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LONGEVITY PERCEPTIONS AND SAVING DECISIONS  
DURING THE COVID-19 OUTBREAK:  
AN EXPERIMENTAL INVESTIGATION

Abigail Hurwitz  
Olivia S. Mitchell  
Orly Sade

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**ABSTRACT**

We experimentally study individuals' perceptions about and advice to others regarding retirement savings and annuitization during the pandemic. Many people recommend that others save more for retirement, but those most affected by the pandemic tell others to save and annuitize less. We investigate two possible channels for this result and show that the pandemic does not substantially alter optimism regarding survival probabilities. Hence, we conclude that economic factors are driving our results. Consequently, some financial ramifications of the COVID-19 outbreak are yet to be revealed, as the pandemic is having longer-term effects on peoples' willingness to save and annuitize.

Abigail Hurwitz  
Hebrew University of Jerusalem  
Environmental Economics and Management  
Robert H. Smith Faculty of Agriculture,  
Food and Environment  
Jerusalem  
Israel  
abigail.hurwitz@mail.huji.ac.il

Orly Sade  
Hebrew University of Jerusalem  
The Jerusalem Business School  
Mount Scopus  
Jerusalem  
Israel  
orlysade@huji.ac.il

Olivia S. Mitchell  
University of Pennsylvania  
The Wharton School  
3620 Locust Walk, St 3000 SH-DH  
Philadelphia, PA 19104-6302  
and NBER  
mitchelo@wharton.upenn.edu

**Longevity Perceptions and Saving Decisions during the COVID-19 Outbreak:  
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Abigail Hurwitz, Olivia S. Mitchell and Orly Sade

The COVID-19 pandemic has wrought not only profound damage to peoples' health around the world but also to households' finances (Achou et al. 2020, Lusardi et al., 2020, Mitchell 2020). The short-term economic impacts for spending, debt, and unemployment have been recently examined by numerous researchers and policymakers (e.g., Baker et al. 2020, Hanspal et al, 2020). There have also been studies of marked changes in peoples' saving patterns and retirement preparedness. For instance, the TIAA (2020) Financial Resiliency Survey reported that 60% of Americans believe they are "off track" with their retirement savings, and almost one third attributed this reality to the COVID-19 pandemic.

Our paper seeks to understand the potential long-term implications of the pandemic regarding savings toward retirement. We aim to understand how people think about that by asking them how they would advise others to behave. We also investigate how these recommendations differ, depending on their personal experience with the Coronavirus. We use a nationally representative online survey fielded in mid-2020 to learn about how Americans assess their own survival probabilities, and we compare these to sex and age life tables for the general population to determine whether they are optimistic or pessimistic *vis a vis* the average. Next, we ask respondents about their chances of getting COVID-19, suffering financially from, or dying from the virus. We document that those with low income, low financial literacy, and low numeracy skills perceive themselves to be most vulnerable to the pandemic in terms of health and financial consequences. Finally, we use experimental vignettes to measure the relation between peoples' self-assessed vulnerability to the virus and their recommendations to others regarding how much to save and annuitize.

We show that most participants in our survey recommend saving more, consistent with the recent TIAA (2020) report indicating that two-thirds of their survey participants would like to do so. Most respondents also recommend that retirees convert part of their retirement savings into lifetime income annuities. Yet we also discover that those affected financially from COVID-19 are less likely to recommend that others save and annuitize. We also seek to disentangle two possible mechanisms leading to this result: altered survival probabilities, or altered economic circumstances. Interestingly, savings recommendations decline as peoples' expected chances rise of running out of money due to the virus. Nevertheless, their savings recommendations are unaffected by respondents' reported chances of getting COVID-19 or dying from it. We also show that they are less likely to recommend annuitization, the higher are their expected chances of running out of money or dying from the virus. Accordingly, changes in saving and annuitization recommendations appear to flow from economic losses, rather than changes in life expectancy perceptions. Our results have important implications for future retirement security, since those who are currently most financially vulnerable will probably be most negatively affected.

