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CIVIL LIBERTIES IN TIMES OF CRISIS

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ABSTRACT

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A randomized controlled trials registry entry is available at https://www.socialscienceregistry.org/trials/5609
A online appendix is available at http://www.nber.org/data-appendix/w27972

CIVIL LIBERTIES IN TIMES OF CRISIS[1]

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Abstract

Major crises — from terrorist attacks to epidemic outbreaks — bring the trade-off between individual civil liberties and societal well-being into sharp relief. In this paper, we study how willing citizens are to restrict civil liberties to improve public health conditions in the context of the COVID-19 pandemic. We design and conduct representative surveys involving approximately 550,000 responses across 15 countries, including China and the United States, during many months of the COVID-19 pandemic, from March 2020 until January 2021. We document significant heterogeneity across countries and demographic groups in willingness to sacrifice rights for public welfare. Citizens disadvantaged by income, education, or race are less willing to sacrifice rights than their more advantaged peers in every country, as are those with prior experience in communist regimes. Leveraging naturally-occurring variation as well as experimental approaches, we estimate that a one standard deviation increase in health security concerns increases willingness to sacrifice civil liberties by approximately 68%-83% of the difference between the average Chinese and U.S. citizen. Stated preferences correlate with observed behavior including demand for tracing apps, donations, and petitions.

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I Introduction

The notion that humans have natural, inalienable rights is the foundation of liberal democracies (Locke 1690; Mill 1859; Rawls 1971). A defining feature of liberal democratic institutions is their respect for and protection of civil liberties — such as due process, freedom of speech, and the right to privacy.[1] Indeed, civil liberties are so fundamental that many political philosophers and social scientists sometimes consider them as "sacred values," i.e., "goods" or rights that should not be subject to comparisons or trade-offs (e.g., Aristotle 1935; Aberle et al. 1950; Radcliffe-Brown 1952; Raz 1986; Fiske and Tetlock 1997; Tetlock et al. 2000; Tetlock 2003).

Yet when societies confront major crises — from terrorist attacks or devastating natural disasters to outbreaks of disease — trade-offs between individual civil liberties and security become stark. What are citizens willing to sacrifice, and what are they steadfast in supporting no matter what the circumstance? How does this vary across countries, between individuals within countries, and over time? How do threats to health security affect this trade-off, and what does variation in the willingness to sacrifice rights across groups reveal about social inequality?

The global COVID-19 pandemic provides a singular opportunity to study these questions. Over the time period of our analysis, beginning three months after the new coronavirus was first identified, governments lacked an effective technological fix such as a vaccine or therapeutic. Countries were fighting a common enemy with a limited set of tools that involved regulations on movement, privacy, assembly, and other behaviors. Moreover, it quickly became clear that not all citizens were at equal risk of succumbing to severe disease: epidemiological and medical risk factors clearly mattered. These features of the pandemic allow us to describe the views of citizens around the world concerning a feasible set of restrictions on civil liberties and identify how people navigate the trade-off between civil liberties and public welfare as a function of perceived health insecurity.[2]

To do so, we conducted two large-scale online surveys with questions designed to specifically capture the relevant trade-off. The first is a longitudinal survey including over half a million re-

[1] Civil liberties, as defined by the International Covenant on Civil and Political Rights (United Nations, 1966a), respect individuals' right to self-determination (Article 1), free movement (Article 12), privacy (Article 17), free media (Article 20), and free assembly (Article 21).

[2] During the early stages of the COVID-19 pandemic, there was a prevalent view among public media in the US and Europe against the Chinese government's draconian response to the COVID-19 outbreak, often stating that aggressive policies such as full lockdown and travel restrictions were neither desirable nor politically feasible in liberal democracies (Markel 2020; Mahbubani 2020; Gollom 2020; Brueck et al. 2020; Feng and Cheng 2020).

sponses from about 300,000 unique respondents across 13 countries for each week during eleven months of the pandemic (March 2020 to January 2021). The second is an in-depth cross-sectional survey covering over 13,000 respondents across seven countries between late March and mid-April 2020. The two surveys are complementary. The longitudinal survey has greater "breadth" — approximately 1,000 respondents each week were included from each country, with responses collected from individuals in Australia, Canada, France, Germany, India, Italy, Japan, the Netherlands, Singapore, Spain, Sweden, the United Kingdom, and the United States. The data include sociodemographic information on age, sex, income, education, race (in the United States), political affiliation (in the United Kingdom and the United States), and self-reported behaviors and perceived risks associated with COVID-19. Importantly, they also include our core civil liberties trade-off questions, described below. The high frequency and extended time period allow us to explore the evolution of the trade-off over time and across geographies.

Our in-depth survey was fielded in seven countries (China, France, Germany, Italy, South Korea, the United Kingdom, and the United States) chosen to represent a range of systems of government from liberal democratic to autocratic, with varying levels of collectivism and at different points on the epidemic curve early on in the pandemic. We included a module on subjective beliefs about pandemic risk and pertinent medical history after collecting sociodemographic characteristics. In addition, we embedded a randomized experiment which provided information on the public health consequences of unchecked COVID-19 to half of the respondents.

One of our contributions is the real-time development of questions focused on the trade-off between civil liberties and societal well-being, deployed simultaneously across multiple countries. The questions covered own and others' rights as well as specific domains of civil liberties such as privacy, democratic procedures, free movement, and free speech. The questions were asked in two different formats. We assessed understanding and validated the content of the questions with revealed preference measures collected contemporaneously with the survey, including downloading a tracing app. In addition, we developed a cross-validation survey subsequent to our primary data collection efforts to provide further evidence on the mapping between survey response and behavior, as well as to confirm that the responses provided were not sensitive to the scale chosen in the initial analysis.

We first leverage our data to highlight key patterns across countries, across sociodemographic

groups within countries, and over time. Across all countries, at the beginning of the pandemic, on average 77% of respondents state that they are willing to sacrifice civil liberties. This percentage is highest in China (83%) and lowest in Japan (42%). Furthermore, respondents across a wide range of countries agree on the relative importance of different core civil liberties — they view respect for privacy as more important than a free press, for instance.

Turning to differences across sociodemographic groups within countries, we find that disadvantaged individuals in terms of education, income, or race (in the United States) are less willing to sacrifice rights than more advantaged counterparts. The smaller willingness of Black Americans to sacrifice their rights in exchange for improved health conditions may be surprising given the disproportionate impact of COVID-19 on communities of color, but is consistent with a longstanding struggle for equal rights and few substitute means for accessing political power (e.g., lobbying or donations) outside of exercising traditional democratic freedoms.

We next delineate the extent to which people are willing to sacrifice civil liberties in response to health insecurity. Health insecurity is defined as a concern for own or others' health, as well as concern about health care systems being strained with a pandemic surge. Descriptively, we find that individuals who are more concerned about their health or the health of their community are much more willing to sacrifice generic and specific rights as well as allow the government to infringe on the rights of others.

To identify whether the relationship between health insecurity and the willingness to sacrifice civil liberties is causal, we leverage both naturally-occurring and experimental variations. Each of these two complementary approaches suggests a robust relationship between health insecurity and the willingness to forego rights. For the former approach, we use our time-series data and variation induced by viral spread over time and across space. Specifically, we instrument for health insecurity using weekly COVID-19 mortality rates in a respondent's region, conditional on week and region fixed effects.[3] Our estimates reveal that a one standard deviation increase in health insecurity raises the willingness to sacrifice one's own rights and freedoms by a statistically significant 10.5 percentage points (pp). Results are similar for the willingness to sacrifice a free press (17.4

[3]Since higher deaths could also lead to more restrictive policies; we include a measure of time-varying policy stringency and the presence of a lockdown in the respondent's region during the week of the survey (Hale et al. 2021). In addition, we control for one-week lagged cumulative COVID-19 mortality, allowing us to isolate the burden from the current week and not additional mortality. Last, we control for demographic characteristics such as age, sex, income, and a college degree. Our results are robust to including a reduced set of controls.

pp) and weaken privacy protections (12.9 pp). Our core results are robust to including country- or individual-level fixed effects, which absorb unobservable characteristics of individuals that may confound the relationship between health security and civil liberties.

We complement the analysis that leverages naturally-occurring variation with an experiment that provides cleaner identification. The experimental intervention focused on the public health costs of letting COVID-19 spread (e.g., included photographs of overwhelmed hospitals), explaining exponential growth, and showing how social distancing and other tactics could interrupt transmission (e.g., graphics demonstrating how flattening the curve can enable a society to avoid surpassing the capacity constraints of its health care system). The information had a "first stage" effect on raising health-related insecurity, allowing us to isolate the effect of health insecurity on our outcomes of interest.[4] Using the assignment to treatment as an instrument for health insecurity, we find results consistent with those that exploit variation in COVID-19 mortality: heightened health insecurity induced by the experiment leads to a statistically significant 16 pp increase in willingness to sacrifice own rights. Leveraging the richer set of outcomes in the in-depth survey, we also find that the experiment lowers the minimum lives needed to be saved to support tracking the sick by about 11 (off of a base of 49) and by 14 (off a base of 55) for tracking everyone. Respondents in this condition are also 13.8 pp (approx. 31%) more likely to support relaxing democratic rights and procedures. Importantly, we show that the stated preferences elicited using survey questions correlate with actions. Individuals whose health insecurity was increased upon randomization into the public health treatment were 22.2 pp (approximately 47%) more willing to download a contact tracing app. Even though this reaction may have been a short-term one, there are long-term consequences from having an app monitoring movement on a personal device. In addition, in a validation survey we conduct a few months after the end of our data collection for the longitudinal survey, we find that responses to our questions correlate with signing petitions to oppose vaccine mandates and lockdowns as well as donating to privacy and free press foundations.

