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DISCUSSION PAPER SERIES

IZA DP No. 13250

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ABSTRACT

COVID-19 Crisis Fuels Hostility against Foreigners

Intergroup conflicts represent one of the most pressing problems facing human society. Sudden spikes in aggressive behavior, including pogroms, often take place during periods of economic hardship or health pandemics, but little is known about the underlying mechanism behind such change in behavior. Many scholars attribute it to scapegoating, a psychological need to redirect anger and to blame an out-group for hardship and problems beyond one's own control. However, causal evidence of whether hardship triggers out-group hostility has been lacking. Here we test this idea in the context of the Covid-19 pandemic, focusing on the common concern that it may foster nationalistic sentiments and racism. Using a controlled money-burning task, we elicited hostile behavior among a nationally representative sample (n = 2,186) in a Central European country, at a time when the entire population was under lockdown and border closure. We find that exogenously elevating salience of thoughts related to Covid-19 pandemic magnifies hostility and discrimination against foreigners, especially from Asia. This behavioral response is large in magnitude and holds across various demographic sub-groups. For policy, the results underscore the importance of not inflaming racist sentiments and suggest that efforts to recover international trade and cooperation will need to address both social and economic damage.

JEL Classification: C90, D01, D63, D91, J15

Keywords: COVID-19, pandemic, scapegoating, hostility, inter-group conflict, discrimination, experiment

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Intergroup conflicts represent one of the most pressing problems facing human society (Bowles 2009; Fiske 2002). Sudden spikes in aggressive behavior, including pogroms, often take place during periods of economic hardship (Miguel, Shanker, and Sergenti 2004; Anderson, Johnson, and Koyama 2017) or health pandemics (Voigtlander and Voth 2012), but little is known about the underlying mechanism behind such change in behavior. Many scholars attribute it to scapegoating, a psychological need to redirect anger and to blame an out-group for hardship and problems beyond one's own control (Doob et al. 1939; Allport 1954; Girard 1979; Staub 1992; Glick 2005). However, causal evidence of whether hardship triggers out-group hostility has been lacking. Here we test this idea in the context of the Covid-19 pandemic, focusing on the common concern that it may foster nationalistic sentiments and racism (CNN 2020). Using a controlled money-burning task, we elicited hostile behavior among a nationally representative sample (n = 2,186) in a Central European country, at a time when the entire population was under lockdown and border closure. We find that exogenously elevating salience of thoughts related to Covid-19 pandemic magnifies hostility and discrimination against foreigners, especially from Asia. This behavioral response is large in magnitude and holds across various demographic sub-groups. For policy, the results underscore the importance of not inflaming racist sentiments and suggest that efforts to recover international trade and cooperation will need to address both social and economic damage.

Social scientists have long speculated that aggression against innocent targets often stems from frustration (Doob et al. 1939; Allport 1954). Difficult life conditions imposed on individuals by external forces that threaten physical wellbeing and safety (e.g., economic or political upheavals, widespread disease) may create a fertile environment for out-group blaming and hostility, with genocides and mass killings being the most extreme manifestations (Staub 1992). Further, such aggressive response, often labeled "scapegoating", has been suggested to arise especially when frustrations are widely shared at a group level (Tajfel 1981). In light of this reasoning, the Covid-19 crisis has created an unfortunate but suitable testing ground for studying the scapegoating hypothesis. It is arguably the most severe health and economic shock since WWII (Baldwin and Weder di Mauro 2020; *New York Times, 2020*). The crisis is characterized by fear and uncertainty, coupled with unexpected and severe constraints on the economic and social lives of virtually whole populations. Since Covid-19 originally surfaced in China and spreads across borders via interactions with people from other countries, contemporary commentators have suggested that it may foster nationalistic and racist sentiments, particularly against people from Asia. For example, Fernand de Varennes, the UN

Special Rapporteur, warns that "COVID-19 is not just a health issue; it can also be a virus that exacerbates xenophobia..."(*United Nations News* 2020).

Despite the importance of this issue, causal evidence on how fears associated with major health and economic shocks shape hostility against particular groups is lacking. This is not surprising because of several empirical challenges. First, using naturally occurring data as measures of hostility, such as the prevalence of robbery or violence, is problematic because hardship often goes hand in hand with greater financial needs, making it difficult to separate selfish motivations from pure hate. Second, a clean measurement requires an exogenous variation in the identity of the victim of the hostile behavior, in order to distinguish whether hardship fuels hostility towards particular groups, rather than towards people in general. The third challenge is identification of causal impacts. For understanding impacts of a shock that hits the whole population at a similar point in time, a key issue is finding a ceteris paribus variation in fears that is not correlated with time trends or unobserved confounders between individuals.

Here we address this gap in empirical knowledge and provide the first causal evidence documenting that a health pandemic, accompanied by a severe economic shock, fuels aggressive discriminatory behavior. Our evidence is based on a large-scale experiment implemented in midst of the Covid-19 crisis. We elicited hostile behavior among a nationally representative sample (n = 2,186) in the Czech Republic, a medium-sized country in Central Europe, while the pandemic was on the rise, and the entire population lived under lockdown and border closure; see Supplementary Information (SI) for more details about the background.

Several features of our experimental design help us to overcome the empirical challenges described above. First, we directly elicit willingness to cause financial harm, with no benefit to self, in a controlled money-allocation task. Subjects make anonymous decisions whether they want to increase or decrease money given to a different person. Second, we exogenously manipulate information about identity of this person, in order to identify discrimination against foreigners. Third, we randomly assign the participants either to a treatment condition that increased the salience of Covid-related problems and fears, or to the control condition in which Covid-related challenges were not made salient. Random allocation ensures that participants in the treatment and control conditions are comparable in terms of observable and unobservable characteristics, helping to overcome selection issues and concerns about spurious correlation. Finally, an attractive feature of our empirical approach is that it can

be easily employed on large representative samples in virtually any country with well-developed data collection infrastructure.

Investigation of the environmental factors and policies that may influence prevalence of prejudice and discrimination has a rich tradition in psychology, political science and more recently economics (Paluck and Green 2009). The focus has been mostly on the effects of inter-group contact (Alexander and Christia 2011; Rao 2019), perspective-taking (Broockman and Kalla 2016), training (Hu et al. 2015) or social environment (Bauer et al. 2020). Given that theories of scapegoating (Allport 1954; Glick 2005) suggest that personal fears and frustrations may have important, immediate influence on behavior towards out-group members, there is a surprising lack of empirical studies that would estimate the impacts of real-life economic or health problems on out-group hostility and discrimination. Such study is reported here. In terms of measuring out-group hostility, our work builds on earlier economic experiments designed to uncover discrimination against people with specific group attributes (Bernhard, Fischbacher, and Fehr 2006; Kranton and Sanders 2017; Angerer et al. 2016; Fehr and Fischbacher 2003).

Experimental design

Our study uses a novel empirical approach for collecting experimental data on large, nationally-representative samples, inspired by (Almas, Cappelen, and Tungodden 2019; Falk and Hermle 2018), by taking advantage of the online infrastructure of a leading data-collection agency in the Czech Republic. The data were collected via the agency from a sample of 2,186 adults from March 30 to April 1, 2020. The sample is nationally representative in terms of age, sex, education, employment status before the Covid-19 pandemic, municipality size, and regional distribution, with a higher share of people living in large cities (Supplementary Table 1).

We developed a detailed experimental module, designed to uncover the shape of hostile preferences towards people with different group attributes. We administered a series of decisions in an allocation task that we label a Help-or-Harm task (HHT), which combines features of the well-established Dictator game and the Joy of Destruction game (Abbink and Sadrieh 2009). The participants were asked to increase or decrease rewards to a set of people with different characteristics, at no monetary costs to themselves. The default allocation was CZK 100 (USD 4). Participants could allocate any amount between CZK 0 and CZK 200 (USD 0-8), using a slider located in the middle of the 0-200 scale (see Supplementary Fig. 1). The participants had to make an active choice - even if they decided to keep the reward at the default

allocation, they had to click on the slider. The advantage of implementing a salient reference point is that we can identify changes in the prevalence of behavior that is unambiguously hostile – when subjects actively engage in reducing the other person's rewards below CZK 100– and changes in basic pro-social behavior – when subjects choose to increase rewards above CZK 100.

In order to measure nation-based divisions and hostile behavior towards foreigners, the participants made decisions whether to increase or decrease money to a person living in the Czech Republic, in the EU, in the USA, in Asia, and in Africa. In the analysis, we focus on average behavior towards a foreigner, and compare it to behavior towards a person from the Czech Republic. Further, in order to measure domestic divisions and hostility to out-group members from one's own country, in the second set of decisions participants allocated money to people who all live in the Czech Republic but who either share a group attribute with them (in-group) or not (out-group). We focused on the following dimensions: region of residence, political orientation, ethnicity, and religion. In the analysis, we study average behavior towards domestic in-group members and towards domestic out-group members. In total, each participant made seventeen choices. The choices were incentivized -- the subjects knew that thirty participants would be randomly selected and one of their choices would be implemented.

In order to exogenously manipulate the intensity of Covid-19- related concerns when subjects made decisions, we used a priming technique. Each participant was randomly allocated either to the COVID (n = 1,142) or to the CONTROL condition (n = 1,044). In the COVID condition, before making decisions in the Help-or-Harm tasks, the subjects answered a series of survey questions focusing on the coronavirus crisis, specifically on their preventive health behavior, social distancing, economic situation, and psychological wellbeing. The prime is designed to activate or intensify a complex set of thoughts and concerns that characterize people's lives during the coronavirus crisis. The median time the respondents spent answering this set of questions was 13 minutes. In the CONTROL condition, the participants made the decisions in the Help-or-Harm tasks at the beginning of the survey, and answered the coronavirus-related questions only later. Supplementary Table 1 shows that randomization was successful, since participants do not exhibit systematic differences across conditions in terms of observable characteristics. See the Methods section and SI for more details about the sample, experimental design, and definition of variables.

The priming technique allows us to measure purely psychological impacts of a greater intensity of Covid-related concerns on hostility. Priming is a well-established technique in

social science (Bargh and Chartrand 2000; Cohn and Maréchal 2016) and has been successfully used to shed light on a range of other important issues (Cohn, Fehr, and Maréchal 2014; Mani et al. 2013; Cohn et al. 2015). Also note that this technique identifies impacts of greater *intensity* of Covid-related thoughts, rather than the overall effects of Covid-19. Thus, to the extent that people in the CONTROL condition also have Covid-19 concerns very much at top of mind, this technique may underestimate the actual effects of the pandemic.