## **I. Methodology**

We developed, fielded, and analyzed a nationally representative survey of Americans using the Prolific survey platform age 35-83, for whom we gathered a variety of demographic data, and to whom we posed hypothetical questions regarding saving behavior and demand for longevity insurance products. Specifically, building on Brown et al. (2019), Samek et al. (2019), and Hurwitz et al. (2020), we created two vignettes.<sup>1</sup> About half of our participants (2,542) was randomly selected to advise a hypothetical single man (woman) age 60 with no children regarding how to withdraw his (her) retirement savings. The other half (2,550) was asked to advise a hypothetical

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<sup>1</sup> The use of vignettes has a long history in the medical field, and they have of late become increasingly popular in social science applications.

single man (woman) age 40 with no children regarding whether to increase his (her) retirement savings. Furthermore, we assessed participants' perceptions of getting COVID-19, suffering from financial consequences due to the virus, or dying from it. Other questions included measures of financial literacy and numeracy, time and risk preferences, and self-assessed health.<sup>2</sup>

## **II. Data and Results**

In total, 5,108 U.S residents age 35-83 participated in our Prolific study.<sup>3</sup> Respondents' mean age was 48.9, and 43.7% were male. Regarding education, 25.5% had some college, and 36% had a bachelor's degree. Over half (58.4%) were married, 21.73% never married, 2.44% widowed, 14.9% divorced, and 2.2% separated. Of the respondents, 84.9% believed that their health was good, very good, or excellent. In our sample, median monthly self-reported income was US\$4,900, or about US\$58,800 in annual terms; this is close to the median annual household income of US\$61,940 reported by the U.S Census Bureau (2018).<sup>4</sup>

### **A. COVID-19 affects the most vulnerable**

To find out about peoples' exposure to COVID-19, we first ask all respondents to evaluate how strongly they anticipate being affected by the virus. Our respondents' average probability of getting the virus is 26.3%, with 19.4% believing they would die from it if infected. They also estimate a 21.4% probability of running out of money in the next three months, due to the pandemic.

We next explore the relation between participants' perceptions about COVID-19 and their self-reported attitudes and characteristics. These results (detailed in the Appendix) are consistent with other findings (such as Clark et. al, 2020) and confirm that the most vulnerable respondents

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<sup>2</sup> The survey questionnaire is available in Hurwitz et al. (2020).

<sup>3</sup> Only 5,092 out of 5,108 participants responded to the vignette question.

<sup>4</sup> Average household monthly income was about US\$13,600 (about US\$162,000 annually).

also believe they are more exposed to both financial and health problems due to the pandemic. Specifically, being older, better-educated, married, in good health, scoring high on financial literacy and numeracy tests, and having higher income are all significantly associated with a smaller chance of expecting to run out of money in the next three months due to the virus. By contrast, those expecting to run short include respondents evincing a strong present preference, along with those sharing the same household with more people. We also find that peoples' self-reported chances of getting COVID-19 are significantly lower among men, older respondents, never marrieds, those in good health and better educated, as well as the more financially and numerically literate. Finally, those anticipating they are more likely to die from COVID-19 are older and widowed; conversely, respondents least anticipating that they will die from the virus are married, in good health, and financially as well as numerically literate. Generally speaking, our results conform to other evidence regarding the factors associated with greater vulnerability to the virus (e.g., Shibata 2020).<sup>5</sup>

## **B. COVID-19 and long-term financial decisions**

Next, we explore respondents' views of savings and annuitization during the pandemic and examine how these assessments are affected by exposure to the virus. A first observation is that most survey respondents recommend that the vignette individual save more: 30.6% advise the vignette person to boost savings, and 52.7% advise the vignette individual to *significantly* increase savings. A substantial majority, 74%, also advise the vignette individual to annuitize a portion of his (her) retirement nest egg.