How do we interpret these findings? Conceptually, suppose that each person i is willing to give up civil liberty in dimension j to fight a pandemic when perceived health risk R_i crosses some

[4]One may be concerned about the experimenter demand effects. We believe these are minimal in our case because civil liberties were only discussed *after* randomization into the intervention, and the health module was asked of *both* treatment and control groups. Moreover, we obtain similar results using naturally-occurring variation, providing further evidence that the effects are not purely driven by experimenter demand or priming.

threshold of severity c_{ij}. Such threshold could differ for different types of civil liberties j: as we see in our analysis, respondents are more willing to give up certain rights over others.[5] The outcome we study is whether respondent i is willing to give up civil liberty j, i.e., $Y_{ij} = 1[R_i > c_{ij}]$. We are interested in how the share of respondents willing to give up a given civil liberty, $Pr[R_i > c_{ij}]$, is affected by health insecurity (as well as how it varies across specific groups). The finding that individuals are substantially willing to sacrifice civil liberties for improved public health conditions suggests that many citizens — even in liberal democracies — do *not* view civil liberties as "sacred values." This can occur either because of differences or changes in either perceived health risk R_i (i.e., moving along the indifference curve) or in the tolerable severity threshold c_{ij} (i.e., changed preferences and shifted indifference curve), or a mix of both. We do not attempt to disentangle these two channels, but this would be important direction for future work.

Our work contributes to understanding of people's preferences in times of crises. We complement a growing body of work showing changes in preferences due to the experiences of crises or major shocks. A series of papers study the long-run effects on preferences of growing up in a recession (Giuliano and Spilimbergo 2014), experiencing macroeconomic shocks (Malmendier and Nagel 2011), severe inequality (Roth and Wohlfart 2018), or communism (Alesina and Fuchs-Schündeln 2007). In the specific context of the COVID-19 pandemic, Rees-Jones et al. (2020) find that exposure to the pandemic leads individuals in the U.S. to view government-provided healthcare and unemployment insurance programs more favorably, whereas Marbach et al. (2020) establish a link between lockdown policies implemented from March to May 2020 in Europe and civic attitudes. Other papers demonstrate how the pandemic affected views of the incumbent or interacted with partisanship.[6] Many studies aim to identify which factors influence compliance with public health guidance.[7] Our primary goal, rather than to examine the differences in behaviors across populations, is to understand how people trade off civil liberties for public welfare as a function of perceived health insecurity, and we show that exposure to crises, such as the COVID-19 pandemic, could affect citizens' views over the fundamental rights guaranteed under a liberal

[5] We thank Chris Walters for suggesting this simple model.

[6] See Amat et al. (2020); Arceneaux et al. (2020); and Bol et al. (2020). The voters' responses to strict public health measures during COVID-19 are also reflected in differential policy choices when incumbents face re-election during the pandemic, as documented by Pulejo and Querubín (2020). Campante et al. (2020) examine how public health related fears associated with Ebola outbreaks could generate substantial political consequences in the U.S.

[7] See, among others, Allcott et al. (2020); Bargain and Aminjonov (2020); Barrios et al. (2020); Bazzi et al. (2020); Besley and Dray (2020); Bursztyn et al. (2020); Gitmez et al. (2020); and Simonov et al. (2020).

democracy. Contrary to the conventional wisdom that crises may make autocratic regimes tumble (Huntington 2009; Acemoglu and Robinson 2006), our findings suggest that crises may, in fact, strengthen such regimes as they make citizens more willing to tolerate limits on their rights and freedom.

This paper also relates to research examining the trade-off between civil liberties and other factors such as economic activity and partisanship (Acquisti et al. 2016; Graham and Svolik 2020; Svolik 2020). Similar to the work of Elias et al. (2019), we find that many people are willing to engage in trade-offs even when "sacred values" are considered. Finally, we build off research using online surveys and experiments to elicit people's attitudes and views on a range of policy and fairness issues (Charité et al. 2015; Kuziemko et al. 2015; Fisman et al. 2018; Weinzierl 2014, 2017). We are able to study a very large sample over a long period of time during an unprecedented global crisis, and use our experimental survey specifically to complement our analysis exploiting naturally-occurring variation and descriptive work.

The paper proceeds as follows. In Section II, we describe our three surveys, main outcomes, and measures of health insecurity. In Section III, we discuss descriptive evidence. We then present results from our two empirical strategies in Section IV. Finally, we conclude with a discussion on potential normative implications of our results.

II Data Collection

Our analysis relies on two main datasets. The first is from a longitudinal survey that ran weekly from March 2020 to January 2021 (the *longitudinal survey*). The second is from an in-depth survey administered between late March and mid-April 2020 (the *in-depth survey*). Together, they contain about 550,000 survey responses from 15 countries.[8]

The longitudinal and in-depth surveys complement each other and offer different features for

[8]Respondents from both are from Dynata's pools of respondents but they were sampled and conducted independently. For both surveys, the target population consists of more than 67 million potential respondents from Dynata's pool of respondents. These respondents are invited in a targeted way so as to achieve a nationally representative sample. Invitations are sent conditionally on the targeted dimensions (e.g., age, gender, income, and region of residence), but randomly within these dimensions, thus achieving randomized stratified sampling. The pool of respondents is diverse, recruited through loyalty programs (e.g., retail frequent shopper programs), partnerships with social media platforms, and a broad set of websites including schools and communities. Respondents are rewarded through points or miles (relevant to the program source in the case in which they are recruited through loyalty programs) or through reward points to redeem for cash, prizes, or gift cards.

the empirical analyses. The former is shorter but has wider geographic and temporal coverage that can be used for the identification of effects of interest. The latter focused on fewer countries and a briefer time period but allows us to ask detailed questions to understand mechanisms at play and to include an information-provision experiment for further identification. We discuss each survey in detail below.

We complement these two surveys with an incentivized experiment to show that our self-reported primary outcome measures are highly correlated with actual behavior (see Section II.C).[9]

The Longitudinal Survey Our longitudinal survey is part of a weekly, multi-country consumer sentiment survey designed and administered in response to the COVID-19 outbreak by a consumer research company, Dynata. The survey asked respondents questions related to their concerns and consumption behaviors during the pandemic. Starting on March 30, 2020, we added questions designed by us to this survey (see Section II.C).

The longitudinal survey data contains 534,657 survey responses. Each week, approximately 1,000 respondents were sampled from each of the following 13 countries: Australia, Canada, France, Germany, India, Italy, Japan, the Netherlands, Singapore, Spain, Sweden, the United Kingdom, and the United States.[10] The sample was built by Dynata's weekly consumer-trend survey infrastructure to be representative by age, sex, and region of residence (see Online Appendix Table A.1 for sample summary statistics and Appendix E for further details on the survey structure). Respondents could be sampled multiple times across different weeks; 26.9% of survey respondents were sampled at least twice. We compare the characteristics of our samples for each country to population-wide data in Appendix Table A.2. Our sample is representative along most dimensions. However, due to the online nature of the survey, very low income respondents tend to be under-represented in most countries, especially so in middle-income countries.[11] To address such under-representativeness, we re-weigh our sample to match population characteristics along the dimensions of sex, age, income, and region of residence. Our results are not meaningfully affected by this re-weighing (shown in Online Appendix Table A.3).

[9] Our analysis also includes ancillary data sources on daily COVID-19 mortality at the regional level, policy restrictions to contain COVID-19, and population statistics described in the Online Appendix Section F.

[10] The Swedish sample starts only in mid-May 2020.

[11] This is a common feature of online surveys, see Dechezleprêtre et al. (2022).

The In-depth Survey Our in-depth cross-sectional survey features a total of 13,352 respondents and was fielded between March 30 and April 18, 2020 in seven countries: China, France, Germany, Italy, South Korea, the United Kingdom, and the United States.[12] The sample was built to be representative by age, sex, income, and region of residence. The survey contained an information-provision experiment, as well as modules eliciting demographic characteristics, health-related behaviors during the COVID-19 pandemic, and outcomes. The in-depth sample characteristics are compared to population characteristics of each country in Online Appendix Table A.4 and show that our sample is, again, broadly representative along several dimensions. Similar to the longitudinal survey, very low-income respondents tend to be under-represented. Our results are not significantly affected if we re-weigh the sample to match population characteristics along the dimensions of sex, age, income, and region of residence (see Online Appendix Table A.5).

The goal of the information-provision experiment was to help a randomly-assigned subset of respondents better understand the exponential nature of disease transmission, the consequences that such exponential growth poses to a healthcare system that cannot adjust at the same rate, and the justification for policies aimed at flattening the epidemic curve. The rationale for providing such information is the well-documented finding that people tend to systematic underestimate the growth rate of exponential curves.[13] In the context of a pandemic, exponential growth bias should cause people to underestimate the threat that an exponentially-spreading disease poses to the healthcare system. Therefore, we expected the information provided in our treatment to induce the average participant to perceive higher health risk — both to herself and to others — from COVID-19.

The survey was structured as follows. After answering a set of questions about demographics and baseline health-related behaviors, participants were randomized in equal proportions into a treatment and a control group.[14] Participants assigned to the treatment group were shown screens containing the following information: (*i*) a simple graphical explanation of exponential disease

[12]The survey was translated into five different languages by native speakers. Further details on the survey sampling and recruitment can be found in Online Appendix E.

[13]Most of the findings on exponential growth bias come from the finance literature, which studies people's (mis)perceptions of exponential growth in the context of compound interest. See, for instance, Wagenaar and Sagaria (1975); Eisenstein and Hoch (2007); Stango and Zinman (2009); Almenberg and Gerdes (2012); and Levy and Tasoff (2016).

[14]Participants from China were not randomized into treatment because public health information was essentially irrelevant at the time of the survey as China had contained the COVID-19 outbreak and the new caseload remained low.

spread (see Online Appendix Figure B.1); (*ii*) a description of the threat posed by an exponentially-growing disease to a system with limited hospital capacity (see Online Appendix Figure B.2); and (*iii*) a description of how public health measures can reduce the burden on the healthcare system (see Online Appendix Figures B.3, B.4 and B.5). The full treatment script can be found in Online Appendix D.[15] Participants in the control group were not given such information.[16]

Following the treatment module, we elicited participants' perceptions of health insecurity and our primary outcome measures, described below.

II.A Measuring Health Insecurity

An important component of the study is to measure health insecurity. We take a broad approach, defining health insecurity as concerns over own or others' health due to COVID-19, as well as about their healthcare system's ability to cope with pandemic-induced strain.