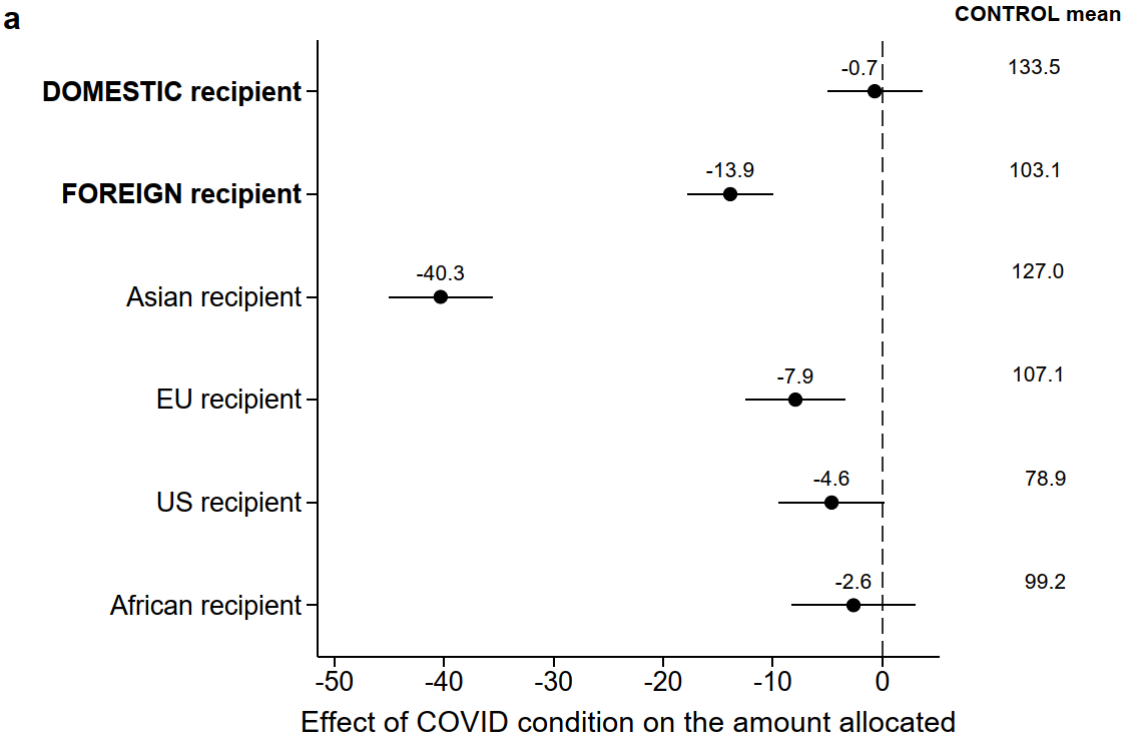
Results

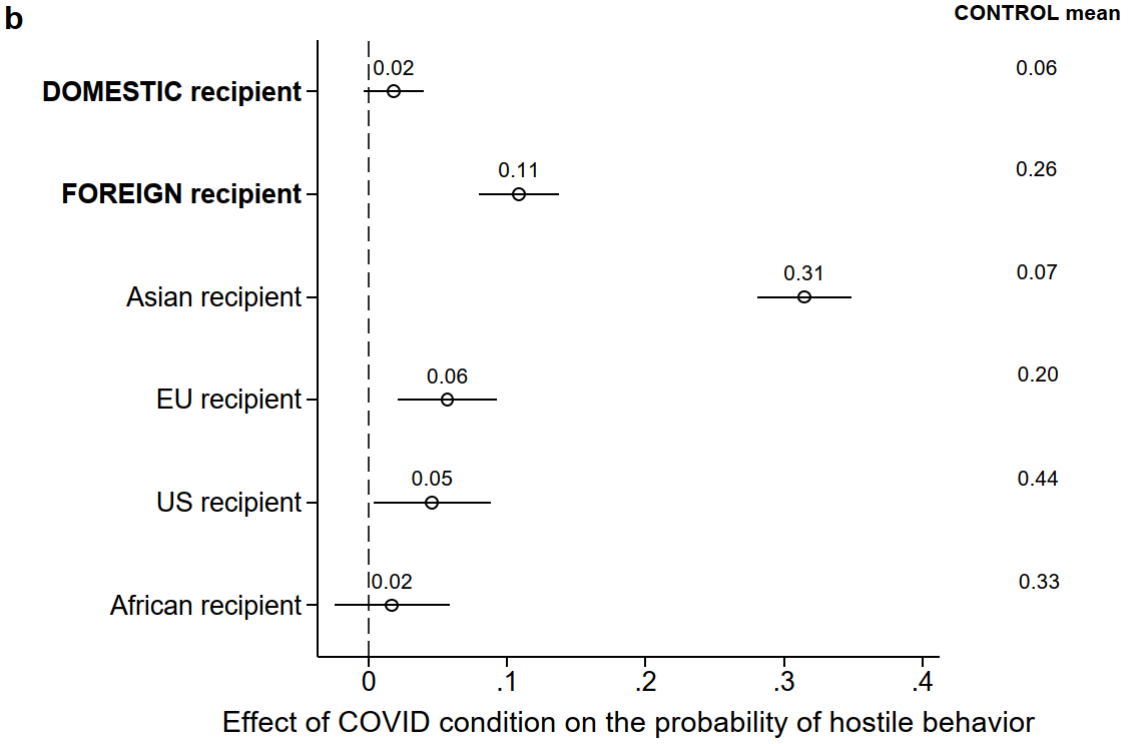
We find that, on average, participants are more hostile towards foreigners than towards a person from their own country (Supplementary Table 2). They reduced the reward to foreigners (from the EU, USA, Asia or Africa) from CZK 100 to CZK 96, while they increased the reward to a domestic person to CZK 133 ($P < 0.001$, two-sided Wilcoxon rank-sum test). The main question of interest is whether thinking about Covid-19 magnifies such nation-based discrimination by increasing hostility towards foreigners. In order to answer this question, we compare choices in the COVID condition with choices in the CONTROL condition.

Thinking about Covid-19 has large, negative impacts on behavior towards foreigners (Fig. 1a and Supplementary Table 3; OLS). While in the CONTROL condition, participants on average allocated CZK 103 to foreigners, in the COVID condition they reduced the reward to CZK 89 ($P < 0.001$). In contrast, the effect on behavior towards a domestic recipient is small in magnitude and not statistically significant ($P = 0.753$). Thus, the increased hostility towards foreigners cannot be attributed to a general inclination to behave in a more hostile way in the COVID condition. This conclusion is supported by a regression analysis, in which we find a strong negative interaction effect between COVID and an indicator variable for 'foreigner' (as compared to a domestic person) on the amount allocated to the other person (foreign*COVID, $P < 0.001$, Supplementary Table 4). Due to such differential effects on behavior towards foreign and domestic recipients, the size of discrimination against foreigners increases by 41% in COVID as compared to CONTROL.

Fig. 1. Effect of the COVID condition on allocations in the Help-or-Harm task, by the identity of the recipients. Coefficient plots. Bars represent 95 percent confidence intervals. In **a**, the dependent variable is the amount allocated. In **b**, the dependent variable is a binary variable indicating hostile behavior, equal to 1 if allocation is strictly lower than the default allocation (100 CZK). Both panels present estimated coefficients of the COVID condition relative to the CONTROL condition

(corresponding regression models appear in Panel A of Supplementary Table 3 and Panel A of Supplementary Table 5).



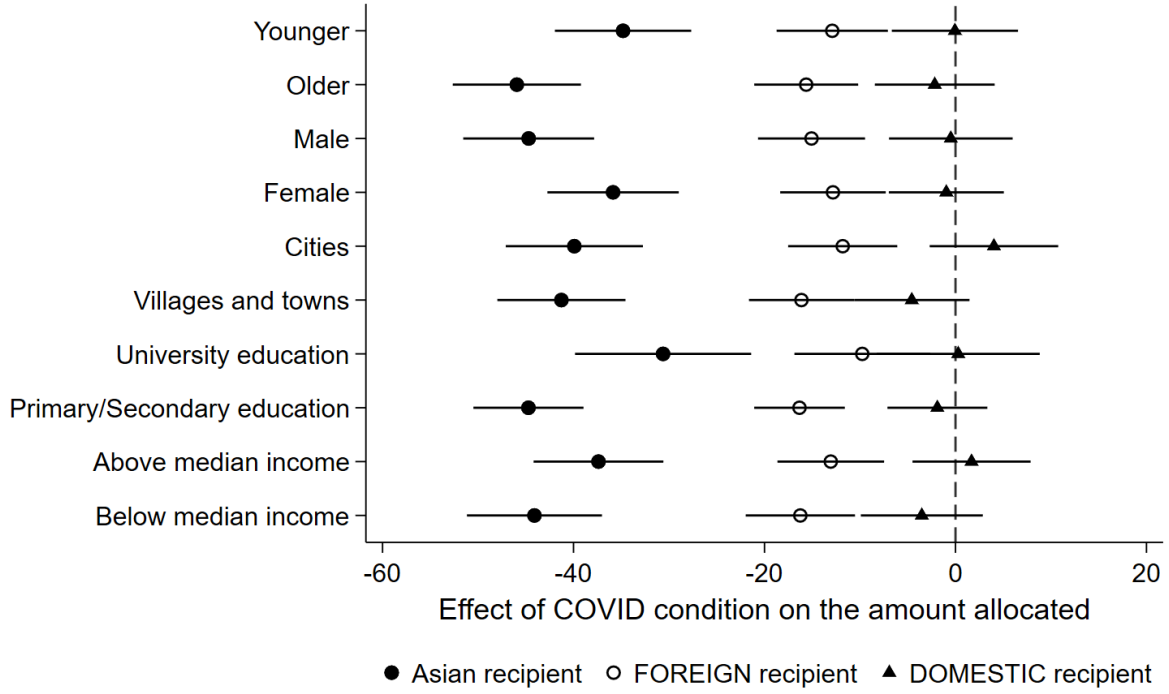


Next, we take a more granular approach and explore the effects on behavior towards individuals from different parts of the world. We find a negative impact of COVID on behavior towards people from the EU, the USA and Asia, but not from Africa (Fig. 1 and Supplementary Table 3; OLS). As compared to CONTROL, in COVID, participants allocated on average CZK 8 less to a person from the EU ($P = 0.001$) and CZK 5 less to a person from the USA ($P = 0.063$). Strikingly, the effects on behavior are very large when choices impact a person from Asia, in line with the scapegoating hypothesis. In CONTROL, on average participants increased their reward to CZK 127, whereas in COVID, they reduced the reward for a person from Asia by CZK 40, to CZK 87 ($P < 0.001$).

Further, we show that the COVID condition reduces money allocations to foreigners not only due to reduced pro-social behavior, but primarily due to increased prevalence of unambiguously hostile behavior (Fig. 1 b and Supplementary Table 5; linear probability model). We define an indicator variable equal to one if the participant actively destroyed the money allocated to the other person, i.e. reduced the reward to an amount below 100. The prevalence of hostile behavior is higher in COVID than in CONTROL when such behavior impacts foreigners living in the EU (by 6 p.p., $P = 0.002$), and in the USA (by 5 p.p., $P = 0.035$). Again, the effect on prevalence of hostility is largest for behavior towards a person living in Asia. In CONTROL, only 7% decided to act in a hostile way towards an Asian person, while in COVID the prevalence of this behavior increased more than five times, to 39% ($P < 0.001$). We observe the same pattern when we consider the most extreme manifestation of hostility, the likelihood of reducing the rewards to 0 CZK (3% in CONTROL; 16% in COVID, $P < 0.001$). As expected, we also observe that COVID reduces the prevalence of basic pro-sociality, defined as a willingness to increase rewards above the default allocation (Supplementary Table 5). We provide further support for these conclusions in Supplementary Fig. 2, which shows full distributions of choices across both COVID and CONTROL conditions.

The size and diversity of our sample allows us to explore whether the observed effects of COVID on hostility against foreigners is a broad response spanning across demographics, or behavior that characterizes certain demographic sub-groups of the population. Fig. 2 and Supplementary Table 6 display the effect of the COVID condition on the mean amount of money allocated to (i) a person from the subject's own country, (ii) to all foreigners on average, and (iii) to Asians, for whom we observe the largest effects, across age groups, gender, education level, income level, and size of municipality. Overall, the results are similar across demographics.

Fig. 2. Sub-group analysis of the effect of the COVID condition on the amount allocated in the Help-or-Harm task, by the identity of the recipients. Coefficient plots. Bars represent 95 percent confidence intervals. The dependent variable is the amount allocated. The figure presents estimated coefficients of the COVID condition relative to the CONTROL condition (corresponding regression models are in Supplementary Table 6). Age and net monthly household income are divided by the median (50 years and CZK 35,000). Municipalities are divided into cities with more than 100,000 inhabitants, and smaller villages and towns.



Does thinking about Covid-19 fuel hostility against any type of out-group members, including domestic ones, or is it a response specific to foreigners? To study this, we distinguish two groups of recipients living in the Czech Republic whose reward is subject to a participants' decision. We measure behavior towards domestic in-group members based on the average amount allocated to individuals who share a group attribute with the decision-maker (region of residence, ethnicity, political opinions, and religious beliefs). Behavior towards domestic out-group members refers to an average allocation to individuals who do not share a given group attribute.

