial Difficulty on Exposure alone

| Dependent Variable: Financial Difficulty | Type of Exposure | | | | | | |
|---|---------------------|---------------------|---------------------|----------------------|----------------------|---------------------|---------------------|
| | Self | | | Household | | | |
| | Symp-toms | Positive test | Hospita-lization | Symp-toms | Positive test | Hospita-lization | Death |
| Covid Exposure | -0.047* (0.028) | -0.083 (0.054) | 0.081 (0.145) | -0.099*** (0.017) | -0.097*** (0.030) | 0.023 (0.077) | 0.218 (0.158) |
| Constant | 0.284*** (0.005) | 0.283*** (0.005) | 0.282*** (0.005) | 0.289*** (0.005) | 0.284*** (0.005) | 0.282*** (0.005) | 0.282*** (0.005) |
| Observations | 8867 | 8833 | 8850 | 8867 | 8833 | 8850 | 8859 |

Notes: Robust standard errors in parenthesis. Significance levels * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A 2. Regressions of Financial difficulty using the full set of controls, but without the Mediator (Equation 1)

| Dependent Variable: Financial Difficulty | Type of Exposure | | | | | | |
|--|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | Sympt. Self | Positive Self | Hospital. Self | Sympt H.H. | Positive HH | Hospit. HH | Died in HH |
| Covid Exposure | 0.064*** (0.024) | 0.053 (0.044) | 0.113 (0.125) | 0.041*** (0.015) | 0.025 (0.023) | 0.144** (0.070) | 0.369** (0.163) |
| Male (=1) | 0.003 (0.008) | 0.002 (0.008) | 0.002 (0.008) | 0.003 (0.008) | 0.002 (0.008) | 0.002 (0.008) | 0.003 (0.008) |
| Age (in years) | -0.000 (0.009) | -0.000 (0.009) | -0.000 (0.009) | -0.001 (0.009) | -0.000 (0.009) | -0.000 (0.009) | -0.001 (0.009) |
| Lives in Couple | -0.038** (0.015) | -0.037** (0.016) | -0.038** (0.016) | -0.039** (0.015) | -0.037** (0.016) | -0.039** (0.016) | -0.037** (0.015) |
| Married (=1) | 0.009 (0.021) | 0.008 (0.021) | 0.009 (0.021) | 0.010 (0.021) | 0.008 (0.021) | 0.010 (0.021) | 0.008 (0.021) |
| Single (=1) | 0.011 (0.020) | 0.009 (0.020) | 0.010 (0.020) | 0.011 (0.020) | 0.009 (0.020) | 0.010 (0.020) | 0.011 (0.020) |
| Household size | 0.022*** (0.005) | 0.022*** (0.005) | 0.022*** (0.005) | 0.022*** (0.005) | 0.021*** (0.005) | 0.022*** (0.005) | 0.022*** (0.005) |
| Less than Highschool | 0.094*** (0.012) | 0.094*** (0.013) | 0.094*** (0.013) | 0.095*** (0.012) | 0.094*** (0.013) | 0.095*** (0.013) | 0.095*** (0.012) |
| Highschool | 0.054*** (0.008) | 0.053*** (0.008) | 0.053*** (0.008) | 0.054*** (0.008) | 0.053*** (0.008) | 0.053*** (0.008) | 0.054*** (0.008) |
| Age Squared | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) |
| Diff. Meeting Ends HH (pre-COVID) | 0.346*** (0.013) | 0.345*** (0.013) | 0.347*** (0.013) | 0.346*** (0.013) | 0.345*** (0.013) | 0.347*** (0.013) | 0.347*** (0.013) |
| Has Supplementary Insurance | -0.026** (0.010) | -0.026** (0.010) | -0.026** (0.010) | -0.027*** (0.010) | -0.026** (0.010) | -0.026** (0.010) | -0.026** (0.010) |
| II Quintile | 0.024 (0.019) | 0.026 (0.019) | 0.026 (0.019) | 0.025 (0.019) | 0.026 (0.019) | 0.026 (0.019) | 0.026 (0.019) |
| III Quintile | -0.015 (0.018) | -0.012 (0.019) | -0.014 (0.019) | -0.015 (0.018) | -0.012 (0.019) | -0.013 (0.018) | -0.013 (0.018) |
| IV Quintile | -0.055*** (0.018) | -0.052*** (0.018) | -0.053*** (0.018) | -0.054*** (0.018) | -0.051*** (0.018) | -0.052*** (0.018) | -0.053*** (0.018) |
| Top Quintile | -0.076*** (0.018) | -0.074*** (0.018) | -0.075*** (0.018) | -0.077*** (0.018) | -0.074*** (0.018) | -0.075*** (0.018) | -0.074*** (0.018) |
| Log Regional GDP Cap | -0.034* (0.020) | -0.033 (0.020) | -0.033* (0.020) | -0.034* (0.020) | -0.033 (0.020) | -0.033* (0.020) | -0.033* (0.020) |
| Excess deaths per 1000 inhabitants | 0.026 (0.019) | 0.027 (0.019) | 0.027 (0.019) | 0.026 (0.019) | 0.027 (0.019) | 0.027 (0.019) | 0.027 (0.019) |
| Average stringency index by time of interview | 0.003 (0.004) | 0.003 (0.004) | 0.003 (0.004) | 0.003 (0.004) | 0.003 (0.004) | 0.003 (0.004) | 0.003 (0.004) |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 8867 | 8833 | 8850 | 8867 | 8833 | 8850 | 8859 |