As the longitudinal and in-depth surveys include separate, non-overlapping health modules (the former was designed by the consumer-research company and the latter by us), we use similar but not identical measures of health insecurity for the two surveys. In the longitudinal survey, health insecurity is measured as the average over responses to three questions asking participants how worried they were about: (*i*) their own health, (*ii*) the health of the elderly in the community, and (*iii*) the healthcare system's ability to cope with strain caused by the pandemic. In the in-depth survey, health insecurity is measured as the average level of agreement with two statements: (*i*) COVID-19 is a threat to the health and lives of people in the country, and (*ii*) the country does not have sufficient hospital capacity and medical equipment to deal with a massive virus outbreak. Despite these non-identical health insecurity measures, our results are qualitatively and quantitatively consistent, corroborating the underlying relationship between health insecurity and attitudes towards civil liberties.

Our health insecurity measure is strongly associated with self-reported disease avoidance and social distancing behaviors. As shown in Online Appendix Figure B.6, respondents who exhibit

[15] Assignment to the treatment and control conditions is balanced across demographic characteristics. Online Appendix Table A.6 presents the balance tests among respondents in the treatment and control groups. Online Appendix Table A.7 shows little attrition overall and little differential attrition across treatment arms.

[16] In an earlier version of this manuscript, we also included results from a second experiment where we emphasized the potential erosion of rights. We omit those results herein to maintain focus on the relationship between health insecurity and rights.

stronger health-related concerns are substantially more likely to wash hands frequently, avoid going to restaurants, and stay at home for work.

II.B Measuring Financial Insecurity

Although the primary goal of this paper is to investigate the relationship between *health* insecurity and willingness to trade off civil liberties for public welfare, our descriptive evidence includes a brief discussion of the relationship between financial insecurity as a point of reference; we further use financial insecurity as an additional control in our robustness checks for the causal analyses.

Our preferred measure of financial insecurity in the longitudinal survey concerns a respondent's pandemic-related worries concerning their own financial position. It is based on the response to the question: *"When thinking about COVID-19, how worried, if at all, are you personally about your household's financial position?"* As a supplementary measure of financial insecurity in the longitudinal survey, we use a respondent's worry about the economy in their country, replacing *"your household's financial position"* with *"the economy in your country"* in the question above. We use an equivalent measure of financial insecurity in the in-depth survey, given by the answer to the survey question *"How serious of a threat do you believe COVID-19 is to the economy in your country?"*[17]

II.C Outcomes

Our primary outcomes rely on survey questions that elicit respondents' views of the trade-off between civil liberties and improved public health conditions. We experimentally validate these questions, as described at the end of this section.

Our questions fall broadly into four families. One set of questions relates to willingness to give up overall rights and freedom in exchange for public welfare, one set relates specifically to the protection of privacy, one set relates to democratic rights and institutions, and one set relates to rights to movement. The questions that comprise each family can be found in Table I. The in-depth survey contains all the questions listed in the table. The longitudinal survey contains only a subset

[17]Since the longitudinal survey questions were developed by Dynata and the in-depth survey questions were developed by our research team, there is a slight discrepancy in the way the questions are asked across these surveys. For example, we did not elicit a respondent's pandemic-related worries about their own economic position in the in-depth survey. However, results are robust to various ways of defining financial insecurity in the longitudinal data (see the robustness subsection of Section V.A and associated Appendix Table A.8). We use the financial insecurity measure based on the in-depth survey solely for robustness checks related to the exclusion restriction in our instrumental variable estimation, described in Section V.B and presented in Appendix Table A.9 and Appendix Table A.10.

of the questions, as highlighted in column 6. Participants in both surveys were also asked to report on a scale from 0 to 10 the extent to which they worried that the rights and freedom forgone during the COVID-19 pandemic would not be restored after the end of the pandemic.

The questions that appear in both the longitudinal and the in-depth surveys focus on the extent to which respondents agreed with a set of statements regarding the trade-off between civil liberties and public health conditions. For instance, one of the statements reads: "I am willing to relax privacy protections and let the government access my personal data during a crisis like the current one, in order to allow the government to make timely and accurate decisions."[18] Due to strict limit in the number of questions we could add to the longitudinal survey, we randomized questions across participants. Specifically, we asked each participant in the longitudinal survey the question from row 1 of Table I, and a randomly chosen question among the ones from rows 3, 9, and 11.[19]

The in-depth survey allowed us to ask additional questions. One set of questions showed participants various possible interventions aimed at curtailing the spread of COVID-19 and asked them how effective those policies would have to be in order for them to tolerate the associated civil liberties restrictions. Specifically, for each intervention, participants reported the minimum number of lives — out of every 100 people in their country who would have otherwise died due to COVID-19 — that the policy would need to save in order for them to support it. One example question reads: "During the epidemic, the government can track smartphone locations and social contact data of the citizens who tested positive for COVID-19." Policies participants were asked to evaluate are shown in rows 4, 5, 12, 13, and 14 of Table I. For many policy domains, there are more stringent and less stringent conditions (e.g., "the government recommends citizens do not leave their homes" versus "the government arrests citizens who are outside their homes"). One might worry that the formulation of the question, which does not fix participants' beliefs about the total number of people that would have died in their country due to COVID-19 in the absence of the policy,

[18] Participants stated their levels of agreement on a scale from 0 to 10, where 0 indicates complete disagreement and 10 represents complete agreement. In our main analysis, we dichotomize these outcomes by coding values larger than 5 as 1 (i.e., willing to sacrifice) and 0 otherwise. This allows us to reduce measurement error and to interpret our treatment effects as increasing or decreasing the fraction of participants willing to give up a certain civil liberty for the sake of improved public health outcomes. Results using the original scale are provided in Online Appendix Tables A.11 and A.12.

[19] The set of statements included one additional question unrelated to civil liberties, but related to the economy, which we analyze as a secondary outcome. It reads, "I am willing to endure substantial economic losses during a crisis like the current one, in order to maintain the health and well-being of society as a whole." We report the associated results in Appendix C.

might make it hard to compare answers across people who might have different beliefs about the mortality rate of COVID-19. In our validation study discussed below, we explicitly compare two versions of the lives-saved questions: one that, as above, does not fix participants' beliefs about the total number of people that would die because of COVID-19 in the absence of the policy, and one that does. The average correlation between the answers to the two different question formulations is 0.76 (Online Appendix Table A.13).

Another set of questions that appears only in the in-depth survey was taken from the World Value Survey (WVS) and asked participants to report whether they think governance should be delegated to experts, the extent to which they believe their country needs a strong national leader, and their overall support for democratic political systems.[20] We also elicited a revealed-preference measure of privacy-related worries during the pandemic by asking participants whether they wanted to receive a link to download a contact tracing app.[21]

To mitigate concerns about multiple hypothesis testing, the analysis of the in-depth survey summarizes the outcome variables in each family into an inverse-covariance-weighted index (Anderson 2008), with variables re-oriented so they reflect attitudes and behaviors in a consistent direction.

Validation of Primary Outcomes We validated our primary outcome measures using an incentivized experiment on a separate sample. The validation study is presented in more detail in Online Appendix E.IV.

These additional data enable us to relate some of the primary outcomes from our in-depth and longitudinal surveys to incentivized decisions regarding charitable donations and policy petitions. Regarding donations, we informed respondents that a randomly selected participant would get to decide whether or not to donate $1,000 of the researchers' funds to a not-for-profit organization involved in the protection of civil liberties in the context of the COVID-19 pandemic. For each of the following not-for-profit organizations — Privacy International, Reporters Without Borders, and Freedom House — each participant had to choose whether to donate the $1,000 to the non-profit or whether to leave the funds in the research team's account. With respect to petitions, we

[20] Some of the questions regarding democracy were not asked in China because of their sensitive nature.
[21] Link to the app: https://privatekit.mit.edu/.

asked subjects whether they wanted the research team to disseminate various COVID-19-related petitions that advocate for civil liberties protections to ten people via advertisements on social media. The first petition demanded that the government not mandate vaccinations, the second demanded that the government not impose curfews during the pandemic, and the third demanded that the government not impose lockdowns during the pandemic. All three petitions were active on Change.org at the time in which respondents took the survey.[22]

We find that the answers in the self-reported questions from our in-depth and longitudinal surveys and the incentivized behaviors in charitable donation and petition choices are highly correlated (see Online Appendix Table A.14).

III Trade-offs Between Health Insecurity and Civil Liberties Across Countries and People

We begin by providing descriptive evidence on how people navigate the trade-offs between health insecurity and civil liberties. Moving from the macro- to the micro-level, we first analyze overall patterns across countries and then differences across demographic groups and individual characteristics.

III.A Distinct Levels of Trade-offs across Countries

We begin by plotting, in Figure I, the fraction of respondents by country who are willing to sacrifice civil liberties in times of crises such as the one caused by COVID-19. As a benchmark, the United States average is shown as the dashed vertical line.

We observe substantial differences across countries. In the top left panel approximately 61% of respondents in the United States are willing to sacrifice their own (general) rights during a time of major crisis. This share is substantially less than among respondents from China, where more than 80% of the respondents are willing to sacrifice their own rights and freedom. We use the U.S.-China gap as a benchmark to interpret the magnitudes presented in later sections of the paper. Relative to the United States, a larger share of respondents in the Netherlands, Germany, France, the United

[22]Change.org is a website with more than 265 million users that offers individuals the possibility to create and promote petitions (Change.org 2018). If a sufficient number of signatures is collected for a particular petition, the petition is taken to a decision-maker (e.g., a politician) in the hope of starting a discussion that might lead to policy changes.

Kingdom, Spain, Italy, India, Canada, and Australia are willing to sacrifice their own rights; and a smaller share of respondents in Sweden and Japan is willing to do so. Interestingly, we observe similar cross-country differences across the other dimensions of civil liberties that we elicit, and they appear to be ranked in a similar way across countries in terms of respondents' willingness to forego them. Many factors could contribute to the cross-country differences we observe, such as institutional characteristics (e.g., pre-crisis level of civil liberties), diverse populations and their attitudes, or respondents' differential response to the COVID-19 crisis.