We find evidence of domestic divisions in the Czech society, which are comparable in magnitude to nation-based divisions. On average, the participants increased the reward of people who share a group attribute with them to CZK 123, but reduced the reward to people who do not share a group attribute to CZK 94 ($P < 0.001$, two-sided Wilcoxon rank-sum test).

Unlike for nation-based divisions, however, thinking about Covid-19 does not magnify domestic out-group hostility (Supplementary Fig. 3 and Supplementary Tables 7-8; OLS). For measures of average behavior towards in-group and out-group members, the observed effects of COVID are negative, but relatively small in magnitude: reduction by CZK 0.1 for in-group (P = 0.977) and CZK 0.3 for out-group (P = 0.885). This pattern is similar across different types of group identities. An exception is that the COVID condition increases discrimination based on religious belief, but this is due to positive effects of thinking about COVID on pro-social behavior towards people with similar religious beliefs, rather than due to negative impacts on behavior towards religious out-groups.

A potential concern is that thinking and answering questions in the COVID condition may have caused fatigue and led to less attention to allocation decisions, and thus may have affected choices without activating Covid-related concerns and fears. This explanation is, however, not supported by our data. Subjects in COVID are neither more prone to stick to the default allocation, nor less likely to correctly answer attention check questions (Supplementary Table 9). Both of these patterns would be expected if subjects were less attentive. In fact, the effects of COVID on behavior towards foreigners is caused by reduced likelihood of sticking to the default allocation, and an increased tendency to actively reduce recipients' income (Supplementary Fig. 2). Subjects' response time is somewhat lower in COVID, but all results are robust to controlling for response time (Supplementary Table 10). Also, this explanation struggles to explain why foreigners and Asians in particular, and not all types of recipients, face more hostility in COVID. These and other robustness tests are reported in the Supplementary Materials (Supplementary Tables 3-10). The effects on behavior towards foreigners, individuals living in Asia or the EU remain statistically significant at 1% level when we adjust p-values for multiple hypotheses testing, even under conservative assumptions. We also show that the main patterns are robust to including various control variables.

Concluding remarks

This paper provides the first causal evidence documenting how concerns triggered by a global health pandemic, Covid-19, fuel racist preferences against people from other countries, in particular from Asia. It demonstrates that scapegoating behavior is a relatively general response, present across various demographic groups. The evidence illuminates how health and economic crises can cause damage in the social domain, and points to an important research agenda for social scientists interested in the immediate impacts and long-term legacies of Covid-19. By

integrating experimental measures of preferences and priming techniques into an online survey, this study provides a portable toolkit to study this issue in different countries across the globe, at various stages of the pandemic. In terms of policy, the results underscore the importance of making sure political and other opinion-leaders resist temptations to tap into nationalistic sentiments, such as associating the name of the virus with the location in which it started, so that the health and economic crises do not become compounded by a new form of crisis – unravelling of international collaborations and increased risk of violent group conflicts. Further, after the worst of the pandemic is over, rebuilding initiatives may need to go beyond purely economic reconstruction. Our results suggest policy-makers will need to think about ways how to rebuild social ties across national borders, as a pre-condition to re-establishing international trade and cooperation at a global level.

References

Abbink, Klaus, and Abdolkarim Sadrieh. 2009. "The Pleasure of Being Nasty." *Economics Letters* 105 (3): 306–8.

Alexander, Marcus, and Fotini Christia. 2011. "Context Modularity of Human Altruism." *Science* 1392 (334): 1392–94.

Allport, Gordon W. 1954. *The Nature of Prejudice*. New York: Addison-Wesley.

Almas, Ingvild, Alexander Cappelen, and Bertil Tungodden. 2019. "Cutthroat Capitalism versus Cuddly Socialism: Are Americans More Meritocratic and Efficiency-Seeking than Scandinavians?" *Journal of Political Economy* forth.

Anderson, Robert Warren, Noel D. Johnson, and Mark Koyama. 2017. "Jewish Persecutions and Weather Shocks: 1100–1800." *Economic Journal* 127 (602): 924–58.

Angerer, Silvia, Daniela Glätzle-Rützler, Philipp Lergetporer, and Matthias Sutter. 2016. "Cooperation and Discrimination within and across Language Borders: Evidence from Children in a Bilingual City." *European Economic Review* 90: 254–64.

Baldwin, Robert, and Beatrice Weder di Mauro. 2020. *Mitigating the COVID Economic Crisis: Act Fast and Do Whatever It Takes*. a VoxEU.org eBook, CEPR Press.

Bargh, John A, and Tanya L. Chartrand. 2000. "The Mind in the Middle: A Practical Guide to Priming and Automaticity Research." In *Handbook of Research Methods in Social and Personality Psychology*, edited by Harry T. Reis and Charles M. Judd, 253–85. New

York: Cambridge University Press.

Barsbai, Toman, Victoria Licuanan, Andreas Steinmayr, Erwin Tiongson, and Dean Yang. 2020. “Information and the Acquisition of Social Network Connections.” Mimeo.

Bauer, Michal, Jana Cahlikova, Julie Chytilová, Gerard Roland, and Tomáš Želinský. 2020. “Scapegoating: Experimental Evidence.” *Unpublished Manuscript*.

Bernhard, Helen, Urs Fischbacher, and Ernst Fehr. 2006. “Parochial Altruism in Humans.” *Nature* 442 (7105): 912–915.

Bowles, Samuel. 2009. “Did Warfare Among Ancestral Hunter-Gatherers Affect the Evolution of Human Social Behaviors?” *Science* 324 (5932): 1293–98.

Broockman, David, and Joshua Kalla. 2016. “Durably Reducing Transphobia: A Field Experiment on Door-to-Door Canvassing.” *Science* 352 (6282): 220–25.

CNN. 2020. “A New Virus Stirs up Ancient Hatred,” 2020.

Cohn, Alain, Jan Engelmann, Ernst Fehr, and Michel André Maréchal. 2015. “Evidence for Countercyclical Risk Aversion: An Experiment with Financial Professionals.” *American Economic Review* 105 (2): 860–85.

Cohn, Alain, Ernst Fehr, and Michel André Maréchal. 2014. “Business Culture and Dishonesty in the Banking Industry.” *Nature*, 516: 86–89.

Cohn, Alain, and Michel André Maréchal. 2016. “Priming in Economics.” *Current Opinion in Psychology* 12: 17–21.

Doob, Leonard W, Neal E Miller, Orval Hobart Mowrer, Robert Sears, and John Dollard. 1939. *Frustration and Aggression*. New Haven, CT: Yale University Press.

Falk, Armin, and Johannes Hermle. 2018. “Relationship of Gender Differences in Preferences to Economic Development and Gender Equality.” *Science* 307 (October): 1–6.

Fehr, E., and U. Fischbacher. 2003. “The Nature of Human Altruism: Proximate Patterns and Evolutionary Origins.” *Nature* 425: 785–91.

Fiske, Susan T. 2002. “What We Know Now about Bias and Inter-Group Conflict, the Problem of the Century.” *Current Directions in Psychological Science* 11 (4): 123–28.

Girard, Rene. 1979. *Things Hidden Since the Foundation of the World*. Stanford, CA: Stanford University Press.

Glick, Peter. 2005. “Choice of Scapegoats.” In *On the Nature of Prejudice,* edited by John F Dovidio, Peter Glick, and Laurie Budman, 244–61. Blackwell Publishing.

Hu, Xiaoqing, James W. Antony, Jessica D. Creery, Iliana M. Vargas, Galen V. Bodenhausen, and Ken A. Paller. 2015. “Unlearning Implicit Social Biases during Sleep.” *Science* 348 (6238): 1013–16.

Kranton, Rachel, and Seth Sanders. 2017. “Groupy versus Non-Groupy Social Preferences: Personality, Region, and Political Party.” *American Economic Review (Papers & Proceedings)* 107 (5): 65–69.

Mani, Anandi, Sendhil Mullainathan, Eldar Shafir, and Jiaying Zhao. 2013. “Poverty Impedes Cognitive Function.” *Science (New York, N.Y.)* 341 (6149): 976–80.

Miguel, Edward, Satyanath Shanker, and Ernest Sergenti. 2004. “Economic Shocks and Civil Conflict : An Instrumental Variables Approach.” *Journal of Political Economy* 112 (4): 725–55.

New York Times, 2020. n.d. “Why the Global Recession Could Last a Long Time.”

Paluck, Elizabeth Levy, and Donald P Green. 2009. “Prejudice Reduction : What Works ? A Review and Assessment of Research and Practice.” *Annual Review of Psychology* 60: 339–67.

Rao, Gautam. 2019. “Familiarity Does Not Breed Contempt : Generosity , Discrimination , and Diversity in Delhi Schools.” *American Economic Review* 109 (3): 774–809.

Staub, Ervin. 1992. *The Roots of Evil: The Origins of Genocide and Other Group Violence*. Cambridge, MA: Cambridge University Press.

Tajfel, Henry. 1981. *Human Groups and Social Categories: Studies in Social Psychology*. Cambridge: Cambridge University Press.

United Nations News. 2020. “COVID-19 Stoking Xenophobia, Hate and Exclusion, Minority Rights Expert Warns,” 2020.

Voigtlander, Nico, and Hans-Joachim Voth. 2012. “Persecution Perpetuated: The Medieval Origins of Anti-Semitic Violence in Nazi Germany.” *Quarterly Journal of Economics* 127 (3): 1339–92.

Methods

Sample. The sample (n = 2,186) is representative of the Czech population 18+ in terms of sex, age, education, region, municipality size, employment status before the Covid-19 pandemic, age x sex, and age x education. Prague and municipalities above 50,000 are oversampled (boost 200%). Sample statistics are presented in Supplementary Table 1. Participants were randomized into the COVID (n = 1,142) and CONTROL (n = 1,044) conditions, as described in the main text. We sampled from the largest online panel in the Czech Republic and cooperated with the major survey agency (NMS and PAQ Research).

Experimental design. Details about the Help-or-Harm task, manipulation of the identity of the recipient and manipulation of the intensity of thinking about Covid-19 (the COVID condition) are provided in the Supplementary information.

Statistical analysis. We report results from OLS regressions with the Help-or-Harm task allocation as the dependent variable and the COVID condition indicator as the main explanatory variable. Each respondent allocated rewards to 17 different recipients (Supplementary Methods 1.2). In each regression model, we focus on allocations to a particular type of recipients (e.g. foreign recipients, domestic recipient). Full regression specification is described in Supplementary Methods 1.3. Whenever multiple observations per individual are used, standard errors are clustered at individual level. We report p-values and the number of observations in all tables. Wherever appropriate, we also report number of clusters. In main specifications, we further report p-values corrected for multiple hypothesis testing using the method developed by Barsbai et al. (2020); see Supplementary Methods 1.6.

As a baseline specification, we report unweighted results for all 2,186 participants (Fig. 1, Supplementary Fig. 3 and Panel A of Supplementary Tables 3 and 7). Baseline models control for gender, age category (6 categories), household size, number of children, region (14 regions), town size (7 categories), education (4 categories), economic status (7 categories), household income (11 categories) and task order. Precise definitions of all variables are provided in Supplementary Methods 1.4. As a robustness check, we report results of 1) OLS models with no controls, 2) OLS models with additional controls for the variables approximating current economic situation and stress, and 3) weighted OLS regressions, using probability weights to correct for the oversampling of respondents from large municipalities (Supplementary Tables 3 and 7). We present a formal test of whether the COVID condition has a differential impact on behavior towards out-group recipients relative to in-group members (e.g., foreign and domestic recipients) using a difference-in-differences model, in which we add

an indicator for out-group recipient and an interaction of the COVID condition indicator with the out-group indicator (Supplementary Tables 4 and 8).