Notes: Robust standard errors in parenthesis .Significance levels * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Each column reports results from a different regression, where the dependent variable is difficulty making ends meet. Omitted reference groups are for Education: Tertiary Education; for National Income: the 1st quantile of Income; for marital Status: widowed.

Table A 3. Regressions of Financial difficulty using the full set of controls, with the Mediator (Equation 2)

| Dependent Variable: Financial Difficulty | Type of Exposure | | | | | | |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | Sympt. Self | Positive Self | Hospital. Self | Sympt H.H. | Positive HH | Hospit. HH | Died in HH |
| Covid Exposure | 0.060** (0.024) | 0.050 (0.043) | 0.109 (0.120) | 0.036** (0.015) | 0.024 (0.023) | 0.136** (0.068) | 0.368** (0.167) |
| Lost job because of the pandemic | 0.093*** (0.010) | 0.093*** (0.010) | 0.094*** (0.010) | 0.093*** (0.010) | 0.093*** (0.010) | 0.094*** (0.010) | 0.094*** (0.010) |
| Male (==1) | 0.004 (0.008) | 0.003 (0.008) | 0.003 (0.008) | 0.004 (0.008) | 0.003 (0.008) | 0.003 (0.008) | 0.003 (0.008) |
| Age (in years) | 0.001 (0.009) | 0.001 (0.009) | 0.001 (0.009) | 0.001 (0.009) | 0.001 (0.009) | 0.001 (0.009) | 0.001 (0.009) |
| Lives in Couple | -0.042*** (0.015) | -0.041*** (0.015) | -0.042*** (0.015) | -0.042*** (0.015) | -0.041*** (0.015) | -0.043*** (0.015) | -0.041*** (0.015) |
| Married (==1) | 0.010 (0.020) | 0.009 (0.020) | 0.009 (0.020) | 0.010 (0.020) | 0.009 (0.020) | 0.010 (0.020) | 0.009 (0.020) |
| Single (==1) | 0.010 (0.019) | 0.008 (0.019) | 0.009 (0.019) | 0.010 (0.019) | 0.008 (0.019) | 0.010 (0.019) | 0.010 (0.019) |
| Household size | 0.022*** (0.005) | 0.021*** (0.005) | 0.022*** (0.005) | 0.022*** (0.005) | 0.021*** (0.005) | 0.022*** (0.005) | 0.022*** (0.005) |
| Less than Highschool | 0.091*** (0.012) | 0.091*** (0.012) | 0.091*** (0.012) | 0.091*** (0.012) | 0.091*** (0.012) | 0.091*** (0.012) | 0.091*** (0.012) |
| Highschool | 0.050*** (0.008) | 0.049*** (0.008) | 0.049*** (0.008) | 0.050*** (0.008) | 0.049*** (0.008) | 0.050*** (0.008) | 0.050*** (0.008) |
| Age Squared | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) |
| Diff. Meeting Ends HH (pre-COVID) | 0.345*** (0.013) | 0.344*** (0.013) | 0.346*** (0.013) | 0.345*** (0.013) | 0.344*** (0.013) | 0.346*** (0.013) | 0.346*** (0.013) |
| Has Supplementary Insurance | -0.024** (0.010) | -0.023** (0.010) | -0.024** (0.010) | -0.024** (0.010) | -0.023** (0.010) | -0.024** (0.010) | -0.024** (0.010) |
| II Quintile | 0.026 (0.019) | 0.027 (0.019) | 0.028 (0.019) | 0.026 (0.019) | 0.027 (0.019) | 0.028 (0.019) | 0.028 (0.019) |
| III Quintile | -0.014 (0.018) | -0.011 (0.018) | -0.013 (0.018) | -0.014 (0.018) | -0.011 (0.018) | -0.012 (0.018) | -0.012 (0.018) |
| IV Quintile | -0.054*** (0.018) | -0.051*** (0.018) | -0.052*** (0.018) | -0.053*** (0.018) | -0.051*** (0.018) | -0.052*** (0.018) | -0.052*** (0.018) |
| Top Quintile | -0.073*** (0.018) | -0.070*** (0.018) | -0.071*** (0.018) | -0.073*** (0.018) | -0.070*** (0.018) | -0.071*** (0.018) | -0.070*** (0.018) |
| Log Regional GDP Cap | -0.040** (0.020) | -0.039* (0.020) | -0.040** (0.020) | -0.040** (0.020) | -0.039** (0.020) | -0.040** (0.020) | -0.039** (0.020) |
| Excess deaths per 1000 inhabitants | 0.027 (0.018) | 0.027 (0.018) | 0.027 (0.018) | 0.026 (0.018) | 0.027 (0.018) | 0.027 (0.018) | 0.028 (0.018) |
| Average stringency index by time of interview | 0.004 (0.004) | 0.004 (0.004) | 0.004 (0.004) | 0.004 (0.004) | 0.004 (0.004) | 0.004 (0.004) | 0.004 (0.004) |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 8867 | 8833 | 8850 | 8867 | 8833 | 8850 | 8859 |