III.B Patterns Within Countries

Within countries, we find a consistent and robust pattern that relative economic and social disadvantage is *negatively* associated with one's willingness to sacrifice rights. Figure II shows that individuals from less advantaged groups are *less* willing to sacrifice rights than their more advantaged peers. Those who are in the bottom 25th percentile of income are 14pp less willing to sacrifice their rights compared to those who are in the top 25th percentile of the income distribution. Respondents without a college diploma are 7pp less willing than college-educated respondents. In Online Appendix Figure B.7, we show that these findings are not driven by differences in *perceived* health insecurity, as similar results are found even when controlling for such perceptions. These patterns can be seen at different points in time of the pandemic as well. Focusing on the income dimension, Figure III shows the willingness to sacrifice rights for individuals above and below their nation's median income, conditional on age and sex for each country. Within all countries (except for Spain), lower-income individuals are substantially less willing to sacrifice their rights throughout the sampling period.

In the United States, respondents who identify as Black are 8pp less willing to sacrifice their rights than those identifying as white.[23] The notion that Black Americans are reluctant to sacrifice rights is consistent with their long struggle for such freedoms and an intuitive understanding of the dangers of foregoing civil liberties.[24] Furthermore, the gap between Black and white respon-

[23]We find a consistent Black-white gap in the outcomes associated with civil liberties that have arguably more vs. less economic impact: privacy infringement and movement restrictions. Online Appendix Table A.15 demonstrates that Black respondents, as compared to white respondents, are about 20% less willing to relax privacy protections, and are willing to accept about 11% more deaths to avoid tracking of COVID-19-infected people (Panel A). We observe larger racial gap in responses to movement restrictions, but the pattern continues to hold (Panel B). Racial gap is no longer observed for more extreme policies (i.e., tracking everyone and arresting people who are outside the home).

[24]Indeed, a historiography documents how Black Americans have served as a "canary in the coal mine" for potential

dents' willingness to forgo rights is higher when health insecurity is higher (see Online Appendix Figure B.8).

Political attributes also affect respondents' attitudes over the extent to which they are willing to sacrifice their rights, but in a more subtle manner (Rawls and Duck 2020). Respondents who have the same party affiliation as the party in power (left- *or* right-leaning) are 4 pp more willing to sacrifice their rights, suggesting that political trust plays a role in shaping such attitudes. Those who mistrust the media, on the contrary, are 5 pp less willing to give up rights. In the U.S., Democrats are much more willing to give up rights, at any level of health insecurity (see Online Appendix Figure B.8), but the partisan divide narrows as health insecurity levels increase.

We further find that within countries with strong existing civil liberties protections, the tendency to hold onto rights such as privacy protection is *stronger* among those individuals who have past exposure to regimes with limited freedom and rights. Among respondents from South Korea, those with exposure to the North Korean regime, as measured by having migrated from North Korea during the Korean War (1950-1953) or having a close family member who did, are substantially less willing to sacrifice their rights (see Figure II). Among German respondents, those born in the former East German regime become less willing to sacrifice rights over the course of the pandemic as compared to their West German counterparts (see Online Appendix Figure B.9).[25]

III.C Health Insecurity and Attitudes Towards Civil Liberties

The COVID-19 pandemic precipitated an economic as well as a health crisis. We investigate correlations in our longitudinal sample between health and economic worries and the willingness to trade-off civil liberties in Figure IV.[26]

As far as health insecurity is concerned, we observe a clear pattern: higher levels of health insecurity are strongly associated with a *greater* willingness to curtail civil liberties. On average, a

threats to U.S. democratic institutions (Guinier et al. 2009). We thank Cornell Brooks for the reference and comments.

[25]These findings corroborate existing evidence that shows that more general preferences for democracy are influenced by the length of time spent under democracy, such as Fuchs-Schündeln and Schündeln (2015). However, contrary to this existing work, which finds that within a country, the longer an individual has lived under a democratic system, the *stronger* the support for democracy, our findings suggest that in times of a major crisis, those individuals who have previously lived in regimes with fewer civil liberties tend to be *more reluctant* to curtail civil liberties. Relatedly, Schmelz (2021) finds that support for COVID-19 containment measures related to civil liberties (such as contract tracing/reduced privacy and restricted freedom of movement) drops less among individuals who lived in the former GDR compared to those who did not.

[26]Online Appendix Figure B.8 shows the heterogeneity by income, education, gender, race, and political affiliation in the willingness to give up rights for different terciles of the health insecurity and financial insecurity distribution.

one sd unit increase in one's health-related concerns is associated with approximately a half sd unit increase in one's willingness to sacrifice own rights, suspend democratic procedures, and forego other liberties to combat the crisis. The positive association holds virtually across all countries in the sample (see Online Appendix Figure B.10), despite the aforementioned differences in overall levels that we observe across countries.

The association between financial insecurity and one's willingness to trade-off civil liberties is more muted. Consistent with the idea that economically and socially disadvantaged individuals are less willing to sacrifice civil liberties, we find a small negative correlation between financial insecurity and willingness to trade off civil liberties for public welfare.

Moreover, we leverage our long pandemic time-series to describe the evolution of the relationship between the willingness to trade off civil liberties, health insecurity, and financial insecurity over ten consecutive months of the pandemic. Figure V plots regression coefficients on health insecurity (in red) and financial insecurity (in blue) obtained from a regression of the willingness to sacrifice rights by country and week conditional on sex and age group indicator variables. Citizens around the world became less willing to sacrifice rights and freedoms from March until mid-June 2020 as lockdowns and other policies were adopted, cases dropped, and concerns about health also fell (see Online Appendix Figure B.11 of the evolution of rights by week).[27] By mid-June 2020, respondents' willingness to sacrifice rights had diminished by as much as 20% of one sd unit relative to the end of March. Despite these shifts, the *relationship* between the willingness to trade off civil liberties and health insecurity remained positive and appeared relatively constant over time, while the willingness to trade off civil liberties and financial insecurity continued to have a slightly negative or null relationship. A one sd increase in health insecurity is associated with a 11.1 pp (p-value $<.001$) increase in willingness to sacrifice own rights when averaging across all countries. Such increase ranges from 4.4 pp in Singapore to 15.3 pp in the United States.

Taken together, the findings above suggest that willingness to give up civil liberties for public welfare is strongly associated with health insecurity. Although the level of health concern fluctuated with the disease burden throughout the pandemic, this relationship is fairly stable over nearly a year of observations and across many countries. We next investigate whether this relationship is

[27]The length of pandemic also exceeded initial expectations (see Online Appendix Figure B.12 for revisions of the forecast length).

causal.

IV Empirical Strategies

As shown above, health insecurity stood out as a key predictor of willingness to give up rights. In this section, we lay out two approaches to examine whether this relationship is causal and quantify the trade-off between health insecurity and willingness to sacrifice civil liberties. The two strategies are complementary in that the first has a better claim to external validity, and the second has a better claim to clean identification. The first strategy, based on data from our longitudinal survey, exploits geographic and temporal variation in local COVID-19 mortality spikes as shifters of health insecurity; the second strategy, based on our in-depth survey, exploits experimentally-induced variation in perceptions of health insecurity.

IV.A Using COVID-19 Mortality Fluctuations

In our first approach, we instrument for health insecurity using short-term fluctuations in local COVID-19 mortality. The underlying intuition is that local surges in COVID-19 mortality make salient the health risks associated with the disease and thus provide a shifter of individuals' perceived health insecurity in a manner similar to our information treatment. The identifying assumption is that conditional on a key set of controls, fluctuations in local, weekly COVID-19 mortality rates are not systematically correlated with other factors hypothesized to influence the willingness to give up civil liberties. In particular, we condition on local COVID-19 cumulative mortality, variation in policies to combat the disease, and views of government effectiveness. Possible issues with this strategy include the presence of other shocks afflicting these areas at the same times and in the same "direction" and the existence of other pathways through which mortality can affect views on civil freedoms. We address both of these concerns in the robustness section below and also focus on the reduced form in this section.

As a baseline, we estimate the following model using two-stage least-squares:

$$Y_{ik} = \alpha_{j(ik)} + \alpha_{t(ik)} + \gamma_0 \cdot \text{Health insecurity}_{ik} + X'_{ikj(ik)t(ik)}\Omega_0 + \epsilon_{ik} \quad (1)$$

$$\text{Health insecurity}_{ik} = \alpha_{j(ik)} + \alpha_{t(ik)} + \gamma_1 \cdot \text{COVID-19 incidence}_{j(ik)t(ik)} + X'_{ikj(ik)t(ik)}\Omega_1 + \kappa_{ik}, \quad (2)$$

where Y_{ik} denotes one of our outcomes of interest, i denotes a survey respondent, and k indexes i's survey response in the case participant i was sampled multiple times in the longitudinal survey. Our instrument, *COVID-19 incidence*$_{jt}$, denotes the log of 1000 $\times$ number of COVID-19 deaths in the respondent's region j and the week t divided by the population of the region. Region is defined by administrative division at the first sub-national level — the finest level of geography available for each respondent. Administrative division level one geography corresponds, for example, to states in the United States (51) and Germany (16), and to regions in Italy (20) and France (13). Fixed effects for regions (α_j) and week (α_t) capture overall differences in attitudes across regions and overall time trends respectively, thereby allowing our instrument to exploit short-term variation in disease severity at the local level. *Health insecurity*$_{ik}$ is defined as in subsection II.A.

Besides a constant and indicators for sex, age group, education (indicator for holding a college degree), and income quartile (relative to the respondent's country), we control for a set of key variables in X. These controls includes proxies for public health policy response available at the country-date level (Hale et al. 2021).[28] In addition, we add whether the respondent's region was in a lockdown during the week of the survey.[29] We also condition on the (log) cumulative prevalence of COVID-19 mortality lagged by one week.[30] The policy and lockdown variables capture potential endogeneity of deaths to stringency, which could itself influence attitudes. Cumulative mortality captures local disease severity from the beginning of the pandemic and its attendant effects on local living conditions. X also includes perceived government effectiveness (i.e., the belief that *"the government is taking proper steps to protect the population*"). Standard errors are clustered at the administrative division level one.