We additionally use binary dependent variables indicating 1) basic pro-social behavior in the Help-or-Harm task (i.e., increasing the reward above the default allocation of CZK 100), 2) hostile behavior (i.e., reducing the reward below the default allocation), or 3) sticking with the default allocation (i.e., allocating CZK 100) (Panel B of Fig. 1 and Supplementary Table 5). We estimate these models using the same specification as for the continuous allocations in the task, using linear probability models with baseline controls.

In Fig. 2 and Supplementary Table 6, we report results from a sub-group analysis. We always report data for both mutually exclusive sub-groups (e.g. younger participants and older participants). Number of observations in each sub-group is specified in the regression table.

When testing for differences between two groups in Supplementary Table 1 (randomization check) and Supplementary Table 2 (mean allocations in the Help-or-Harm task), we use two-sided Wilcoxon rank-sum test for ordinal variables and Pearson's chi-squared test for categorical variables. P-values are reported.

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Supplementary Information

Covid-19 Crisis Fuels Hostility against Foreigners

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1 Supplementary Methods

1.1 Background of the Covid-19 pandemic in the Czech Republic

The Czech Republic is a landlocked country in Central Europe, bordering Germany, Austria, Slovakia, and Poland. The population is around 10.7 million. The Czech Republic is a parliamentary democracy and it joined the EU in 2004. The 2018 GDP per capita (PPP) was around USD 40,000 (or 90.6% of the EU average). Before the beginning of the Covid-19 pandemic, the country had the lowest unemployment rate in the EU (2% in February 2020).

The data collection took place on March 30-April 1, 2020. At the beginning of the data collection (March 30), there were 3,001 confirmed cases of Covid-19 in the country, with 23 confirmed deaths. The evolution of confirmed Covid-19 cases is depicted in Supplementary Fig. 4.

The data were collected about one month after the first three cases of Covid-19 were confirmed in the country (March 1) and about two and a half weeks after the government declared a state of emergency (March 12, originally valid for 30 days). Schools had been closed since March 13, non-essential shops and restaurants since March 14. Since March 16, free movement of people had been restricted, allowing only essential travel (to work, to medical facilities, to see family, etc.). Furthermore, citizens were forbidden from traveling abroad, and foreigners were forbidden to enter the country. Starting on March 19, everyone was required to wear face masks while in public. Additional measures were implemented on March 24, banning the assembly of more than two people in public spaces (apart from household members) and introducing obligatory distance of two meters between people. The timeline and a full descriptions of the measures is available on the website of the Czech Ministry of Health (https://koronavirus.mzcr.cz/en/development-of-events-over-time/; accessed on April 23, 2020) and on the website of the Czech government (https://www.vlada.cz/en/media-centrum/aktualne/measures-adopted-by-the-czech-government-against-coronavirus-180545/; accessed on April 23, 2020).

Similar measures (canceling public events, closing schools, closing non-essential shops and restaurants, restricting free movement of people) were implemented by most European governments and many other countries in March 2020. The OECD provides an overview of measures adopted by specific countries at https://oecd.github.io/OECD-covid-action-map/ (Accessed on April 23, 2020).

The data from our survey document that the Covid-19 crisis was accompanied by increased economic hardship. The average household income dropped to 83% of the pre-crisis level, and hours worked dropped by a similar magnitude. About 7% of respondents report someone from their household had lost a job in the past two weeks. 35% of households reported having savings of less than one month of their monthly expenditures. Supplementary Table 11 provides further details.

1.2 Experimental design

Help-or-Harm Task

To measure pro-social and hostile behavior towards others, we implemented an incentivized allocation task, labeled the Help-or-Harm task. The participants were asked to increase or decrease rewards to a set of people with different characteristics, at no monetary costs to themselves. The default allocation was CZK 100 (USD 4). Participants could allocate any amount between CZK 0 and CZK 200 (USD 0-8), using a slider located in the middle of the 0-200 scale (see Supplementary Fig. 1). Before making their decisions, respondents were given the following instructions:

"Now there will be a different activity. In contrast to traditional survey questions, you are to make several decisions that may have real consequences on the financial reward received by someone else. We will ask you whether you want to increase or decrease the reward of several people. Each of them is a different person, and none of them participated in this survey. After this survey, we will randomly select thirty participants and select one of their decisions that will determine the reward for someone else. Please make your decisions carefully, because each of your decisions may play a role.

Now please make a decision for each of the persons listed below. If you decide not to change their reward, they will receive CZK 100. But you can decide to increase or decrease their reward to any amount between CZK 0 and CZK 200. Please use the slider to determine the reward for each of these individuals."

A screenshot with an example of the decision-making environment is presented in Supplementary Fig. 1. Each decision starts with brief instructions: *"Using the slider, please select the reward between CZK 0-200."* The slider is set by default at CZK 100 and the amount selected at each particular moment is presented above the slider, dynamically responding to moves of the sliders. Respondents could set fine-grained allocations, using the entire range of the decision space between CZK 0 and CZK 200 in increments of CZK 1. The participants had to make active choices - even if they decided to keep the reward at the default allocation, they had to click on the slider.

Manipulating the identity of the recipient

Each respondent allocated rewards to 17 different recipients. For each allocation decision, the identity of the recipient was displayed on the screen: e.g. *"A person living in Asia"* or *"A person whose political opinions are close to yours (i.e., votes for the same political party)"* Five choices are designed to uncover nation-based divisions and hostile behavior towards foreigners. Specifically, the participants made decisions whether to increase or decrease money to a person living in the Czech Republic, in the EU, in the USA, in Asia, and in Africa.

Twelve choices are designed to measure domestic divisions and hostility towards domestic out-group members. Specifically, respondents allocated rewards to: a person living in the same region, a person living in a different region, a person living in Prague, a person with similar political views (i.e., voting for the same political party as you), a person with different political views (i.e., voting for the party from the other side of a political spectrum), a person from the Czech majority group, a person from the Roma ethnic minority group, a person that

immigrated to the Czech Republic in the past five years, a person with no religious affiliation living in the Czech Republic, a person with Christian affiliation living in the Czech Republic, a person with Muslim affiliation living in the Czech Republic, and a person with Jewish affiliation living in the Czech Republic.

Each of the 17 decisions was displayed on a separate screen. The order of decisions was randomized across blocks. The blocks were based on different dimensions of the identity of the recipient (nationality, region, political views, ethnicity, and religion). In total, there were 96 different types of block orderings. In the regression analysis we control for the order of the blocks.

In the main analysis, we distinguish four main groups of recipients. The first two groups capture divisions based on nationality:

- DOMESTIC recipient: a person living in the Czech Republic.
- FOREIGN recipient: a person living in Asia OR the EU OR the USA OR Africa

The following two groups focus on divisions within the Czech Republic:

- DOMESTIC in-group: a person living in the same region OR a person living in Prague (for participants living in Prague) OR a person with similar political views to those of the participant OR a person from the majority Czech population OR a person who shares a religious affiliation with the participant.
- DOMESTIC out-group: a person living in a different region OR a person living in Prague (for participants living outside of Prague) OR a person with different political views to those of the participant OR a person from the Roma ethnic minority OR a person who immigrated to the Czech Republic in the past five years OR a person who does not share a religious affiliation with the participant.

In the supporting analysis, we distinguish the groups of recipients in greater detail as follows: Asian recipient: a person living in Asia; EU recipient: a person living in the European Union; US recipient: a person living in the USA; African recipient: a person living in Africa; Region (in-group): a person living in the same region OR a person living in Prague (for participants living in Prague); Region (out-group): a person living in a different region OR a person living in Prague (for participants living outside of Prague); Political (in-group): a person with similar political views to those of the participant; Political (out-group): a person with different political views to those of the participant; Majority (in-group): a person from the majority Czech population; Roma ethnicity (out-group): a person from the Roma ethnic minority; Migrant (out-group): a person who immigrated to the Czech Republic in the past 5 years; Religion (in-group): a person with the same religious affiliation as the respondent (no affiliation, Christian, Muslim, or Jewish); Religion (out-group): a person who does not share a religious affiliation with the respondent.

Since we did not ask a question about ethnicity and immigration status when making the in-group and out-group classification, we implicitly assume that the sample is composed of ethnic Czech majority respondents only, given the homogenous nature of the Czech population.[1] Also, we have data about religious affiliation for 1,667 respondents (out of 2,168). For the remaining respondents we assume they belong to the dominant category,

[1] In a population of over 10 million, in 2018 the Czech Statistical Office listed 274,886 foreign born residents. Ukrainians are the largest group with 131,302 individuals, followed by 116,817 Slovaks, and 61,097 Vietnamese. Most have lived in the Czech Republic for extended periods of time beyond our 5 year threshold. While official data are missing, the population of Roma is estimated to comprise between 1.5 to 3 percent of the population.

which in this setting is "without religious affiliation" (77%). The results are robust to excluding subjects for whom we do not have information about their religious affiliation (available upon request).

Manipulating the intensity of thinking about Covid-19

We exogenously manipulate the degree to which respondents were thinking about Covid-19 during the experiment. Each participant was randomly allocated either to the COVID or to the CONTROL condition. In the COVID condition, before making decisions in the Help-or-Harm tasks, the subjects answered a series of survey questions focusing on the coronavirus crisis, while in the CONTROL condition, the participants made their decisions in the Help-or-Harm tasks at the beginning of the survey, and answered the coronavirus-related questions only later.

The prime is designed to activate or intensify a complex set of thoughts and concerns that characterize people's lives during the coronavirus crisis. In total, it consists of 43 questions. The focus is on preventive health behavior, social distancing, economic impacts, and psychological wellbeing during the last two weeks. The median time the respondents spent answering this set of questions was 13 minutes. Below, we provide a short summary; the full wording of the questions is available upon request.

The part focusing on preventive health behavior included questions about whether the participant or a household member travelled abroad in February/March; whether they knew someone infected with Covid-19 or someone who was quarantined and whether they had met with that person; what was the frequency of their use of public transportation, going shopping, taking taxi rides or trips with friends, etc.; whether participants adhered to preventive behavior including hand-washing, wearing a face mask, social distancing, etc. The respondents were also asked whether they or a household member had been tested for Covid-19, and whether they experienced any of its common symptoms.

The part focusing on the economic situation contained questions on whether the respondent or a household member had experienced a recent job loss or reduction of working hours; drop in household earnings; savings; self-reported fear of job-loss and evaluation of own financial situation; and whether participants expect to need to borrow money or reduce expenses.

The psychological well-being section contained questions on anxiety- or depression-related symptoms (including experiencing problems with sleeping, feeling nervous/anxious, feeling tired, having less interest in and enjoyment of things, becoming angry more easily, experiencing feelings of not having control over important things, etc.), and self-reported happiness levels.

1.3 Regression specifications

This section describes the empirical strategy used for regression analysis.

From the raw data in which individual-level data are presented as a single row, we reshape the dataset to have a single row for each decision in the Help-or-Harm task for each individual. This gives us 17 observations per individual.

In our main specifications, we test the effect of the COVID condition on allocations in the Help-or-Harm task using the following ordinary least squares regression model (Tables S3 and S7):

$$HHT_{ij} = \alpha + \beta COVID_i + \gamma X_i + \varepsilon_{ij} \quad (1)$$

where HHT_{ij} is the allocation proposed by the participant i to recipient j, where j corresponds to the type of recipient for whom the participant makes an allocation decision (e.g., DOMESTIC, FOREIGN, person living in Asia, person living in the same region, etc.). See exact definitions of recipient types in Supplementary Information 1.2. $COVID_i$ is an indicator variable equal to 1 if the respondent was allocated to the COVID condition and equal to 0 if she was allocated to the CONTROL condition, i.e. it is constant across all js for each individual i.