Notes: Robust standard errors in parenthesis. Significance levels * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Each column reports results from a different regression, where the dependent variable is difficulty making ends meet. Omitted reference groups are for Education: Tertiary Education; for National Income: the 1st quantile of Income; for marital Status: widowed.

Table A 4. Regressions of *Job loss* using the full set of controls (Equation 3)

| Dependent Variable: Job Loss | Type of Exposure | | | | | | |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | Sympt. Self | Positive Self | Hospital. Self | Sympt H.H. | Positive HH | Hospit. HH | Died in HH |
| Covid Exposure | 0.043 (0.029) | 0.030 (0.058) | 0.046 (0.135) | 0.047** (0.019) | 0.012 (0.031) | 0.087 (0.082) | 0.012 (0.146) |
| Male (=1) | -0.003 (0.009) | -0.005 (0.009) | -0.004 (0.009) | -0.003 (0.009) | -0.005 (0.009) | -0.004 (0.009) | -0.003 (0.009) |
| Age (in years) | -0.018 (0.011) | -0.016 (0.011) | -0.017 (0.011) | -0.018* (0.011) | -0.016 (0.011) | -0.017 (0.011) | -0.017 (0.011) |
| Lives in Couple | 0.040** (0.019) | 0.041** (0.019) | 0.042** (0.019) | 0.039** (0.019) | 0.041** (0.019) | 0.041** (0.019) | 0.041** (0.019) |
| Married (=1) | -0.003 (0.024) | -0.004 (0.024) | -0.005 (0.024) | -0.002 (0.024) | -0.004 (0.024) | -0.004 (0.024) | -0.003 (0.024) |
| Single (=1) | 0.007 (0.021) | 0.008 (0.021) | 0.006 (0.021) | 0.008 (0.021) | 0.008 (0.021) | 0.006 (0.021) | 0.006 (0.021) |
| Household size | 0.001 (0.005) | 0.001 (0.005) | 0.001 (0.005) | 0.001 (0.005) | 0.001 (0.005) | 0.001 (0.005) | 0.001 (0.005) |
| Less than Highschool | 0.037** (0.015) | 0.036** (0.015) | 0.035** (0.015) | 0.038*** (0.015) | 0.036** (0.015) | 0.036** (0.015) | 0.036** (0.015) |
| Highschool | 0.041*** (0.010) | 0.041*** (0.010) | 0.040*** (0.010) | 0.042*** (0.010) | 0.041*** (0.010) | 0.040*** (0.010) | 0.041*** (0.010) |
| Age Squared | 0.000* (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.000* (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) |
| Diff. Meeting Ends HH (pre-COVID) | 0.012 (0.012) | 0.013 (0.012) | 0.012 (0.012) | 0.011 (0.012) | 0.013 (0.012) | 0.012 (0.012) | 0.012 (0.012) |
| Has Supplementary Insurance | -0.025** (0.012) | -0.026** (0.012) | -0.025** (0.012) | -0.026** (0.012) | -0.026** (0.012) | -0.025** (0.012) | -0.025** (0.012) |
| II Quintile | -0.015 (0.021) | -0.015 (0.021) | -0.015 (0.021) | -0.015 (0.021) | -0.015 (0.021) | -0.015 (0.021) | -0.016 (0.021) |
| III Quintile | -0.016 (0.020) | -0.015 (0.020) | -0.015 (0.020) | -0.016 (0.020) | -0.015 (0.020) | -0.014 (0.020) | -0.016 (0.020) |
| IV Quintile | -0.010 (0.019) | -0.009 (0.019) | -0.009 (0.019) | -0.010 (0.019) | -0.008 (0.019) | -0.009 (0.019) | -0.010 (0.019) |
| Top Quintile | -0.043** (0.020) | -0.042** (0.020) | -0.042** (0.020) | -0.043** (0.020) | -0.042** (0.020) | -0.042** (0.020) | -0.043** (0.020) |
| Log Regional GDP Cap | 0.067*** (0.025) | 0.067*** (0.025) | 0.067*** (0.025) | 0.066*** (0.025) | 0.067*** (0.025) | 0.068*** (0.025) | 0.068*** (0.025) |
| Excess deaths per 1000 inhabitants | -0.004 (0.022) | -0.003 (0.022) | -0.003 (0.022) | -0.005 (0.022) | -0.003 (0.022) | -0.003 (0.022) | -0.003 (0.022) |
| Average stringency index by time of interview | -0.011** (0.005) | -0.011** (0.005) | -0.011** (0.005) | -0.011** (0.005) | -0.011** (0.005) | -0.011** (0.005) | -0.011** (0.005) |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 8867 | 8833 | 8850 | 8867 | 8833 | 8850 | 8859 |

Notes: Robust standard errors in parenthesis. Significance levels * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Each column reports results from a different regression, where the dependent variable is difficulty making ends meet. Omitted reference groups are for Education: Tertiary Education; for National Income: the 1st quantile of Income; for marital Status: widowed.

Table A 5. Results of the Mediation Analysis regressions for the *income reduction* variable

Panel A: Summary of regression results of the three equations.

| <i>Equation and Dependent Variable</i> | Type of Exposure, Coefficient of Exposure | | | | | | |
|--|---|------------------|----------------------|---------------------|-------------------|----------------------|------------------|
| | Self | | | Household | | | |
| | Symp- toms | Positive test | Hospita- lization | Symp- toms | Positive test | Hospita- lization | Death |
| Eq [1]: Income reduction (β_1) | 0.086** (0.034) | 0.075 (0.068) | 0.421*** (0.146) | 0.087*** (0.023) | -0.029 (0.035) | 0.216** (0.090) | 0.140 (0.170) |
| Eq [2]: Income reduction (α) | 0.071** (0.034) | 0.043 (0.062) | 0.374** (0.157) | 0.067*** (0.022) | -0.034 (0.033) | 0.165** (0.080) | 0.100 (0.107) |
| Eq [3]: Job Loss (β_2) | 0.038 (0.031) | 0.079 (0.068) | 0.119 (0.154) | 0.051** (0.021) | 0.013 (0.036) | 0.131 (0.091) | 0.103 (0.169) |
| Number of Observation | 6915 | 6900 | 6920 | 6915 | 6900 | 6920 | 6927 |

Note: Each cell contains the point estimate of the COVID exposure for different regressions.