[28]Stringency is a composite of nine policies including school closures, workplace closures, and travel bans. We construct a three-week moving average at the country-week level.

[29]This variable is generally subnational except for four countries where policies tended to be federal.

[30]Deaths are used as opposed to cases since they tend to be reported more consistently. We show robustness to using ventiles in Online Appendix.

Unobserved individual characteristics correlated with health insecurity may affect attitudes. We take advantage of the panel component of the survey — approximately 83,000 respondents participate in multiple survey waves over the sampling period — and replace regional with individual fixed effects in Equation 1 in a robustness exercise. We also show various robustness checks that address additional threats to our identifying assumptions in subsection V.A.

First Stage Table II shows that our instrument has a strong first stage: local COVID-19 mortality significantly affects our health insecurity measure (column (1)), as well as each of its individual components (columns (2), (3) and(4)), in the expected direction. The Kleibergen-Paap F-statistic on our main health-insecurity measure is 117.45.

IV.B Using Variation Induced by the Information Experiment

In our experimental approach, we instrument for health insecurity using random assignment to the information treatment in our in-depth survey. Random assignment to treatment circumvents endogeneity concerns; the targeted nature of the information disseminated in the treatment mitigates concerns about exclusion-restriction violations.

We estimate the following model using two-stage least-squares:

$$Y_i = \alpha_{c(i)} + \alpha_{w(i)} + \alpha_{h(i)} + \gamma_2 \cdot \text{Health insecurity}_i + X'_{ic(i)h(i)w(i)}\Omega_2 + \nu_i \quad (3)$$

$$\text{Health insecurity}_i = \alpha_{c(i)} + \alpha_{w(i)} + \alpha_{h(i)} + \theta \cdot T_i + X'_{ic(i)h(i)w(i)}\Omega_3 + \mu_i \quad (4)$$

where Y_i represents an outcome for individual i, α_c indicates country fixed-effects, α_w indicates week fixed-effects, and α_h indicates a fixed-effect for the variable along which we stratified our randomization (based on whether a participant in the in-depth survey resided in a region that, by March 2020, had experienced many COVID-19 cases ("hotspot region")). T_i is an indicator for assignment to the information treatment. *Health insecurity*$_i$ is defined in subsection II.A.

We also control for a limited set of demographic characteristics such as sex, age, income, education, and pre-existing medical conditions. Lastly, we control for possible alternative pathways through which the information treatment may influence the outcomes of interest, including con-

cerns about surveillance and worries over the pandemic-related recession.[31]

First Stage As shown in Table III, our experimental treatment has a strong first stage: the public health treatment significantly affects our health insecurity measure (column (1)), as well as each of its individual components (columns (2) and (3)), in the expected direction. The Kleibergen-Paap F statistic on our main health-insecurity measure is 56.12.[32]

V Results

V.A Results Using Variation in COVID-19 Mortality

Our results from leveraging short-term fluctuations in local COVID-19 mortality to instrument for health insecurity, based on Equation 1 and Equation 2, are presented in Table IV. As a benchmark, we report simple OLS results in Panel A. Panel B presents the reduced form results using our instrument — contemporaneous local COVID-19 mortality — as the right hand side variable, and Panel C reports the associated 2SLS estimates.

We find a positive, sizeable impact of health insecurity on the willingness to give up civil liberties, a finding that holds across all dimensions of civil liberties elicited. The largest impact is observed in the dimension of suspending democratic procedures — a one sd unit increase in health insecurity leads to a 22.9 pp increase in the willingness to suspend democratic procedures. In contrast, we observe an effect only about half the size on willingness to relax privacy and on sacrificing one's own rights (12.9 pp and 10.5 pp, respectively). The 2SLS estimates are somewhat larger than the OLS estimates in Panel A. Online Appendix Table A.3 shows our results based on Equation 1 and Equation 2 with nationally representative sampling weights. We observe a similar magnitude of the impact of health insecurity on the willingness to give up civil liberties, although F-statistics are somewhat reduced and significance on willingness to sacrifice free press is lost.

Online Appendix Table A.16 explores heterogeneity across sociodemographic factors. We interact perceived health insecurity with the full set of sociodemographic factors and instrument

[31] Concerns about surveillance refer to the respondent's level of worries about information collected by the government to fight COVID-19 could be stored and used for other reasons later on a scale of 1 (strongly unconcerned) to 5 (strongly concerned).

[32] Online Appendix Table A.17 shows the first-stage results by different demographic groups or country. We consistently find positive and significant first stage results, indicating that our public health treatment caused respondents in all subgroups and countries to perceive higher health risk, on average.

for both using COVID-19 incidence and its interaction with each given factor; thus, the estimated health insecurities are allowed to vary by the sociodemographic factors that we focus on. The "interaction" F-statistic is weaker than that shown in Table II, but a few patterns can be discerned. Consistent with the descriptive analysis using the in-depth sample (shown in Figure II), we again observe that respondents without a college degree and with low incomes are less willing to give up rights (the main effects for these two factors are negative). The interaction coefficients also reveal men are relatively less willing to sacrifice liberties in response to health concerns than women. By contrast, those without a college degree tend to move towards the college educated in the setting of increased health insecurity, and lower income respondents tend to converge to higher income ones when health insecurity is increased. These findings echo the descriptive patterns in Online Appendix Figure B.8, which highlight differential convergences and divergences across social groups as health insecurity increases.

Identification and Robustness Checks — We next turn to providing explanation for and evidence on the validity of our weekly COVID-19 mortality instrument for health insecurity. First, we document that these short-term fluctuations, conditional on cumulative COVID-19 mortality, time, geography, and policy environment, are not systematically correlated with other sociodemographic factors such as age, sex, income, and political leaning, and only slightly with holding a college diploma (see Online Appendix Table A.6). This set of sociodemographic variables previously showed a strong relationship to the willingness to forego civil liberties in Figure II.

Second, we investigate two alternative pathways between current COVID-19 mortality rates and civil liberties: economic insecurity and government competence in the crisis response. Positive mortality fluctuations may lead citizens to update negatively on the government's effectiveness at protecting the population and dampen their willingness to cede more power to the government. If so, we would observe a negative relationship between deaths, government effectiveness, and civil liberties. Similarly, if deaths increase economic insecurity, then those who are more financially insecure would be less willing to give up rights, based on our findings detailed in the descriptive analysis. Both alternative pathways could bias our results towards the null. In Online Appendix Table A.8, we indeed show that instrumenting for *either* of these alternative pathways with current deaths conditional on health insecurity produces small, generally statistically insignificant

and mainly negative second stage results (Panels A-C). Similarly, adding a control for financial insecurity to our baseline specification does not alter our results (Panel D).

Third, there may still be other possible pathways that we cannot adequately interrogate with specific survey-based measures, such as psychic effects of depression or anxiety when death rates spike. However, these alternative factors would have to co-move systematically with the short-run fluctuations in local death rates, conditional on cumulative deaths and other detailed controls. In addition to the checks above, we also include individual fixed effects in another robustness test. This test broadly addresses concerns about unobservable individual-level heterogeneity, such as certain individuals being more predisposed to particular reactions. We run this specification for the "sacrifice own rights and freedoms" outcome only, as this question was asked to all respondents in our longitudinal survey and is thus the only outcome sufficiently powered to include individual fixed effects. The reduced form and 2SLS coefficients are of similar magnitude as in the baseline specification for the willingness to sacrifice own rights (column (1) of Online Appendix Table A.18). Furthermore, the exercise presented in this section is complementary to the experimental identification strategy for which we present results next, providing additional assurance on the mechanism.

We further assessed robustness of our results by including country instead of region fixed effects, employing mortality ventiles as an instrument, using continuous instead of binary outcomes, and executing a Fisher-type permutation test reshuffling the exposure variable. Our results remain largely unchanged across all these robustness checks. Results with country instead of region fixed effects are reported in Online Appendix Table A.18. Relative to the baseline specification, standard errors increase slightly but magnitudes remain similar. We also present results using a *reduced* set of controls in Online Appendix Table A.19, and our baseline results are largely unchanged. Online Appendix Table A.20 presents results using COVID-19 mortality ventiles instead of log mortality as the instrument, and results using the original continuous instead of recoded binary outcomes are reported in Online Appendix Table A.11.[33] Findings remain robust to using the alternative instrument and qualitatively unchanged when continuous outcomes are used. Results from the Fisher-type permutation test, which reshuffles the COVID-19 incidence instrument 1,000 times in

[33]Results using inverse hyperbolic sine, log (x+.01) or log(x+.001) transformations, or adding 1 to the integer number of deaths in the numerator are very similar.

the longitudinal sample and computes reduced form estimates, can be found in Online Appendix Figure B.13. Our baseline reduced form estimates exceed the permuted ones for all outcomes.

V.B Experimental Results

We report results from our experiment-based instrumental variable approach in Table V. Columns (2) and (3) display OLS estimates and standard errors, and columns (4) and (5) report their 2SLS counterparts. We report results for four separate outcome families related to civil liberties (described in Section II.C), organized into separate panels. The last row of each panel is the standardized inverse-covariance-weighted index (i.e., z-score index) for a given outcome family (Anderson 2008).[34]

Focusing first on the z-score indices as our main outcomes of interest, we document large effects of health insecurity on the willingness to curtail civil liberties. A one sd unit increase in health insecurity increases the willingness to curtail democratic rights and institutions by 0.65 sd units. The effect size of health insecurity on the willingness to sacrifice privacy is 0.65 sd units, and for the willingness to sacrifice overall rights and freedoms is 0.35 sd units. To put these magnitudes into perspective, the point estimates amount to about 76% of the baseline average gap in attitudes between Chinese and American respondents.[35] Only the willingness to give up mobility is unaffected by a respondent's perceived health insecurity; for this outcome, we estimate an imprecise zero.

Across a host of outcomes, we find a relatively sizeable OLS-IV gap. For the privacy z-score outcome, for example, the IV estimate is 7$\times$ larger than its OLS counterpart. This gap is consistent with measurement error in our health insecurity measure, downward bias in the OLS estimates, or a LATE versus ATE difference, in the latter case if the compliers in our experiment are individuals who exhibit larger treatment effects of health risk on attitudes compared to the average respondent in the survey.