Table 1 shows that respondents' exposure to COVID-19 reduces both their savings and their annuitization recommendations. Specifically, Column (1) indicates that the average marginal

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<sup>5</sup> The fact that our results are consistent with other research and anecdotal evidence reassures us that our respondents paid attention to the questions and answered reasonably.

effect of running out of money due to COVID-19 is significantly negatively associated with the recommendation to save more, by -19.7 % ( $=-0.108/0.547$ ). A similar negative link is detected in Column (2) between the same COVID-19 variable and the recommendation to annuitize, by -13% ( $=-0.097/0.746$ ). The probability of getting or dying from the virus does not significantly alter peoples' savings recommendations, but the average marginal effect of peoples' self-reported chances of dying from Covid-19 reduces annuitization recommendations by -12% ( $=-0.09/0.746$ ). Other factors behave as anticipated, with the more financially literate recommending more saving and more annuitization, other things constant.<sup>6</sup> People who are strongly present-focused are less likely to advise additional saving or annuitization.

In Column (3) of Table 1, the dependent variable is an indicator of survival for “optimism” – that is the person’s reported subjective chance of surviving to a given age (SLE) minus the objective probability (LE) (as in Hurwitz et al. 2020). Results confirm that people’s survival optimism is not associated with the chances of dying from COVID-19, running out of money due to the pandemic, or having a greater chance of getting COVID-19. These findings lead us to conclude that our results in the first two columns of the Table are driven by the virus’ anticipated impacts on peoples’ financial and economic status, rather than dramatically altering their own anticipated longevity.

Interestingly, our findings also demonstrate that peoples’ attributes and perceptions about the Coronavirus shape their recommendations to others. Specifically, we control on the personal characteristics of the person asking for advice, and there is no inherent conflict of interest in the vignettes since those proffering the advice do not benefit from it. Nevertheless, the respondent’s beliefs about the chances of dying from or running out of money due to COVID-19 do influence

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<sup>6</sup> All multivariate models also control on demographics (age, sex, education, health, income, # in the household and race).

recommendations made to the vignette person. This is consistent with Linnainmaa et al. (forthcoming), indicating that an advisor's own beliefs and preferences drive recommendations made. Moreover, Foerster et al. (2017) concluded that advisors' characteristics explained twice as much of the variation in risk taking compared to clients' characteristics.

### **III. Conclusions and Implications**

The COVID-19 pandemic is wreaking substantial and immediate damage to health and wellbeing. This research suggests that the pandemic will also have longer-term effects, altering peoples' willingness to save for retirement and convert part of their retirement nest eggs into annuities. Additionally, the pandemic's impacts will be unevenly distributed. Specifically, being younger, less educated, unmarried, in poor health, scoring low on financial literacy and numeracy tests, and having lower income, are all significantly associated with a higher anticipated chance of getting the virus and expecting to run out of money in the next three months due to the virus. Additional contributors include being present-biased and sharing the same household with more people. We also find that those who believe they are more likely to run out of money due to COVID-19 are substantially less likely to recommend saving more and annuitizing. We believe that this is prompted by the virus' anticipated impacts on peoples' financial and economic status, rather than dramatically altering peoples' expected longevity. Thus the advice given by the more vulnerable subjects indicates their own actions during the pandemic, and the negative consequences of these actions will be revealed in the future.

Our results have important implications for insurance commissioners and pension regulators. To date, several countries including Israel, the US, Australia, Chile, and Peru have permitted people to withdraw lump sums from their retirement plans as part of COVID-19 relief. Yet such a policy, along with peoples' pandemic-induced loss of interest in saving and



annuitization, is likely to undermine retirement security in the future, and those who are currently most financially vulnerable will probably be harmed the most.