X_i is a set of individual-specific characteristics and controls. In baseline models, the control variables are: gender, age category (6 categories), household size, number of children, region (14 regions), town size (7 categories), education (4 categories), economic status (7 categories), and household income (11 categories) and task order (96 orderings). As robustness tests, we also report results for (i) models without any control variables, (ii) models with additional control variables (beyond those included in the baseline specification) capturing the economic situation and stress, and (iii) models without controls using probabilistic weights to produce estimates for the representative population (see the discussion on the representativeness of the sample in Methods). A full definition of all variables is provided in Supplementary Information 1.4. Standard errors ε_i are clustered at the individual level when we use multiple observations for an individual i. In all other models we use Huber-White robust standard errors.

We estimate the models on the full sample of 2,186 respondents. The models are estimated separately by j (which refers to the identity of the recipient). Note that in some cases, j is defined across several observations for an individual i. For example, when we define an index FOREIGN recipient, we use four observations per individual: for recipients from Asia, the EU, the USA, and Africa. In such cases, the regression has 2,186 clusters and would have 4x2,186=8,744 observations.[2]

In addition, in order to formally test whether the effect of COVID has different (larger) impact on behavior towards out-group members (e.g., foreigners) than on in-group members (people living in the Czech Republic), we employ the following difference-in-differences models (Tables S4 and S8):

$$HHT_{ij} = \alpha + \beta_1 COVID_i + \beta_2 OUTGROUP_{ik} + \beta_3 COVID_i * OUTGROUP_{ik} + \gamma X_i + \varepsilon_{ik} \quad (2)$$

The specification is otherwise identical to the main model in Equation (1). The main coefficient of interest is β_3. This coefficient presents a difference in the impact of the COVID condition on the Help-or-Harm task allocation when the recipient is from the out-group, relative to the impact when the recipient is from the in-group.

[2] In reality, for FOREIGN we only have 8,743 observations, because for one respondent the allocation to a recipient from Africa is missing. All results are robust to excluding this individual. This is the only missing value. In total, we collected 37,161 allocations from all respondents (2,186*17-1).

1.4 Definitions of variables

Outcome variables
The main outcome of interest is the amount allocated in the Help-or-Harm task:

- HHT_{ij}: Help-or-Harm task allocation to recipient j by participant i, range: CZK 0 to CZK 200, in increments of CZK 1 (numeric)

We also define additional outcomes that are constructed using HHT_{ij}:

- $\text{Hostile behavior}_{\text{ij}} = 1$ if $HHT_{ij} < 100$ (binary)
- $\text{Prosocial behavior}_{ij} = 1$ 1 if $HHT_{ij} > 100$ (binary)

Whenever we use binary outcomes as dependent variables, we estimate linear probability models with the same specification as in Equation (1). The results are robust to using a probit estimator as well (available upon request).

Treatment variable

- $\text{COVID}_{\text{i}} = 1$ if the respondent was randomly assigned to the COVID condition.

Baseline control variables

- Gender: Female (binary)
- Age category: 18-24 (binary, omitted in regression models to avoid perfect multicollinearity) / 25-34 (binary) / 35-44 (binary) / 45-54 (binary) / 55-64 (binary) / 65+ (binary)
- Household size: "How many members are there in your household?" (integer)
- Number of children: "How many children under 18 or students are there in your household?" (integer)
- Region: Prague (binary, omitted) / Central Bohemia (binary) / South Bohemia (binary) / Plzeň (binary) / Karlovy Vary (binary) / Ústí (binary) / Liberec (binary) / Hradec Králové (binary) / Pardubice (binary) / Vysočina (binary) / South Moravia (binary) / Olomouc (binary) / Zlín (binary) / Moravia-Silesia (binary)
- Town size: Below 999 (binary, omitted) / 1,000-1,999 (binary) / 2,000-4,999 (binary) / 5,000-1,9999 (binary) / 2,0000-4,9999 (binary) / 5,0000-9,9999 (binary) / Above 100,000 (binary)
- Education: Primary (binary, omitted) / Lower secondary (binary) / Upper secondary (binary) / University (binary)
- Economic status: Answered "What is your economic status?" with: Employee (binary, omitted) / Entrepreneur (binary) / Unemployed (binary) / Retired (binary) / Student (binary) / Parental leave (binary) / Other (binary)
- Household income: Monthly net household income as provided by the Czech National Panel (pre-crisis levels): Up to 10,000 CZK (binary, omitted) / 10,001 – 15,000 CZK (binary) / 15,001 – 20,000 CZK (binary) / 20,000 – 25,000 CZK (binary) / 25,001 – 30,000 CZK (binary) / 30,001 – 35,000 CZK (binary) / 40,001 – 50,000 CZK (binary) / 50,001 – 60,000 CZK (binary) / More than 60,000 CZK (binary) / I don't know (binary) / Missing income data (binary)
- Task order effects: 96 binary variables specifying block ordering randomized across individuals (95 binary variables included, one omitted)

Additional control variables

- Job loss: Answered "Has anyone in your household lost their job in the last two weeks?" with "Yes" (binary)
- Payment problems: Answered "Is your household currently experiencing problems with regular payments on any of the items listed below?" with "Mortgage or rent=Yes" OR "Loan or credit=Yes" OR "Regular household expenses (e.g., bills) =Yes" (binary)
- Savings: Answered "If your household experienced a complete loss of income, how long do you estimate your savings would allow you to cover your expenses?" with "Less than a week" OR "1 week to 2" OR "2 weeks to 3" OR "1 month" (binary)
- Happiness: "Overall, how happy are you feeling now?" (integer; 0=Very unhappy to 10=Very happy)
  Depression and anxiety: Sum of scores for the following categories (a subset of PHQ-9 and GAD-7 screening tools; (Kroenke and Spitzer 2002; Spitzer et al. 2006). The participants were asked: "Please state how often you experienced the following difficulties in the last two weeks." Scores for each category range from 0=Not at all to 3=Almost every day (note that following GAD-7 coding, we assign the same score to "More than half of the days" and "Almost every day")
    1. I had trouble falling or staying asleep or was sleeping too much (PHQ-9)
    2. I felt nervous, anxious, or on edge (GAD-7)
    3. I had poor appetite or was overeating (PHQ-9)
    4. I felt tired or had little energy (PHQ-9)
    5. I had little interest or pleasure in doing things (PHQ-9)
    6. I was becoming easily annoyed or irritable (GAD-7)
- Perceived stress scale PSS-4 (Cohen, Kamarck, and Mermelstein 1983): Sum of scores for each of the following four questions. Scores for each question range from 0=Never to 4=Very often. (numeric; questions 2 and 3 reverse coded)
    1. In the last two weeks, how often have you felt that you were unable to control the important things in your life?
    2. In the last two weeks, how often have you felt confident about your ability to handle your personal problems?
    3. In the last two weeks, how often have you felt that things were going your way?
    4. In the last two weeks, how often have you felt difficulties were piling up so high that you could not overcome them?

Variables used for sub-sample analyses

In Fig. 2 and Supplementary Table 6, we conduct the analysis using the model specified in Equation (1) with baseline control variables (defined above) for the following subsamples of respondents i:

- Age: Younger (below median) (N=1,086)
- Age: Older (above median) (N=1,100)
- Gender: Men (N=1,088)
- Gender: Women (1,098)
- Municipality size: Cities (N=998)
- Municipality size: Villages/towns (N=1,188)
- Education: University (N=622)
- Education: Primary/Secondary (1,564)

- Income: Above median (N=1,152)
- Income: Below median (N=1,034)

1.5 Robustness checks – the role of inattention

A potential concern is that thinking and answering questions in the COVID condition may have caused fatigue and led to less attention to allocation decisions, and thus may have affected choices without activating Covid-related concerns and fears. However, this explanation is not supported by our data. If the participants in COVID were less attentive, we would expect them to be more prone to stick to the default allocation, to be less likely to correctly answer attention check questions and to spend less time making decisions. However, subjects in COVID are neither more prone to stick to the default allocation, nor less likely to correctly answer attention check questions. Their response time is somewhat lower in COVID, but all results are robust to controlling for response time (Tables S9-S10).

Specifically, a dummy variable "Sticking to default" is equal to one if the allocation in the HHT is 100 (i.e., the default allocation). To measure attention levels we included two test questions, in which respondents were asked to fill out a specific response to show that they read the text. We code the variable "Passing both attention checks", which is equal to1 if both attention checks were successfully passed (binary). Only 185 or 8 percent of the sample did not pass this check. Finally, response time is measured as time in minutes to complete the set of choices in the Help-or-Harm tasks (numeric).

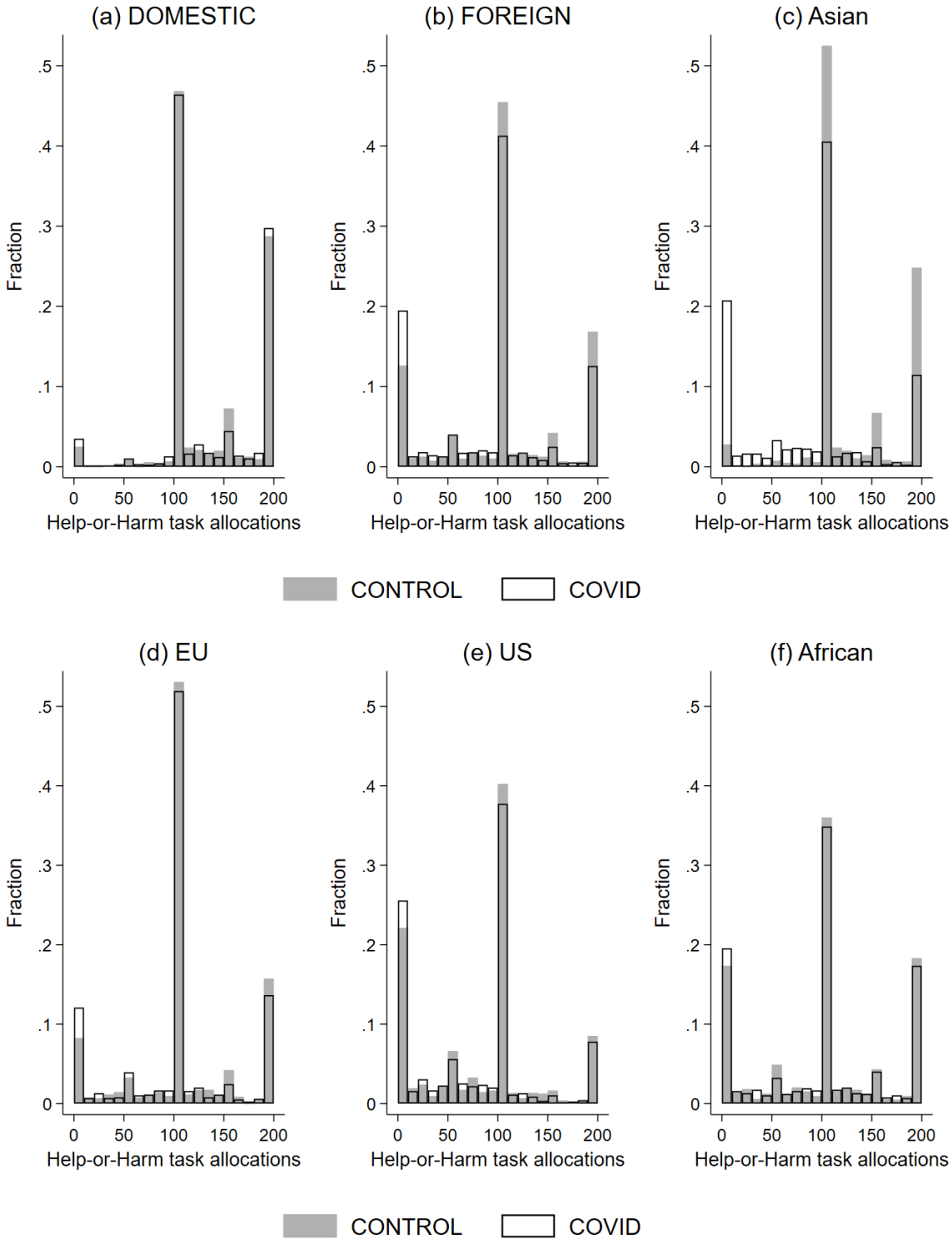
1.6 Multiple hypothesis testing

In Tables S3 and S7, we present two sets of p-values. The first is standard "per comparison" p-values. These are appropriate for researchers with an a priori interest in a specific outcome. For instance, researchers interested in the impact of COVID on behavior towards foreigners, or specifically towards Asians, should focus on these p-values.