We next proceed to examine each outcome family in more detail. In terms of overall rights, our 2SLS estimates indicate that greater health insecurity induced participants to report higher willingness to sacrifice their own rights for improved public health conditions. We also find positive

[34] Reduced form estimates are reported in Online Appendix Table A.21.

[35] The number is obtained by first dividing the 2SLS estimates for the two z-score outcomes listed in Panels A and B of Table V by the respective China-U.S. gap listed in column (7), and then averaging across the two resulting values.

but more imprecise effects on willingness to sacrifice the rights of others.

Regarding privacy, our 2SLS estimates imply that a one sd increase in health insecurity raised the average participant's willingness to relax privacy protections by 20.3 pp (or 35%). The treatment also lowered the number of lives that tracking and contact-tracing policies would need to save in order for the average participant to support them. The effect is particularly stark for a contact-tracing policy that tracks the movements of both infected and non-infected people (14 lives off a base of 55 lives). Finally, greater health insecurity increased the average participant's willingness to receive a link to download a contact-tracing app by 22.2 pp (or 47%).

Turning to civil liberties related to democratic rights and institutions, we find that a one sd increase in health insecurity induced by the experiment led individuals to report preferring strong leaders (effect size of approximately 25% of baseline value), preferring delegating governance to experts (approx. 26%) and being willing to suspend democratic procedures during a crisis such as the one caused by COVID-19 (approx. 31%). Note that the OLS coefficient estimates point in the opposite direction relative to the IV coefficients for four out of the six outcomes in this family. This pattern is consistent with selection in the OLS by which individuals with larger health insecurities (that is, individuals who perceive a larger own and public health threat from the pandemic) tend to be types who care more about maintaining democratic procedures and other such liberties.

Secondary Outcomes — In Online Appendix Table A.22, we report results for secondary outcomes not directly related to civil liberties, in the form of willingness to endure business and school closures, economic harm, and other restrictive containment strategies. Only the willingness to harm the economy is significantly affected by health insecurity, with a relatively large magnitude of 0.364 sd units. See Appendix C for a more detailed description of these results.

Robustness Checks for the Experimental Approach — We conduct a number of robustness checks on the experimental empirical strategy. First, we again re-weight our sample to make it representative with each country's population (Online Appendix Table A.5). Our results overall remain qualitatively and quantitatively unchanged, although power is somewhat reduced.

Second, we address potential exclusion-restriction violations. One may be concerned that the information treatment may affect outcomes through channels other than health insecurity. As

shown in columns (1) through (3) of Online Appendix Table A.9, being assigned to the treatment group modestly increased the extent to which participants worried about the economy and about possible long-term abuses of the private information shared during the pandemic (with magnitudes for both much smaller in size than those of the effects on health-related worries). While it is impossible to prove that the exclusion restriction holds, columns (4) through (6) should help assuage concerns. The effect of being assigned to the treatment group on health insecurities is still present when controlling for the worries about the economy and about possible future abuses of the information shared during the pandemic (Panel A). Conversely, after controlling for health insecurities — namely COVID-19 posing a threat to people's health and to the capacity of the healthcare system — effects on the non-health-related worries become smaller and insignificant (Panel B). These findings suggest either that treatment effects on worries related to the economy or to long-term privacy abuses operate through health insecurity (thus making such worries a "bad control"), or that they are not quantitatively important once we account for health insecurity concerns (Angrist and Pischke 2008).[36]

Comparing Results Between the Empirical Strategies — A comparison of results for outcome variables included in both the longitudinal and in-depth surveys — and thus identifiable by both the COVID-19 mortality variation and experimental variation empirical strategies — reveals broad similarities.

A one sd unit increase in health insecurity results in similar effects on respondent willingness to sacrifice press freedoms (21.1 pp in the in-depth survey using the experimental variation approach versus 17.4 pp in the longitudinal survey using the mortality variation approach). For the outcome of respondent willingness to suspend democratic procedures, the experimental variation approach with the in-depth survey shows a 13.8 pp effect size, compared to a 22.9 pp effect size using the mortality variation approach with the longitudinal survey. Regarding willingness to weaken privacy protections, the in-depth survey results show a 20.3 pp effect from increasing health insecurity by one sd unit, compared to a 12.9 pp effect seen in the longitudinal survey. Finally, for the willingness to give up one's own rights and freedoms, results from the in-depth survey indicate a 16

[36]For completeness, we report results from our baseline 2SLS specification amended with additional controls for financial insecurity and worries about post-pandemic surveillance in Appendix Table A.10. Magnitudes and statistical significance levels remain essentially unchanged.

pp effect, compared to an 10.5 pp effect in the longitudinal survey.

On average, across all four outcomes, estimates using COVID-19 mortality variation are about 1.9 pp smaller than the estimates found using experimental variation. That we find qualitatively and on average quantitatively similar results from both samples and empirical approaches suggests that the underlying relationship between health insecurities and willingness to give up rights is a relatively robust and general pattern.

VI Conclusion

Civil liberties, including the protection of privacy, freedom of speech, and freedom of mobility, are the basis of well-functioning liberal democracies. Major crises confront societies and their citizens with a set of fundamental trade-offs between social well-being during times of crisis and the protection of liberties.

In this paper, we study how citizens around the world trade off health security and civil liberties throughout one of the most challenging crises in recent history, the COVID-19 pandemic. Motivated by the descriptive patterns across countries and across respondents within countries and over time, we deploy two empirical strategies to estimate the effect of health insecurity on the willingness to give up civil liberties. We find that exposure to health risks during the pandemic leads to a greater willingness to sacrifice rights and freedoms.

Our results are positive and do not study the normative implications of crisis responses. This is a thorny issue, but our findings point to two possible lessons for policy. First, the effects of our public health treatment that explains the rationale between various measures increase support for individual and public action to curb the pandemic, even if these involve giving up some individual rights. This finding points to giving citizens tools to understand the need for policy intervention. Improved understanding can increase compliance with otherwise hard-to-tolerate policy measures. Special attention and care may be needed when messaging to groups that are socially disadvantaged, as members of these groups were found to be less willing to tolerate restrictions in response to heightened health risk.

Second, for the sake of public health and safety in a crisis such as a pandemic, immediate policy responses that often involve curtailing individual liberties are needed. Yet, our dynamic results —

in particular the fact that willingness to sacrifice rights declines as health worries decrease — also point to the need for safeguards that ensure these restrictions are lifted once the crisis subsides.

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Main Tables

Table I: Main outcomes from the longitudinal and in-depth surveys

Row (1)	Outcome Family (2)	Outcome Name (3)	Question Wording (4)	Scale (5)	Outcome Reoriented When Constructing Index (6)	Survey (7)
1	Overall rights and freedom	Willing to sacrifice own rights	To what extent do you agree with the following statement: I am willing to sacrifice my own rights and freedoms during a crisis like the current one, in order to maintain the health and well-being of the whole society.	0 (completely disagree) to 10 (completely agree)	No	Longitudinal and In-depth surveys
2		Willing to sacrifice others' rights	To what extent do you agree with the following statement: I am willing to impose strict limits to the rights and freedom of other people during a crisis like the current one, in order to maintain the health and well-being of the whole society.	0 (completely disagree) to 10 (completely agree)	No	Longitudinal and In-depth surveys
3	Protection of privacy	Willing to relax privacy protections	To what extent do you agree with the following statement: I am willing to relax privacy protections and let the government access my personal data during a crisis like the current one, in order to allow the government to make timely and accurate decisions.	0 (completely disagree) to 10 (completely agree)	No	Longitudinal and In-depth surveys
4		Unwilling to accept: track sick people	What's the minimum number of people [out of every 100 people who would have otherwise died in your country because of the COVID-19 pandemic] that each of the following policies would need to save in order for you to support it? "During the epidemic, the government can track smartphone locations and social contact data of the citizens who tested positive for COVID-19."	0 to 100	Yes	In-depth survey only
5		Unwilling to accept: track everyone	What's the minimum number of people [out of every 100 people who would have otherwise died in your country because of the COVID-19 pandemic] that each of the following policies would need to save in order for you to support it? "During the epidemic, the government can track smartphone location and social contact data of all citizens."	0 to 100	Yes	In-depth survey only
6		Contact tracing app	Recently, several apps have been developed that help track who has been infected with COVID-19, and that help contact those who have been in close contact with infected individuals. The Massachusetts Institute of Technology (MIT) has developed such an app. Are you interested in finding out more about it?	Binary	No	In-depth survey only

Table I: Main outcomes from the longitudinal and in-depth surveys (cont'd)

Row (1)	Outcome Family (2)	Outcome Name (3)	Question Wording (4)	Scale (5)	Outcome Reoriented When Constructing Index (6)	Survey (7)
7	Democratic rights and institutions	Prefer strong leader	Would you say it is a very good, fairly good, fairly bad or very bad way of governing the [R's country]?: Having a strong national leader who does not have to bother with Congress and elections	1 (very bad) to 4 (very good)	No	In-depth survey only
8		Prefer delegating to experts	Would you say it is a very good, fairly good, fairly bad or very bad way of governing the [R's country]?: Having experts, not the government, make decisions according to what they think is best for the country	1 (very bad) to 4 (very good)	No	In-depth survey only
9		Willing to sacrifice free press	To what extent do you agree with the following statement: I am willing to support the government controlling the media during a crisis like the current one, in order to ensure effective and uniform communication between the government and citizens.	0 (completely disagree) to 10 (completely agree)	No	Longitudinal and In-depth surveys
10		Preference for democratic system	Would you say it is a very good, fairly good, fairly bad or very bad way of governing the [R's country]?: Having a democratic political system	1 (very bad) to 4 (very good)	Yes	In-depth survey only
11		Willing to suspend democr. procedures	To what extent do you agree with the following statement: I am willing to suspend democratic procedures and give the President [or Prime Minister] more power during a crisis like the current one, in order to ensure swift government actions.	0 (completely disagree) to 10 (completely agree)	No	Longitudinal and In-depth surveys
12	Rights to movement	Unwilling to accept: close national border	What's the minimum number of people [out of every 100 people who would have otherwise died in your country because of the COVID-19 pandemic] that each of the following policies would need to save in order for you to support it? "During the epidemic, the government closes the national border to prevent foreigners from entering."	0 to 100	Yes	In-depth survey only
13		Unwilling to accept: recommend stay home	What's the minimum number of people [out of every 100 people who would have otherwise died in your country because of the COVID-19 pandemic] that each of the following policies would need to save in order for you to support it? "During the epidemic, the government recommends citizens do not leave their homes except for limited, permitted reasons."	0 to 100	Yes	In-depth survey only
14		Unwilling to accept: arrest if outside home	What's the minimum number of people [out of every 100 people who would have otherwise died in your country because of the COVID-19 pandemic] that each of the following policies would need to save in order for you to support it? "During the epidemic, the government arrests citizens who are outside their home if they do not have government permission."	0 to 100	Yes	In-depth survey only