## References

- Achou, Bertrand, David Boisclair, Philippe d' Astous, Raquel Fonseca, Franca Glenzer, and Pierre-Carl Michaud. (*forthcoming*). The Early Impact of the COVID-19 Pandemic on Household Finances in Québec. *Canadian Public Policy*.
- Baker, Scott R., R.A. Farrokhnia, Steffen Meyer, Michaela Pagel, and Constantie Yannelis. (*forthcoming*). How Does Household Spending Respond to an Epidemic? Consumption During the 2020 COVID-19 Pandemic. *Review of Asset Pricing Studies, Covid-19 and Financial Markets*
- Brown, Jeffrey R., Arie Kapteyn, Erzo Luttmer, Olivia S. Mitchell, and Anya A. Samek. (2019). Behavioral Impediments to Valuing Annuities: Complexity and Choice Bracketing. *Review of Economics and Statistics*. [https://doi.org/10.1162/rest\\_a\\_00892](https://doi.org/10.1162/rest_a_00892).
- Clark, A. E., D'Ambrosio, C., & Lepinteur, A. (2020). The Fall in Income Inequality during COVID-19 in Five European Countries. ECINEQ Working Paper No. 565, Society for the Study of Economic Inequality.
- Foerster, S., Juhani T. Linnainmaa, Brian T. Melzer, and Alessandro Previtero (2017). Retail Financial Advice: Does One Size Fit All? *Journal of Finance* 72 (4): 1441–1482.
- Hanspal, Tobin, Annika Weber, and Johannes Wohlfart. (2020). Exposure to the COVID-19 Stock Market Crash and its Effect on Household Expectations. CEBI Working Paper Series, No. 13/20.
- Hurwitz, Abigail, Olivia S. Mitchell, and Orly Sade. (2020). Testing Methods to Enhance Longevity Awareness. *Report to the TIAA Institute*.
- Linnainmaa, Juhanni, Brian Melzer, and Alessandro Previtero. (*forthcoming*). The Misguided Beliefs of Financial Advisors. *Journal of Finance*.
- Lusardi, Annamaria, Andrea Hasler, and Paul Yakoboski. (2020). Building Up Financial Literacy and Financial Resilience. *Mind & Society*: 1-7.
- Mitchell, Olivia S. (2020). Building Better Retirement Systems in the Wake of the Global Pandemic. NBER WP 27261.
- Samek, Anya, Arie Kapteyn, and Andre Gray. (2019). Using Vignettes to Improve Understanding of Social Security and Annuities. NBER WP 26176.
- Shibata, Ippyei (2020). The Distributional Impact of Recessions: The Global Financial Crisis and the Pandemic Recession. IMF Working Paper 20/96.

TIAA (2020). *Financial Resiliency Survey*.

[www.tiaa.org/public/pdf/TIAA\\_Financial\\_Resiliency\\_Survey\\_Exec\\_Summary.pdf](http://www.tiaa.org/public/pdf/TIAA_Financial_Resiliency_Survey_Exec_Summary.pdf)

United States Census Bureau. (2020). *2018-2019, Population and Housing Unit Estimates*.

<https://www.census.gov/programs-surveys/popest.html>.