Equations [x] refers to the equation numbering in the Methods section: [2] is the full regression, including the mediator and all controls. [1] does not include the mediator. [3] refers to the regression of the mediator on all controls. Robust standard errors in parenthesis, while asterisks denote significance levels, where * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Panel B: Summary of the results on the mediation effect and different tests

| <i>Mediation Effect of Job Loss</i> | Type of Exposure | | | | | | |
|--|------------------|------------------|-------------------|---------------------|-----------------------|----------------------|----------------------|
| | Sympt. Self | Positive Self | Hospital. Self | Sympt. Household | Positive Household | Hospit. Household | Died in Household |
| Proportion of total effect that is mediated | 0.173 | 0.380 | 0.209 | 0.206 | -.307 | 0.311 | 0.407 |
| Mediation Tests (z-Values, significance given by stars) | | | | | | | |
| Sobel | 0.792 | 1.424 | 1.420 | 1.732* | 0.465 | 2.106** | 1.227 |
| Aroian | 0.791 | 1.422 | 1.419 | 1.730* | 0.464 | 2.104* | 1.225 |
| Goodman | 0.793 | 1.426 | 1.422 | 1.734* | 0.466 | 2.109* | 1.228 |

Notes: The first row of value indicates the portion of the relationship between COVID and financial strain that is explained through the Job Loss Channel, which is equivalent to $\frac{\beta_1}{\alpha} - 1$. The last three rows are the z-values of the test of hypothesis of the proportion, indicating whether it is significantly different from zero. Significance levels * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A 6. Regressions of Financial difficulty using the full set of controls, with the Mediator (Equation 1) using *Probit Regression*

| Dependent Variable: Financial Difficulty | Type of Exposure | | | | | | |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | Sympt. Self | Positive Self | Hospital. Self | Sympt H.H. | Positive HH | Hospit. HH | Died in HH |
| Covid Exposure | 0.560*** (0.200) | 0.440 (0.354) | 0.731 (0.634) | 0.355** (0.142) | 0.191 (0.216) | 1.021** (0.451) | 2.524*** (0.774) |
| Lost job because of the pandemic | 0.756*** (0.076) | 0.757*** (0.076) | 0.769*** (0.076) | 0.753*** (0.076) | 0.757*** (0.076) | 0.767*** (0.076) | 0.770*** (0.076) |
| Male (==1) | 0.023 (0.065) | 0.013 (0.065) | 0.014 (0.065) | 0.023 (0.065) | 0.013 (0.065) | 0.013 (0.065) | 0.014 (0.065) |
| Age (in years) | 0.009 (0.080) | 0.009 (0.080) | 0.006 (0.079) | 0.004 (0.080) | 0.008 (0.080) | 0.006 (0.079) | 0.002 (0.080) |