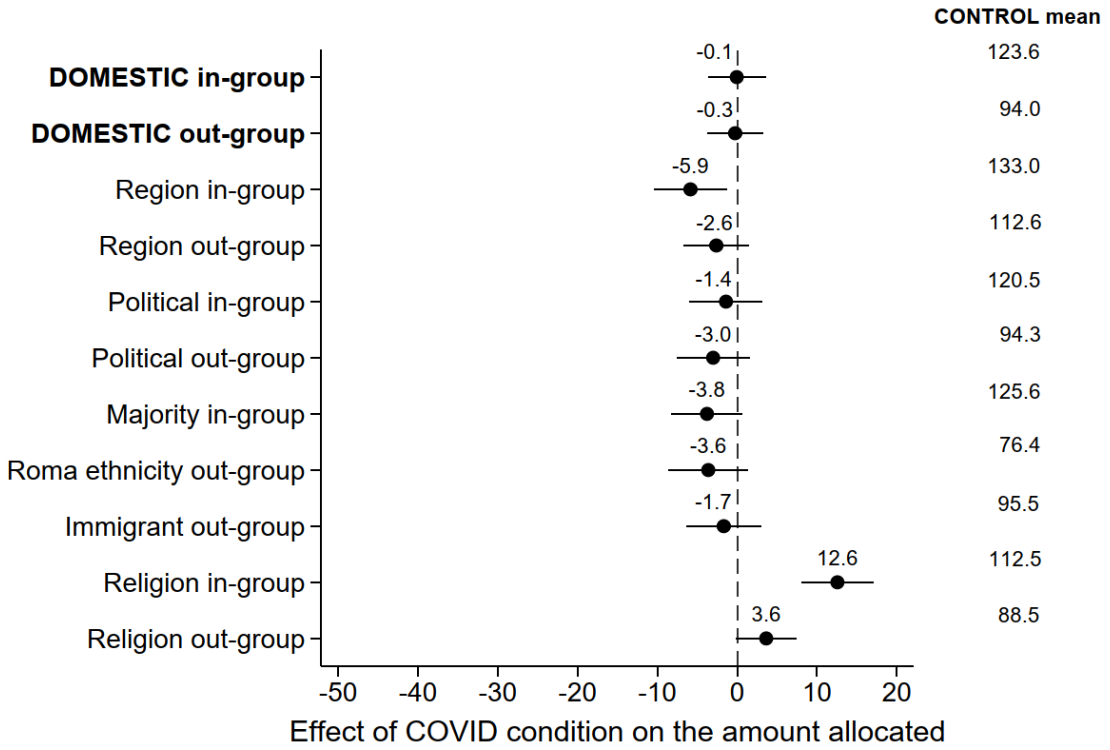
Second, the analysis also presents additional p-values that account for multiple hypothesis testing, since we test impacts on 17 different outcome variables. Thus, a potential concern might be that our results are susceptible to false discovery of significant results that arise simply by chance. We correct the p-values using a method recently developed by Barsbai et al. (2020). The method extends the procedure of List, Shaikh, and Xu (2019) by allowing for correction in multivariate regression models. The method accounts for the dependence structure between hypotheses and thus increases statistical power to reject true false null hypotheses when compared to methods assuming independence between hypotheses (e.g., Bonferroni 1935; Holm (1979)). We take the most conservative approach and, in each panel, we adjust for the 17 hypotheses corresponding to the number of dependent variables in Tables S3 and S7, for which we estimate the effects. The main results that participants are more hostile to foreigners ($P < 0.001$), recipients from EU ($P = 0.004$) and especially recipients from Asia ($P < 0.001$) are still robust.

2 Supplementary Figures

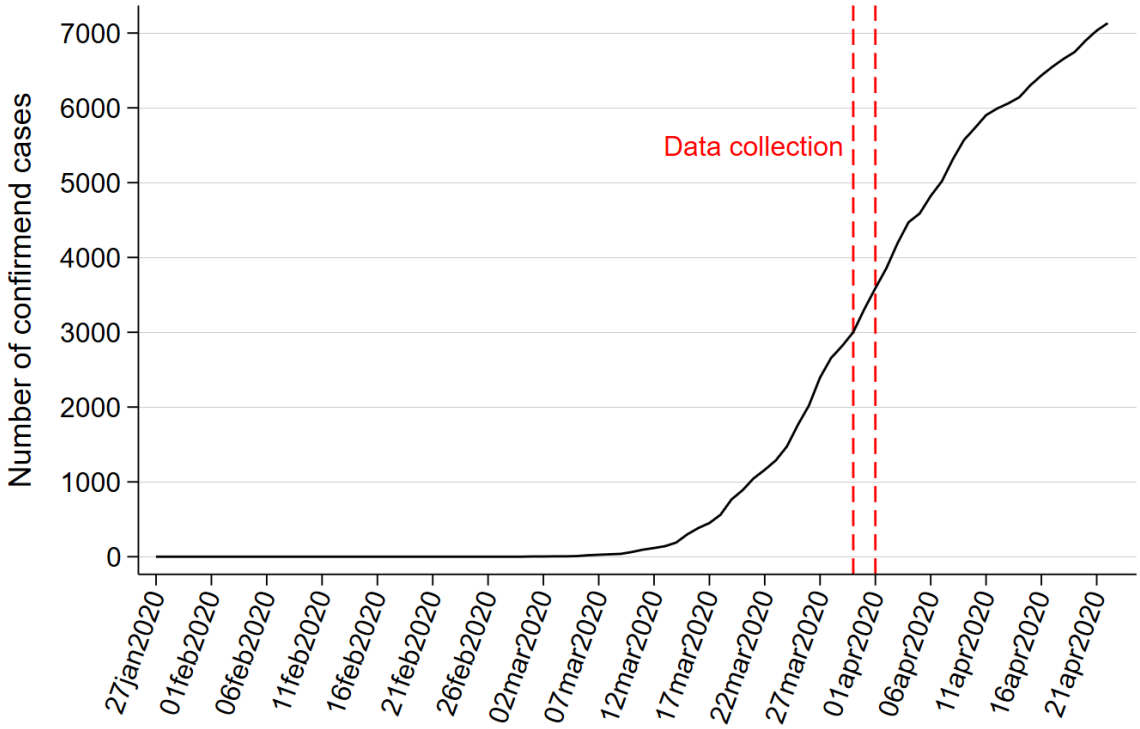
Supplementary Figure 1. Screenshot of the decision-making environment in one of the Help-or-Harm tasks (allocating a reward to a person from Asia).



Supplementary Figure 2. Histograms of Help-or-Harm task allocations by COVID and CONTROL condition for DOMESTIC (a), FOREIGN (b), Asian (c), EU (d), US (e) and African (f) recipients.



Supplementary Figure 3. Effect of COVID condition on the amount allocated in the Help-or-Harm task for domestic recipients, by their in-group/out-group status. Coefficient plots. Bars represent 95 percent confidence intervals. The figure presents estimated coefficients of the COVID condition relative to the CONTROL condition using regression with the Help-or-Harm task allocation as the dependent variable. Means for the CONTROL condition are specified in the right panel. Corresponding regression models are presented in Supplementary Table 7.



Supplementary Figure 4. Confirmed Covid-19 cases in the Czech Republic. Source: Czech Ministry of Health (https://onemocneni-aktualne.mzcr.cz/covid-19/; accessed on April 23, 2020).

3 Supplementary Tables

Supplementary Table 1. Demographic characteristics and randomization check

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Sample mean	**CONTROL**	**COVID**	**(2) vs. (3) p-value**	**Sample mean (weighted)**	**Czech population**	**diff. (5) vs. (6)**
Female	0.50	0.51	0.50	0.571	0.52	0.51	-0.01
Age category				0.599			
age cat 18-24	0.08	0.08	0.07		0.08	0.08	0.00
age cat 25-34	0.15	0.16	0.14		0.16	0.16	0.01
age cat 35-44	0.18	0.16	0.19		0.21	0.20	-0.01
age cat 45-54	0.18	0.18	0.19		0.17	0.17	0.00
age cat 55-64	0.16	0.16	0.16		0.15	0.15	0.01
age cat 65+	0.26	0.26	0.25		0.24	0.24	0.00
Education				0.434			
primary	0.06	0.06	0.07		0.10	0.11	0.01
lower secondary	0.29	0.30	0.29		0.35	0.34	-0.01
upper secondary	0.36	0.37	0.35		0.35	0.35	0.00
university	0.28	0.27	0.30		0.20	0.20	0.00
Economic status				0.395			
Employee	0.49	0.49	0.49		0.47	0.48	0.01
Entrepreneur	0.04	0.03	0.05		0.09	0.10	0.01
Unemployed	0.03	0.04	0.03		0.03	0.03	0.00
Retired	0.31	0.31	0.30		0.30	0.30	-0.01
Student	0.06	0.06	0.06		0.06	0.06	0.00
Parental leave and other	0.07	0.07	0.07		0.05	0.05	0.00
Town size				0.417			
Below 999	0.08	0.08	0.07		0.17	0.17	0.00
1,000-1,999	0.04	0.04	0.04		0.10	0.10	0.00
2,000-4,999	0.07	0.07	0.06		0.12	0.11	0.00
5,000-19,999	0.12	0.12	0.11		0.18	0.18	0.01
20,000-49,999	0.08	0.07	0.08		0.12	0.12	0.00
50,000-99,999	0.17	0.16	0.17		0.10	0.10	0.00
Above 100,000	0.46	0.44	0.47		0.22	0.22	0.00
Region				0.728			
Prague	0.27	0.27	0.28		0.12	0.12	0.00
Central Bohemia	0.1	0.10	0.10		0.12	0.13	0.00
South Bohemia	0.05	0.04	0.06		0.07	0.06	-0.01
Plzeň	0.05	0.05	0.04		0.05	0.06	0.00
Karlovy Vary	0.02	0.02	0.02		0.03	0.03	0.00
Ústí	0.06	0.06	0.06		0.07	0.08	0.00
Liberec	0.04	0.05	0.03		0.04	0.04	0.00
Hradec Králové	0.04	0.04	0.04		0.05	0.05	0.00
Pardubice	0.04	0.04	0.05		0.05	0.05	0.00
Vysočina	0.04	0.04	0.03		0.05	0.05	0.00
South Moravia	0.09	0.09	0.09		0.11	0.11	0.00

Continued

Supplementary Table 1. Demographic characteristics and randomization check (continued)

	(1) **Sample mean**	(2) **CONTROL**	(3) **COVID**	(4) **(2) vs. (3) p-value**	(5) **Sample mean (weighted)**	(6) **Czech population**	(7) **diff. (5) vs. (6)**
Olomouc	0.05	0.05	0.05		0.06	0.06	0.00
Zlín	0.05	0.05	0.04		0.06	0.06	0.00
Moravia-Silesia	0.1	0.10	0.10		0.11	0.12	0.01
Household size	2.49	2.49	2.49	0.662	2.61		
Number of children	0.54	0.54	0.55	0.629	0.59		
Household income							
Above CZK 35,000	0.46	0.46	0.46	0.821	0.45		
N	2186	1044	1142				

Notes: Means in columns 1, 2, and 3. Column 4 reports p-values of Wilcoxon rank-sum test for equality between the CONTROL and COVID conditions for non-binary variables (the last three variables in the list), whereas for all remaining categorical variables we use Pearson's chi-squared. The sample is representative of the Czech population 18+ in terms of sex, age, education, region, municipality size, employment status before the Covid-19 pandemic, age x sex, age x education. Prague and municipalities above 50,000 are oversampled (boost 200%). Column 5 reports weighted sample means that correct for the oversampling. Column 6 reports means for the Czech population for the variables based on which the sample is benchmarked (this excludes household size, number of children, and household income). Simple differences between columns 5 and 6 are presented in column 7.