Table II: First stage results using COVID-19 mortality fluctuations (longitudinal survey)

	Health Insecurity (1)	Health of the Elderly (2)	Personal Health (3)	Healthcare Capacity (4)
COVID-19 Incidence	0.073***	0.057***	0.038***	0.088***
	(0.007)	(0.005)	(0.005)	(0.009)
Kleibergen-Paap F-statistic	117.451	110.641	50.633	96.762
Mean of Outcome	0.000	0.000	0.000	0.000
Number of Clusters	197	197	197	197
Observations	364735	358735	361146	361533
Controls:				
Demographics	Yes	Yes	Yes	Yes
Government Effectiveness	Yes	Yes	Yes	Yes
Policy Response	Yes	Yes	Yes	Yes
Lagged COVID-19 Prevalence	Yes	Yes	Yes	Yes
Week Fixed Effects	Yes	Yes	Yes	Yes
Admin Level 1 Fixed Effects	Yes	Yes	Yes	Yes

Notes: Table reports results from estimating Equation 2. Outcome variables are listed in the column headings and are originally on a scale of 1 (not at all worried) to 5 (extremely worried). Health insecurity is an average of three outcome variables in columns (2) to (4). Health of the elderly refers to concerns about the health of the elderly. Personal health refers to concerns about own personal health. Healthcare capacity refers to concerns about healthcare systems being able to cope. The outcome variables and COVID-19 incidence are standardized to mean 0 and sd 1. All regressions include controls for demographics (sex, age group indicators, education (indicator for holding a college degree), and income quartiles (relative to own country)), proxies for public health policy response (three-week moving average of a stringency index and the presence of a lockdown in the respondent's region during the week of the survey), the (log) cumulative prevalence of COVID-19 mortality lagged by one week, survey weeks, administrative division level 1 fixed effects, and government effectiveness (i.e., belief that the government is taking proper steps to protect its population). Kleibergen Paap F-statistics presented are obtained from the sample estimated on the outcome of willingness to sacrifice own rights. Standard errors clustered at the administrative division level 1 are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table III: First stage results using experimental variation
(in-depth survey)

	Health Insecurity (1)	Threat to People's Health (2)	Healthcare Capacity (3)
Public Health Treatment	0.128***	0.076***	0.133***
	(0.017)	(0.019)	(0.016)
Kleibergen-Paap F-statistic	56.124	16.405	66.964
Mean of Outcome	-0.203	-0.106	-0.225
Observations	13337	13337	13337
Controls:			
Demographics	Yes	Yes	Yes
Strata Fixed Effects	Yes	Yes	Yes
Concerns about Surveillance	Yes	Yes	Yes
Strata Fixed Effects	Yes	Yes	Yes
Survey Week Fixed Effects	Yes	Yes	Yes

Notes: Table reports results from estimating Equation 4 using experimental variation. Health insecurity refers to an average of "threat to people's health" and "healthcare capacity"; threat to people's health measures a level of agreement on a statement that COVID-19 is a threat to the health and lives of people in the country on a scale of 1 (not a serious threat) to 4 (A very serious threat); healthcare capacity measures a level of agreement on that the R's country does not have sufficient hospital capacity and medical equipment to deal with the COVID-19 outbreak on a scale of 1 (strongly disagree) to 5 (strongly agree). The outcome variables are standardized to mean 0 and sd 1. All regressions include the following controls: demographics (sex, age group indicators, education (indicator for holding a college degree), income quartiles (relative to own country), and an indicator for any medical conditions); concerns about surveillance (i.e., worries about information collected by the government to fight COVID-19 could be stored and used for other reasons later on a scale of 1 (strongly unconcerned) to 5 (strongly concerned)); strata fixed effects (country and hotspot); and survey week fixed effects. Kleibergen Paap F-statistics presented are obtained from the sample estimated on the outcome of willingness to sacrifice own rights. Unconditional mean of the outcome variable of respondents in the control group is presented. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table IV: OLS and 2SLS results using COVID-19 mortality fluctuations
(longitudinal survey)

	Sacrifice Own Rights	Sacrifice Free Press	Relax Privacy Protections	Suspend Demo. Proce.
	(1)	(2)	(3)	(4)
PANEL A: OLS estimates				
Health Insecurity	0.083***	0.061***	0.066***	0.061***
	(0.003)	(0.003)	(0.003)	(0.003)
PANEL B: Reduced form				
COVID-19 Incidence	0.008***	0.013***	0.010***	0.019***
	(0.002)	(0.003)	(0.003)	(0.004)
PANEL C: 2SLS estimates				
Health Insecurity	0.105***	0.174***	0.129***	0.229***
	(0.023)	(0.052)	(0.041)	(0.046)
Kleibergen-Paap F-statistic	117.451	53.116	67.071	110.548
Mean of Outcome	0.748	0.614	0.573	0.574
Number of Clusters	197	195	194	195
Observations	364735	72929	72892	72901
Controls:				
Demographics	Yes	Yes	Yes	Yes
Government Effectiveness	Yes	Yes	Yes	Yes
Policy Response	Yes	Yes	Yes	Yes
Lagged COVID-19 Prevalence	Yes	Yes	Yes	Yes
Week Fixed Effects	Yes	Yes	Yes	Yes
Admin Level 1 Fixed Effects	Yes	Yes	Yes	Yes

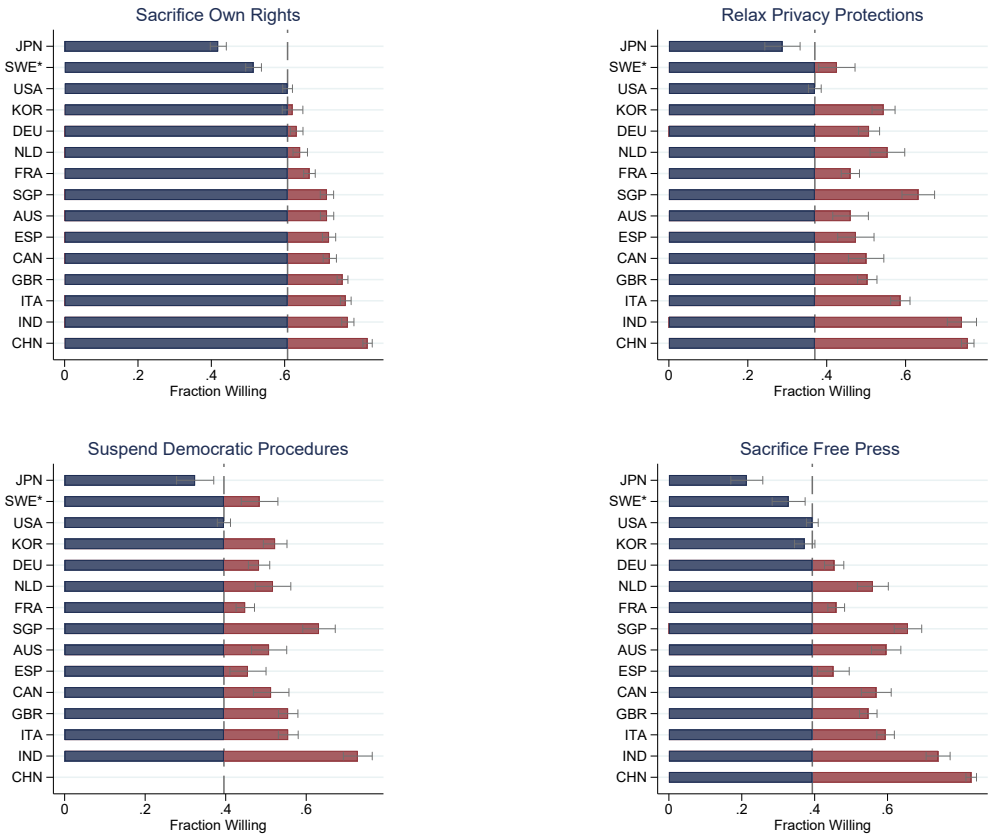
Notes: Table reports estimates of the 2SLS model given by Equation 1 and Equation 2, as well as corresponding OLS estimates. Outcome variables are listed in the column headings and described in Section II.C. Health insecurity is an average of three concerns: personal health, the health of the elderly, and the health care system being unable to cope. The health insecurity and COVID-19 incidence are standardized to mean 0 and sd 1. All regressions include controls for demographics (sex, age group indicators, education (indicator for holding a college degree), and income quartiles (relative to own country)), proxies for public health policy response (three-week moving average of a stringency index and the presence of a lockdown in the respondent's region during the week of the survey), the (log) cumulative prevalence of COVID-19 mortality lagged by one week, survey weeks, administrative division level 1 fixed effects, and government effectiveness (i.e., belief that the government is taking proper steps to protect its population). Standard errors clustered at the administrative division level 1 are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table V: OLS and 2SLS results using experimental variation
(in-depth survey)