| Lives in Couple | -0.422*** (0.137) | -0.404*** (0.137) | -0.414*** (0.137) | -0.424*** (0.137) | -0.408*** (0.137) | -0.423*** (0.138) | -0.411*** (0.137) |
| Married (==1) | 0.186 (0.177) | 0.178 (0.177) | 0.184 (0.178) | 0.194 (0.177) | 0.179 (0.178) | 0.194 (0.178) | 0.183 (0.178) |
| Single (==1) | 0.198 (0.153) | 0.176 (0.153) | 0.190 (0.153) | 0.201 (0.153) | 0.176 (0.153) | 0.193 (0.153) | 0.196 (0.153) |
| Household size | 0.163*** (0.034) | 0.158*** (0.034) | 0.164*** (0.034) | 0.160*** (0.034) | 0.158*** (0.034) | 0.163*** (0.034) | 0.160*** (0.034) |
| Less than Highschool | 0.811*** (0.104) | 0.816*** (0.104) | 0.817*** (0.103) | 0.812*** (0.104) | 0.815*** (0.103) | 0.821*** (0.103) | 0.824*** (0.103) |
| Highschool | 0.499*** (0.078) | 0.491*** (0.078) | 0.493*** (0.078) | 0.501*** (0.079) | 0.491*** (0.078) | 0.495*** (0.078) | 0.500*** (0.078) |
| Age Squared | -0.000 (0.001) | -0.000 (0.001) | -0.000 (0.001) | -0.000 (0.001) | -0.000 (0.001) | -0.000 (0.001) | -0.000 (0.001) |
| Diff. Meeting Ends HH (pre-COVID) | 1.826*** (0.069) | 1.809*** (0.070) | 1.817*** (0.069) | 1.826*** (0.069) | 1.807*** (0.069) | 1.820*** (0.069) | 1.819*** (0.069) |
| Has Supplementary Insurace | -0.242** (0.102) | -0.237** (0.102) | -0.237** (0.102) | -0.245** (0.102) | -0.238** (0.102) | -0.236** (0.102) | -0.244** (0.102) |
| II Quintile | 0.176 (0.136) | 0.184 (0.136) | 0.188 (0.136) | 0.175 (0.136) | 0.185 (0.136) | 0.189 (0.136) | 0.192 (0.135) |
| III Quintile | -0.110 (0.136) | -0.101 (0.136) | -0.114 (0.136) | -0.108 (0.135) | -0.098 (0.136) | -0.110 (0.135) | -0.104 (0.135) |
| IV Quintile | -0.434*** (0.134) | -0.430*** (0.134) | -0.437*** (0.134) | -0.436*** (0.134) | -0.429*** (0.134) | -0.435*** (0.133) | -0.435*** (0.133) |
| Top Quintile | -0.629*** (0.137) | -0.633*** (0.138) | -0.643*** (0.137) | -0.631*** (0.137) | -0.631*** (0.138) | -0.643*** (0.137) | -0.629*** (0.136) |
| Log Regional GDP Cap | -0.355** (0.177) | -0.357** (0.177) | -0.359** (0.176) | -0.357** (0.177) | -0.359** (0.177) | -0.360** (0.177) | -0.368** (0.177) |
| Excess deaths per 1000 inhabitants | 0.271** (0.121) | 0.290** (0.120) | 0.290** (0.120) | 0.271** (0.121) | 0.290** (0.120) | 0.292** (0.120) | 0.296** (0.120) |
| Average stringency index by time of interview | 0.046 (0.047) | 0.047 (0.047) | 0.044 (0.047) | 0.048 (0.047) | 0.048 (0.047) | 0.044 (0.047) | 0.049 (0.047) |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 8867 | 8851 | 8871 | 8867 | 8851 | 8871 | 8881 |