Supplementary Table 2. Mean allocations in the Help-or-Harm task by the identity of the recipients, across CONTROL and COVID conditions

	(1) All	(2) CONTROL	(3) COVID	(4) Effect (p-value)	(5) N
Panel A: Indices					
DOMESTIC (Czech)	132.8	133.5	132.2	-1 [0.39]	2186
FOREIGN	95.9	103.1	89.3	-14 [0.00]	8743
(vs. DOMESTIC)	-37 [0.00]	-30 [0.00]	-43 [0.00]		
DOMESTIC in-group	123.3	123.6	123.0	-1 [0.52]	9297
DOMESTIC out-group	93.7	94.0	93.5	0 [0.31]	16935
(vs. in-group)	-30 [0.00]	-30 [0.00]	-30 [0.00]		
Panel B: Foreign					
Asian	106.1	127.0	86.9	-40 [0.00]	2186
(vs. DOMESTIC)	-27 [0.00]	-6 [0.00]	-45 [0.00]		
EU	103.4	107.1	100.0	-7 [0.00]	2186
(vs. DOMESTIC)	-29 [0.00]	-26 [0.00]	-32 [0.00]		
US	76.2	78.9	73.8	-5 [0.01]	2186
(vs. DOMESTIC)	-57 [0.00]	-55 [0.00]	-58 [0.00]		
African	97.8	99.2	96.6	-3 [0.30]	2185
(vs. DOMESTIC)	-35 [0.00]	-34 [0.00]	-36 [0.00]		
Panel C: Domestic in-group/out-group					
Region in-group	129.7	133.0	126.7	-6 [0.00]	2783
Region out-group	111.0	112.6	109.6	-3 [0.02]	3775
(vs. in-group)	-18 [0.00]	-20 [0.00]	-17 [0.00]		
Political in-group	119.5	120.5	118.6	-2 [0.21]	2186
Political out-group	92.3	94.3	90.5	-4 [0.08]	2186
(vs. in-group)	-27 [0.00]	-26 [0.00]	-28 [0.00]		
Majority in-group	123.4	125.6	121.4	-4 [0.05]	2186
Roma ethnicity out-group	74.6	76.4	73.0	-3 [0.06]	2186
(vs. Majority in-group)	-49 [0.00]	-49 [0.00]	-48 [0.00]		
Immigrant out-group	94.6	95.5	93.8	-2 [0.55]	2186
(vs. Majority in-group)	-29 [0.00]	-30 [0.00]	-28 [0.00]		
Religion in-group	118.7	112.5	124.5	12 [0.00]	2142
Religion out-group	90.3	88.5	92.0	4 [0.02]	4372
(vs. in-group)	-28 [0.00]	-24 [0.00]	-32 [0.00]		

Notes: Mean allocations in the Help-or-Harm task. "In-group" indicates that the respondent and the recipient share the group attribute. Differences reported in column 4 and on respective rows indicate a comparison group (e.g., vs. Domestic). Squared brackets report Wilcoxon rank-sum equality test p-values. The number of observations equals the number of individual decisions considered for each group of recipients (See Supplementary Information 1.2 for detailed descriptions of recipient group construction).

Supplementary Table 3. Effect of the COVID condition on the amount allocated in the Help-or-Harm task, by the identity of the recipient (domestic vs. foreign)

	(1)	(2)	(3)	(4)	(5)	(6)
Identity of the recipient:	DOMESTIC	FOREIGN	Asian	EU	US	African
Panel A: Baseline controls						
COVID	-0.698	-13.88***	-40.31***	-7.933***	-4.625*	-2.628
p-values	[0.753]	[0.000]	[0.000]	[0.001]	[0.063]	[0.364]
p-values (MHT-corrected)	[0.973]	[0.000]	[0.000]	[0.004]	[0.351]	[0.843]
Panel B: No controls						
COVID	-1.277	-13.76***	-40.15***	-7.144***	-5.110**	-2.628
p-values	[0.558]	[0.000]	[0.000]	[0.002]	[0.039]	[0.349]
p-values (MHT-corrected)	[0.856]	[0.000]	[0.000]	[0.023]	[0.225]	[0.823]
Panel C: Additional controls						
COVID	-0.740	-14.15***	-40.41***	-8.043***	-5.114**	-3.042
p-values	[0.739]	[0.000]	[0.000]	[0.001]	[0.040]	[0.297]
p-values (MHT-corrected)	[0.966]	[0.000]	[0.000]	[0.009]	[0.245]	[0.759]
Panel D: Probability weights						
COVID	-2.740	-14.23***	-40.14***	-6.127**	-8.298**	-2.344
p-values	[0.337]	[0.000]	[0.000]	[0.039]	[0.011]	[0.536]
CONTROL mean	133.5	103.1	127.0	107.1	78.9	99.2
# Clusters		2186				
Observations	2186	8743	2186	2186	2186	2185

Notes: OLS coefficients. P-values reported in square brackets (robust standard errors clustered at an individual level in column 2 where multiple observations are used per individual). The dependent variable is the amount allocated in the Help-or-Harm task. In Panel A, each regression controls for gender, age category (6 categories), household size, number of children, region (14 regions), town size (7 categories), education (4 categories), economic status (7 categories), household income (11 categories) and task order. Panel B reports results from regressions without control variables. In Panel C, each regression controls for baseline controls (as in Panel A) and further controls for the variables approximating economic impacts of the Covid-19 pandemic, savings, and stress (see Supplementary Information 1.4 for the list and definition of variables). Panel D reports results of weighted OLS regressions with no controls, using probability weights to correct for the oversampling of respondents from large municipalities. We also report multiple hypothesis testing corrected p-values using a method developed by Barsbai et al. (2020). See Supplementary Information 1.6 for details on the procedure and the hypotheses tested. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Supplementary Table 4. Interaction-effects specification: Effect of the COVID condition on the amount allocated in the Help-or-Harm task, by the identity of the recipient (domestic vs. foreign)

Identity of the recipient:	(1) FOREIGN vs. DOMESTIC	(2) Asian vs. DOMESTIC	(3) EU vs. DOMESTIC	(4) US vs. DOMESTIC	(5) African vs. DOMESTIC
COVID	-1.251	-1.068	-1.382	-0.745	-0.978
p-values	[0.573]	[0.627]	[0.529]	[0.735]	[0.659]
Foreigner	-30.44***	-6.462***	-26.40***	-54.60***	-34.30***
p-values	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
COVID*Foreigner	-12.49***	-38.87***	-5.867**	-3.832	-1.361
p-values	[0.000]	[0.000]	[0.013]	[0.174]	[0.661]
CONTROL mean	133.5	133.5	133.5	133.5	133.5
# Clusters	2186	2186	2186	2186	2186
Observations	10929	4372	4372	4372	4371
COVID+COVID*Foreigner	-13.67***	-40.06***	-7.30***	-4.84	-2.60
p-values	[0.000]	[0.000]	[0.001]	[0.050]	[0.352]

Notes: OLS coefficients. P-values reported in square brackets (robust standard errors clustered at individual level whenever multiple observations are used per individual). The dependent variable is the amount allocated in the Help-or-Harm task. FOREIGN indicates that the recipient is a foreigner. Each regression controls for gender, age category (6 categories), household size, number of children, region (14 regions), town size (7 categories), education (4 categories), economic status (7 categories), household income (11 categories), and task order. The bottom row presents an estimate and a p-value of a coefficient COVID+COVID*Foreigner estimated using a linear combination of the two coefficients. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Supplementary Table 5. Effect of the COVID condition on the prevalence of hostile and pro-social behavior in the Help-or-Harm task, by the identity of the recipient (domestic vs. foreign)

	(1)	(2)	(3)	(4)	(5)	(6)
Identity of the recipient:	DOMESTIC	FOREIGN	Asian	EU	US	African
Panel A: Hostile behavior (= 1 if Help-or-Harm task allocation < 100)						
COVID	0.018	0.109***	0.315***	0.057***	0.046**	0.017
p-values	[0.105]	[0.000]	[0.000]	[0.002]	[0.035]	[0.430]
CONTROL mean	0.057	0.260	0.071	0.198	0.443	0.330
Panel B: Pro-social behavior (= 1 if Help-or-Harm task allocation > 100)						
COVID	-0.015	-0.068***	-0.199***	-0.033*	-0.031**	-0.009
p-values	[0.507]	[0.000]	[0.000]	[0.091]	[0.048]	[0.648]
CONTROL mean	0.495	0.305	0.424	0.298	0.173	0.326
Panel C: Sticking to the default (= 1 if Help-or-Harm task allocation = 100)						
COVID	-0.003	-0.041**	-0.116***	-0.024	-0.015	-0.007
p-values	[0.875]	[0.014]	[0.000]	[0.277]	[0.488]	[0.728]
CONTROL mean	0.447	0.434	0.505	0.504	0.384	0.345
# Clusters		2186				
Observations	2186	8743	2186	2186	2186	2185

Notes: Linear probability model coefficients. P-values reported in square brackets (robust standard errors clustered at individual level in column 2 where multiple observations are used per individual). The dependent variable in Panel A is a binary variable "Hostile behavior" indicating that the Help-or-Harm task allocation is strictly lower than 100. The dependent variable in Panel B is a binary variable "Pro-social behavior" indicating that the allocation is strictly greater than 100. The dependent variable in Panel C is a binary variable "Sticking to the default" indicating that the allocation is equal to 100. In all columns, the set of controls is the same as in Supplementary Table 4. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Supplementary Table 6. Sub-group analysis: Effect of the COVID condition on the amount allocated in the Help-or-Harm task

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Age	Younger (below median)			Older (above median)		
Identity of the recipient:	DOMESTIC	FOREIGN	Asian	DOMESTIC	FOREIGN	Asian
COVID	-0.06	-12.91***	-34.82***	-2.17	-15.64***	-45.94***
p-values	[0.985]	[0.000]	[0.000]	[0.497]	[0.000]	[0.000]
Control mean	134.4	108.3	127.0	132.6	97.8	127.1
Observations	1086	4344	1086	1100	4399	1100
Panel B: Gender	Men			Women		
Identity of the recipient:	DOMESTIC	FOREIGN	Asian	DOMESTIC	FOREIGN	Asian
COVID	-0.49	-15.07***	-44.70***	-0.96	-12.83***	-35.86***
p-values	[0.882]	[0.000]	[0.000]	[0.754]	[0.000]	[0.000]
Control mean	130.5	100.9	128.1	136.4	105.1	126.0
Observations	1088	4352	1088	1098	4391	1098
Panel C: Municipality size	Cities			Villages/towns		
Identity of the recipient:	DOMESTIC	FOREIGN	Asian	DOMESTIC	FOREIGN	Asian
COVID	4.03	-11.81***	-39.92***	-4.58	-16.13***	-41.27***
p-values	[0.241]	[0.000]	[0.000]	[0.138]	[0.000]	[0.000]
Control mean	129.4	101.0	127.7	136.8	104.7	126.5
Observations	998	3991	998	1188	4752	1188
Panel D: Education	University			Primary/secondary		
Identity of the recipient:	DOMESTIC	FOREIGN	Asian	DOMESTIC	FOREIGN	Asian
COVID	0.29	-9.76***	-30.62***	-1.90	-16.33***	-44.72***
p-values	[0.947]	[0.007]	[0.000]	[0.477]	[0.000]	[0.000]
Control mean	123.0	100.6	120.7	137.4	104.0	129.4
Observations	622	2488	622	1564	6255	1564
Panel E: Income	Above median			Below median		
Identity of the recipient:	DOMESTIC	FOREIGN	Asian	DOMESTIC	FOREIGN	Asian
COVID	1.68	-13.06***	-37.39***	-3.53	-16.25***	-44.09***
p-values	[0.594]	[0.000]	[0.000]	[0.279]	[0.000]	[0.000]
Control mean	129.1	104.4	125.9	138.3	101.6	128.2
Observations	1152	4608	1152	1034	4135	1034