**Table 1: How COVID shapes Financial Advice Regarding Increasing Saving and Annuitization, and Survival Optimism**

	Sig+Savings: Logit marginal effects	SelectAnnuity: Logit marginal effects	Survival Optimism: OLS coeffs
%COVID_out_of_money	-0.108*** (0.039)	-0.097*** (0.035)	0.016 (0.018)
%Die_from_COVID	-0.076 (0.048)	-0.090** (0.043)	-0.038 (0.022)
%Get_COVID	0.051 (0.049)	0.035 (0.047)	-0.034 (0.023)
Age	0.001 (0.001)	0.003** (0.001)	-0.003*** (0.001)
Male	-0.055*** (0.021)	-0.050** (0.020)	-0.030*** (0.010)
Coll	0.067*** (0.022)	0.011 (0.021)	0.017 (0.010)
Good Health	-0.036 (0.031)	-0.054 (0.029)	0.171*** (0.014)
FinLit	0.147*** (0.015)	0.049*** (0.013)	-0.017** (0.007)
Numeracy	0.010 (0.011)	0.001 (0.011)	-0.028*** (0.005)
Present Prefs	-0.032*** (0.007)	-0.020*** (0.007)	-0.000 (0.004)
Income > median	0.083*** (0.023)	0.014 (0.021)	0.017 (0.011)
# in household	-0.027*** (0.009)	0.005 (0.007)	0.005 (0.004)
NonWhite	0.039 (0.029)	0.005 (0.027)	0.090*** (0.013)
N	2,081	2,019	3,849
Pseudo R-sq/R-sq	0.104	0.038	0.095
Dep. Var. Mean	0.547	0.746	0.167
Dep. Var. St. Dev.	0.498	0.435	0.303

*Note.* The dependent variables in the first two columns are indicator variables equal to 1 if the respondent recommended that the vignette individual significantly boost saving (1) or annuitize (2) (zero else). The dependent variable in Column 3 is the difference between a respondent's subjective versus objective survival probability. Explanatory variables include chances of running out of money due to COVID-19, getting the virus, and dying from it. Also included are controls for age, male, College +, self-reported health good/very good/excellent, financial literacy score, numeracy score, present preference score, income, the number of people living in household and race; we also control for marital status, attention to the survey, and the order of questions presented in the survey. For other variable definitions see Hurwitz et al. (2020). Standard errors in parentheses. ( $N_1 = 2,081$ ;  $N_2 = 2,019$ ,  $N_3 = 3,849$ ). \*\*\*  $p < 0.01$ . \*\*  $p < 0.05$

### Appendix: The Most Vulnerable Respondents Also Feel More Exposed to COVID-19

	%COVID_out_of_money	%Die_from_COVID	%Get_COVID
Age	-0.325*** (0.049)	0.349*** (0.041)	-0.214*** (0.039)
Male	1.067 (0.849)	0.073 (0.714)	-1.465** (0.687)
Coll	-3.155*** (0.900)	-0.078 (0.755)	1.751** (0.726)
Married	-7.114*** (1.213)	-2.320** (1.020)	-1.403 (0.979)
Good Health	-5.861*** (1.179)	-17.352*** (0.982)	-5.284*** (0.950)
FinLit	-3.862*** (0.583)	-2.235*** (0.486)	-1.079** (0.464)
Numeracy	-2.674*** (0.444)	-2.497*** (0.370)	-1.214*** (0.356)
Present Prefs	4.051*** (0.298)	0.343 (0.251)	0.129 (0.240)
Income > median	-6.285*** (0.915)	0.391 (0.766)	0.019 (0.734)
# in household	1.516*** (0.339)	0.573** (0.286)	0.312 (0.275)
NonWhite	1.219 (1.115)	0.349 (0.945)	-3.902*** (0.900)
Constant	56.217*** (3.520)	27.148*** (2.952)	49.791*** (2.834)
N	4,514	4,521	4,606
R-squared	0.161	0.128	0.041
Dep. Var. Mean	21.357	19.445	26.358
Dep. Var. St. Dev.	29.541	24.404	22.582

*Note.* The dependent variables are self-reported chances of running out of money due to Covid-19, getting the virus, and dying from it. Explanatory variables include age, male, College +, being married, self-reported health good/very good/excellent, financial literacy score, numeracy score, present preference score, income, the number of people living in household and race; we also control for other marital status categories, attention to the survey, and the order of questions presented in the survey. For other variable definitions see Hurwitz et al. (2020). Standard errors in parentheses. ( $N_1 = 4,514$ ;  $N_2 = 4,512$ ;  $N_3 = 4,606$ ). \*\*\*  $p < 0.01$ . \*\*  $p < 0.05$