Notes: Robust standard errors in parenthesis. Significance levels * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Each column reports results from a different **logistic** regression, where the dependent variable is difficulty making ends meet. Omitted reference groups are for Education: Tertiary Education; for National Income: the 1st quantile of Income; for marital Status: widowed.

Table A 7. Results of the Mediation Analysis regressions for the Meeting Ends variables, excluding Austria

Panel A: Summary of regression results of the three equations.

| Equation and Dependent Variable | Type of Exposure, Coefficient of Exposure | | | | | | |
|------------------------------------|---|------------------|----------------------|---------------------|------------------|----------------------|--------------------|
| | Self | | | Household | | | |
| | Symp- toms | Positive test | Hospita- lization | Symp- toms | Positive test | Hospita- lization | Death |
| Eq [1]: Ends Meet (β_1) | 0.080*** (0.028) | 0.053 (0.048) | 0.140 (0.162) | 0.052*** (0.017) | 0.035 (0.028) | 0.166** (0.083) | 0.417** (0.203) |
| Eq [2]: Ends Meet (α_1) | 0.077*** (0.028) | 0.047 (0.046) | 0.119 (0.155) | 0.049*** (0.017) | 0.035 (0.028) | 0.146* (0.080) | 0.399** (0.212) |
| Eq [3]: Job Loss (β_2) | 0.032 (0.030) | 0.059 (0.060) | 0.207 (0.172) | 0.033 (0.021) | 0.008 (0.034) | 0.200** (0.098) | 0.180 (0.194) |

Note: Each cell contains the point estimate of the COVID exposure for different regressions.

Equations [x] refers to the equation numbering in the Methods section: [2] is the full regression, including the mediator and all controls. [1] does not include the mediator. [3] refers to the regression of the mediator on all controls. Robust standard errors in parenthesis, while asterisks denote significance levels, where * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Panel B: Summary of the results on the mediation effect and different tests

| Mediation Effect of Job Loss | Type of Exposure | | | | | | |
|--|------------------|------------------|-------------------|---------------------|-----------------------|----------------------|----------------------|
| | Sympt. Self | Positive Self | Hospital. Self | Sympt. Household | Positive Household | Hospit. Household | Died in Household |
| Proportion of total effect that is mediated | 0.040 | .109 | 0.148 | 0.063 | 0.022 | 0.120 | 0.043 |
| <i>Mediation Tests (z-Values, significance given by stars)</i> | | | | | | | |
| Sobel | 1.055 | 0.974 | 1.190 | 1.583 | 0.231 | 1.982** | 0.919 |
| Aroian | 1.047 | 0.966 | 1.180 | 1.571 | 0.229 | 1.967** | 0.911 |
| Goodman | 1.065 | 0.982 | 1.199 | 1.596 | 0.233 | 1.998** | 0.926 |