Notes: OLS coefficients. P-values reported in square brackets (robust standard errors clustered at individual level in columns 2 and 5). The dependent variable is the amount allocated in the Help-or-Harm task. Younger (older) is coded as below (above and equal to) the median age of 50. Cities is coded as municipalities of 100,000 inhabitants and above, villages and towns are coded as having less than 100,000 inhabitants. Above (below) median income is coded as the net monthly household income equal to or above (below) CZK 35,000. In all columns, the set of controls is the same as in Supplementary Table 4. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Supplementary Table 7. Effect of the COVID condition on the amount allocated in the Help-or-Harm task, by the identity of the recipient (domestic in-group vs. domestic out-group)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Identity of the recipient:	DOMESTIC in-group	DOMESTIC out-group	Region in-group	Region out-group	Political in-group	Political out-group	Majority in-group	Roma ethnicity out-group	Migrant out-group	Religion in-group	Religion out-group
Panel A: Baseline controls											
COVID	-0.054	-0.256	-5.852**	-2.601	-1.406	-3.004	-3.787*	-3.614	-1.683	12.56***	3.643*
p-values	[0.977]	[0.885]	[0.012]	[0.214]	[0.545]	[0.202]	[0.097]	[0.156]	[0.483]	[0.000]	[0.060]
p-values (MHT-corrected)	[0.976]	[0.982]	[0.094]	[0.659]	[0.904]	[0.651]	[0.444]	[0.591]	[0.901]	[0.000]	[0.351]
Panel B: No controls											
COVID	-0.538	-0.465	-6.272***	-3.087	-1.928	-3.778*	-4.278*	-3.371	-1.698	12.02***	3.568*
p-values	[0.772]	[0.797]	[0.007]	[0.146]	[0.391]	[0.100]	[0.053]	[0.179]	[0.472]	[0.000]	[0.069]
p-values (MHT-corrected)	[0.930]	[0.802]	[0.057]	[0.526]	[0.802]	[0.409]	[0.276]	[0.5843]	[0.8396]	[0.0001]	[0.347]
Panel C: Additional controls											
COVID	-0.146	-0.571	-5.893**	-2.929	-1.518	-3.263	-3.827*	-4.026	-2.093	12.40***	3.376*
p-values	[0.937]	[0.749]	[0.011]	[0.164]	[0.515]	[0.170]	[0.093]	[0.117]	[0.385]	[0.000]	[0.084]
p-values (MHT-corrected)	[0.942]	[0.923]	[0.091]	[0.560]	[0.877]	[0.594]	[0.429]	[0.472]	[0.793]	[0.000]	[0.422]
Panel D: Probability weights											
COVID	-1.166	-1.679	-7.285**	-5.164*	-0.861	-4.800	-5.786**	-2.123	-2.655	9.846***	2.221
p-values	[0.628]	[0.476]	[0.012]	[0.065]	[0.765]	[0.100]	[0.048]	[0.517]	[0.387]	[0.001]	[0.386]
CONTROL mean	123.6	94.0	133.0	112.6	120.5	94.3	125.6	76.4	95.5	112.5	88.5
# Clusters	2186	2186	2186	2186							2186
Observations	9297	16935	2783	3775	2186	2186	2186	2186	2186	2142	6602

Notes: OLS coefficients. P-values reported in square brackets (robust standard errors clustered at individual level whenever multiple observations are used per individual). The dependent variable is the amount allocated in the Help-or-Harm task. In Panel A, each regression controls for gender, age category (6 categories), household size,

number of children, region (14 regions), town size (7 categories), education (4 categories), economic status (7 categories), and household income (11 categories), and task order. Panel B reports results from regressions without control variables. In Panel C, each regression controls for baseline controls (same as in Panel A) and further controls for the variables approximating economic impacts of the Covid-19 pandemic, savings, and stress (see Supplementary Information 1.4 for the list and definition of variables). Panel D reports results of weighted OLS regressions with no controls, using probability weights to correct for the oversampling of respondents from large municipalities. We also report multiple hypothesis testing corrected p-values using a method developed by Barsbai et al. (2020). See Supplementary Information 1.6 for details on the procedure and the hypotheses tested. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Supplementary Table 8. Interaction-effects specification: Effect of the COVID condition on the amount allocated in the Help-or-Harm task, by the identity of the recipient (domestic in-group vs. domestic out-group)

	(1)	(2)	(3)	(4)	(5)	(6)
Identity of the recipient:	DOMESTIC out-group vs. DOMESTIC in-group	Region out-group vs. in-group	Political out-group vs. in-group	Roma ethnicity out-group vs. Majority in-group	Immigrant out-group vs. Majority in-group	Religion out-group vs. in-group
COVID	-0.213	-5.729**	-1.280	-4.154*	-4.024*	12.15***
p-values	[0.909]	[0.013]	[0.576]	[0.067]	[0.074]	[0.000]
out-group	-29.75***	-20.38***	-26.21***	-49.26***	-30.17***	-24.24***
p-values	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
COVID*out-group	0.0536	3.041	-1.850	0.907	2.580	-8.385***
p-values	[0.971]	[0.128]	[0.418]	[0.744]	[0.290]	[0.000]
CONTROL mean	123.6	133.0	120.5	125.6	125.6	112.5
# Clusters	2186	2186	2186	2186	2186	2186
Observations	26232	6558	4372	4372	4372	8744
COVID+COVID*out-group	-0.160	-2.688	-3.130	-3.247	-1.445	3.762*
p-values	[0.928]	[0.198]	[0.174]	[0.194]	[0.538]	[0.052]

Notes: OLS coefficients. P-values reported in square brackets (robust standard errors clustered at individual level whenever multiple observations are used per individual). The dependent variable is the amount allocated in the Help-or-Harm task. In all columns, the set of controls is the same as in Supplementary Table 4. The bottom row presents an estimate and a p-value of a coefficient COVID+COVID*out-group estimated using a linear combination of the two coefficients. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Supplementary Table 9. Robustness checks: Effect of the COVID condition on the likelihood of sticking to the default allocation, attention, and response time

	(1)	(2)	(3)
Dependent variables:	Sticking to default (d)	Passed both attention checks (d)	Response time
COVID	-0.006	0.002	-0.186**
p-values	[0.695]	[0.856]	[0.048]
CONTROL mean	0.393	0.912	2.533
# Clusters	2186		
Observations	37161	2186	2186

Notes: Linear probability model coefficients (columns 1 and 2) and OLS coefficients (column 3). P-values reported in square brackets (robust standard errors clustered at individual level in column 1). The dependent variable in column 1 is a binary variable Sticking to default (d) equal to one if the amount allocated in the Help-or-Harm task was equal to 100. The dependent variable in column 2 is Passed both attention checks (d) equal to one if the individual completed both checks used to monitor respondents' attention (See Supplementary Information 1.5). The dependent variable in column 3 is Response time, the total duration in minutes a respondent spent answering the Help-or-Harm task module. In all columns, the set of controls is the same as in Supplementary Table 4. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Supplementary Table 10. Robustness checks: Effect of the COVID condition on the amount allocated in the Help-or-Harm task, by the identity of the recipient (domestic vs. foreign)

	(1)	(2)	(3)
Identity of the recipient:	DOMESTIC	FOREIGN	Asian
Panel A: Controlling for passing both attention checks			
COVID	-0.707	-13.87***	-40.32***
p-values	[0.750]	[0.000]	[0.000]
CONTROL mean	133.5	103.1	127.0
Observations	2186	8743 (2186 clusters)	2186
Panel B: Excluding inattentive respondents			
COVID	0.821	-12.76***	-39.97***
p-values	[0.722]	[0.000]	[0.000]
CONTROL mean	132.7	102.6	127.3
Observations	2001	8004 (2001 clusters)	2001
Panel C: Controlling for response time			
COVID	-0.667	-13.84***	-40.24***
p-values	[0.764]	[0.000]	[0.000]
CONTROL mean	133.5	103.1	127.0
Observations	2186	8743 (2186 clusters)	2186

Notes: OLS coefficients. P-values reported in square brackets (robust standard errors clustered at individual level in column 2). The dependent variable is the amount allocated in the Help-or-Harm task. In all columns, the set of controls is the same as in Supplementary Table 4. Models estimated in Panel A further control for Passed both attention checks (d) that equals one if the individual completed both checks used to monitor respondents' attention (See Supplementary Information 1.5). Models estimated in Panel C further control for Response time, the total duration in minutes a respondent spent answering the Help-or-Harm task module. Observations for all 2,186 individuals used in Panels A and C. Panel B restricts the sample to 2,001 individuals who passed both attention checks. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Supplementary Table 11. Economic situation and psychological well-being of the respondents

	Sample mean
Panel A: Income and work	
Current income relative to pre-crisis	0.83
Share of hours worked during week of Mar 16 to before crisis	0.85
Share of hours worked during week of Mar 23 to before crisis	0.81
Household member lost job in the prior two weeks (d)	0.07
Currently fearing job loss (Likert 0-10)	3.69
Panel B: Household economy	
Household has problem with payments (d)	0.14
Household savings would last 1 month or less (d)	0.36
Number of weeks household savings would last	13.06
Panel C: Psychological state	
Happiness index (min 0-10 max)	5.09
Depression and anxiety index (min 0-18 max)	4.32
Perceived stress scale PSS-4 (min 0-16 max)	5.77
Panel D: Measures considered by the household	
Loan from family or acquaintances (d)	0.08
Loan from bank or credit company (d)	0.03
Asset sales (d)	0.04
Significant reduction in spending on food purchases (d)	0.28
Significant reduction in spending on consumer purchases (d)	0.39
Search for cheaper housing (d)	0.02
Search for a different or additional job (d)	0.17
Does not consider any of these measures (d)	0.50
N	2186

Notes: Means. Share of hours worked are variables constructed as the share of hours worked in the respective week divided by hours worked prior to the Covid-19 crisis. Household has problems with payments is coded 1 if the participant responded positively to having problems with payments in either of three questions on the topic. The depression and anxiety index is a sum of six variables using a subset of questions from the PHQ-9 questionnaire (Kroenke and Spitzer 2002) and GAD-7 (Spitzer et al. 2006). Perceived stress scale PSS-4 is a sum of four variables following (Cohen, Kamarck, and Mermelstein 1983).

4 References

Barsbai, Toman, Victoria Licuanan, Andreas Steinmayr, Erwin Tiongson, and Dean Yang. 2020. “Information and the Acquisition of Social Network Connections.” *Mimeo*.

Bonferroni, Carlo E. 1935. “Il Calcolo Delle Assicurazioni Su Gruppi Di Teste.” *Studi in Onore Del Professore Salvatore Ortu Carboni*, 13–60.

Cohen, Sheldon, Tom Kamarck, and Robin Mermelstein. 1983. “A Global Measure of Perceived Stress.” *Journal of Health and Social Behavior* 24 (4): 385–96.

Holm, Sture. 1979. “A Simple Sequentially Rejective Multiple Test Procedure.” *Scandinavian Journal of Statistics*, 65–70.

Kroenke, Kurt, and Robert L Spitzer. 2002. “The PHQ-9: A New Depression Diagnostic and Severity Measure.” *Psychiatric Annals* 32 (9): 509–15.

List, John A, Azeem M Shaikh, and Yang Xu. 2019. “Multiple Hypothesis Testing in Experimental Economics.” *Experimental Economics* 22 (4): 773–93.

Spitzer, Robert L, Kurt Kroenke, Janet B W Williams, and Bernd Löwe. 2006. “A Brief Measure for Assessing Generalized Anxiety Disorder: The GAD-7.” *Archives of Internal Medicine* 166 (10): 1092–97.