Notes: The first row of value indicates the portion of the relationship between COVID and financial strain that is explained through the Job Loss Channel, which is equivalent to $\frac{\beta_1}{\alpha} - 1$. The last three rows are the z-values of the test of hypothesis of the proportion, indicating whether it is significantly different from zero. Significance levels * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A 8. Results of the regressions and mediation for the Ends Meet variable, but using Job loss at the individual level

Panel A: Summary of regression results of the three equations.

| Equation and Dependent Variable | Type of Exposure, Coefficient of Exposure | | | | | | |
|------------------------------------|---|------------------|----------------------|---------------------|------------------|----------------------|--------------------|
| | Self | | | Household | | | |
| | Symp- toms | Positive test | Hospita- lization | Symp- toms | Positive test | Hospita- lization | Death |
| Eq [1]: Ends Meet (β_1) | 0.081*** (0.028) | 0.052 (0.047) | 0.139 (0.164) | 0.052*** (0.017) | 0.035 (0.028) | 0.157** (0.081) | 0.415** (0.203) |
| Eq [2]: Ends Meet (α_1) | 0.078*** (0.028) | 0.047 (0.045) | 0.118 (0.157) | 0.049*** (0.017) | 0.034 (0.026) | 0.139* (0.078) | 0.398** (0.212) |
| Eq [3]: Job Loss (β_2) | 0.032 (0.030) | 0.052 (0.059) | 0.209 (0.171) | 0.033 (0.020) | 0.013 (0.034) | 0.188** (0.095) | 0.177 (0.194) |

Note: Each cell contains the point estimate of the COVID exposure for different regressions.

Equations [x] refers to the equation numbering in the Methods section: [2] is the full regression, including the mediator and all controls. [1] does not include the mediator. [3] refers to the regression of the mediator on all controls. Robust standard errors in parenthesis, while asterisks denote significance levels, where * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Panel B: Summary of the results on the mediation effect and different tests

| Mediation Effect of Job Loss | Type of Exposure | | | | | | |
|--|------------------|------------------|-------------------|---------------------|-----------------------|----------------------|----------------------|
| | Sympt. Self | Positive Self | Hospital. Self | Sympt. Household | Positive Household | Hospit. Household | Died in Household |
| Proportion of total effect that is mediated | 0.035 | .098 | 0.151 | 0.062 | 0.036 | 0.119 | 0.043 |
| <i>Mediation Tests (z-Values, significance given by stars)</i> | | | | | | | |
| Sobel | 0.938 | 0.874 | 1.220 | 1.580 | 0.377 | 1.918* | 0.906 |
| Aroian | 0.931 | 0.867 | 1.198 | 1.568 | 0.374 | 1.904* | 0.899 |
| Goodman | 0.946 | 0.881 | 1.216 | 1.592 | 0.380 | 1.932* | 0.913 |

Notes: The first row of value indicates the portion of the relationship between COVID and financial strain that is explained through the Job Loss Channel, which is equivalent to $\frac{\beta_1}{\alpha} - 1$. The last three rows are the z-values of the test of hypothesis of the proportion, indicating whether it is significantly different from zero. Significance levels * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A 9. Regressions of Financial difficulty using the full set of controls, with the Mediator (Equation 1) using a Lost Job variable accounting for weeks of unemployment

| Dependent Variable: Financial Difficulty | Type of Exposure | | | | | | |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | Sympt. Self | Positive Self | Hospital. Self | Sympt H.H. | Positive HH | Hospit. HH | Died in HH |
| Covid Exposure | 0.075*** (0.028) | 0.048 (0.045) | 0.117 (0.156) | 0.047*** (0.017) | 0.033 (0.026) | 0.134* (0.079) | 0.395* (0.221) |
| Lost job because of the pandemic (weeks) | 0.010*** (0.001) | 0.010*** (0.001) | 0.010*** (0.001) | 0.010*** (0.001) | 0.010*** (0.001) | 0.010*** (0.001) | 0.010*** (0.001) |
| Male (=1) | 0.001 (0.009) | -0.001 (0.009) | -0.001 (0.009) | 0.001 (0.009) | -0.001 (0.009) | -0.001 (0.009) | -0.001 (0.009) |
| Age (in years) | 0.004 (0.011) | 0.005 (0.011) | 0.004 (0.011) | 0.004 (0.011) | 0.004 (0.011) | 0.004 (0.011) | 0.004 (0.011) |
| Lives in Couple | -0.034** (0.017) | -0.031* (0.017) | -0.031* (0.017) | -0.034** (0.017) | -0.031* (0.017) | -0.032* (0.017) | -0.031* (0.017) |
| Married (=1) | 0.006 (0.022) | 0.005 (0.022) | 0.005 (0.022) | 0.007 (0.022) | 0.005 (0.022) | 0.006 (0.022) | 0.006 (0.022) |
| Single (=1) | 0.011 (0.020) | 0.009 (0.020) | 0.010 (0.020) | 0.011 (0.020) | 0.009 (0.020) | 0.011 (0.020) | 0.011 (0.020) |
| Household size | 0.019*** (0.006) | 0.018*** (0.006) | 0.019*** (0.006) | 0.019*** (0.006) | 0.018*** (0.006) | 0.019*** (0.006) | 0.018*** (0.006) |
| Less than Highschool | 0.081*** (0.015) | 0.081*** (0.015) | 0.081*** (0.015) | 0.081*** (0.015) | 0.081*** (0.015) | 0.082*** (0.015) | 0.082*** (0.015) |
| Highschool | 0.047*** (0.009) | 0.046*** (0.009) | 0.046*** (0.009) | 0.047*** (0.009) | 0.046*** (0.009) | 0.047*** (0.009) | 0.047*** (0.009) |
| Age Squared | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) |
| Diff. Meeting Ends HH (pre-COVID) | 0.348*** (0.014) | 0.345*** (0.015) | 0.346*** (0.014) | 0.348*** (0.014) | 0.345*** (0.015) | 0.347*** (0.014) | 0.346*** (0.014) |
| Has Supplementary Insurance | -0.027** (0.012) | -0.027** (0.012) | -0.027** (0.012) | -0.028** (0.012) | -0.027** (0.012) | -0.026** (0.012) | -0.028** (0.012) |
| II Quintile | 0.017 (0.022) | 0.018 (0.022) | 0.019 (0.022) | 0.018 (0.022) | 0.018 (0.022) | 0.019 (0.022) | 0.017 (0.022) |
| III Quintile | -0.011 (0.021) | -0.009 (0.021) | -0.011 (0.021) | -0.010 (0.021) | -0.009 (0.021) | -0.010 (0.021) | -0.011 (0.021) |
| IV Quintile | -0.050** (0.020) | -0.049** (0.020) | -0.050** (0.020) | -0.050** (0.020) | -0.048** (0.020) | -0.050** (0.020) | -0.051** (0.020) |
| Top Quintile | -0.073*** (0.020) | -0.073*** (0.020) | -0.075*** (0.020) | -0.074*** (0.020) | -0.073*** (0.020) | -0.075*** (0.020) | -0.074*** (0.020) |
| Log Regional GDP Cap | -0.023 (0.022) | -0.022 (0.022) | -0.022 (0.022) | -0.023 (0.022) | -0.022 (0.022) | -0.022 (0.022) | -0.025 (0.022) |
| Excess deaths per 1000 inhabitants | 0.025 (0.021) | 0.026 (0.021) | 0.026 (0.021) | 0.024 (0.021) | 0.026 (0.021) | 0.026 (0.021) | 0.027 (0.021) |
| Average stringency index by time of interview | 0.003 (0.005) | 0.003 (0.005) | 0.003 (0.005) | 0.004 (0.005) | 0.003 (0.005) | 0.003 (0.005) | 0.004 (0.005) |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 6727 | 6716 | 6732 | 6727 | 6716 | 6732 | 6736 |

Notes: Robust standard errors in parenthesis. Significance levels * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Each column reports results from a different **logistic** regression, where the dependent variable is difficulty making ends meet. Omitted reference groups are for Education: Tertiary Education; for National Income: the 1st quantile of Income; for marital Status: widowed.