Outcome Variables	Health Insecurity (OLS)		Health Insecurity (2SLS)		Mean of Outcome	Gap btw. China and U.S.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Overall rights and freedom						
Willing to sacrifice own rights	0.065***	(0.005)	0.160**	(0.075)	0.724	0.224
Willing to sacrifice others' rights	0.068***	(0.005)	0.130*	(0.075)	0.705	0.203
z-score: willing to sacrifice rights	0.160***	(0.010)	0.348**	(0.165)	0.000	0.512
Panel B: Protection of privacy						
Willing to relax privacy protections	0.028***	(0.005)	0.203**	(0.081)	0.577	0.393
Unwilling to accept: track sick people	-1.861***	(0.363)	-11.259**	(5.506)	48.855	-5.843
Unwilling to accept: track everyone	-0.673*	(0.364)	-13.662**	(5.716)	54.572	-8.957
Contact tracing app	0.042***	(0.005)	0.222***	(0.080)	0.475	0.268
z-score: willing to sacrifice privacy	0.096***	(0.010)	0.647***	(0.170)	0.000	0.778
Panel C: Democratic rights and institutions						
Prefer strong leader	-0.081***	(0.011)	0.663***	(0.189)	2.672	0.614
Prefer delegating to experts	0.084***	(0.011)	0.747***	(0.156)	2.909	-0.058
Willing to sacrifice free press	-0.002	(0.005)	0.211**	(0.084)	0.600	0.422
Preference for democratic system	0.135***	(0.009)	0.062	(0.111)	3.267	n.a.
Willing to suspend democr. procedures	-0.010*	(0.006)	0.138*	(0.073)	0.446	n.a.
z-score: willing to curtail democracy	-0.019*	(0.011)	0.648***	(0.163)	-0.001	n.a.
Panel D: Rights to movement						
Unwilling to accept: close national border	-1.612***	(0.365)	4.039	(5.504)	42.655	6.624
Unwilling to accept: recommend stay home	-3.370***	(0.362)	2.916	(5.456)	43.025	7.722
Unwilling to accept: arrest if outside home	-2.052***	(0.370)	-3.747	(5.559)	51.547	-6.984
z-score: willing to give up mobility	0.072***	(0.010)	-0.013	(0.150)	0.000	-0.032

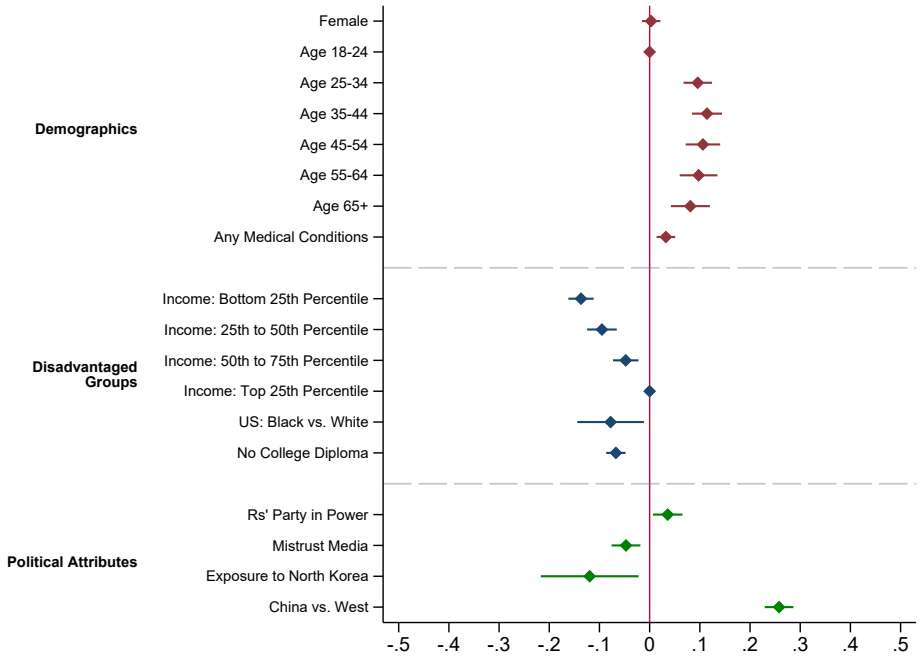
Notes: Table reports OLS and 2SLS results using experimental variation, based on the in-depth survey sample. Health Insecurity refers to an average of (1) COVID-19 is a threat to the health and lives of people in the country; and (2) the country does not have sufficient hospital capacity and medical equipment for a pandemic surge, topics discussed in the public health treatment. Columns (2) to (3) present the OLS estimates and standard errors, and columns (4) to (5) present the 2SLS results from Equation 3. Column (6) reports the unconditional mean of the outcome variable of respondents in the control group. Column (7) reports the difference in the unconditional control group mean of each outcome variable between China and U.S. respondents. Outcomes of "unwilling to accept" measure the minimum lives that need to be saved to implement the given policy on a scale of 0 to 100. Outcomes of "willing to [do]" and contact tracing app are dichotomous. Outcomes of "preference" are on a scale of 1 to 4. The z-score for each family shown at the bottom row of each panel is an inverse-covariance-weighted index as described in Anderson (2008). The health insecurity is standardized to mean 0 and sd 1. All regressions include the following controls: demographics (sex, age group indicators, education (indicator for holding a college degree), income quartiles (relative to own country), and an indicator for any medical conditions); concerns about surveillance (i.e., worries about information collected by the government to fight COVID-19 could be stored and used for other reasons later on a scale of 1 (strongly unconcerned) to 5 (strongly concerned)); strata fixed effects (country and hotspot); and survey week fixed effects. The observation count is 13,337 for every regression except the last two in Panel B and last three in Panel C; it is 13,328 for the last two in Panel B and 9,425 for the last three regressions in Panel C. The first stage F-statistics range from 56.12 to 58.44. Robust standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Main Figures



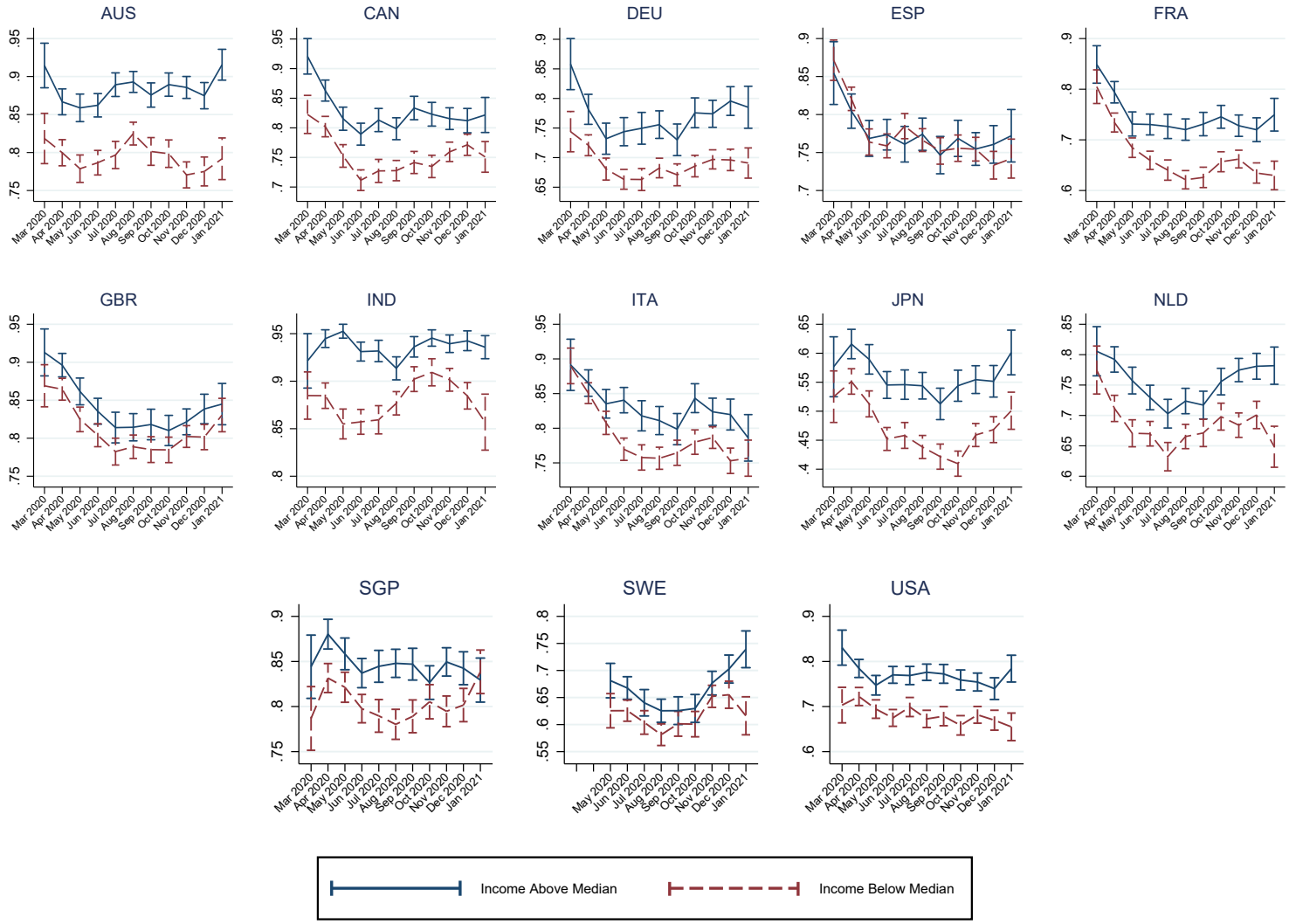
Notes: Figure uses responses from both the longitudinal and in-depth surveys for overlapping weeks (i.e., week of March 30 to week of April 13, 2020). For Sweden, data is used from the week of May 18 to the week of June 1, 2020. Bars represent the country fixed effects plus constant obtained from a regression of the outcome on week, country, and survey (i.e. longitudinal vs. in-depth) fixed effects. Willingness to sacrifice a given right is defined as answering "6" or above to questions in the form of "On a scale of 0 (extremely unwilling) to 10 (extremely willing), to what extent do you agree with the following statements: I am willing to [name of each variable on the y-axis]" as described in Section II.C. The dashed lines represent the average of the outcome variable among U.S. respondents. Respondents from China were not asked about the willingness to suspend democratic procedures. 95% confidence intervals are depicted in gray.

Figure I: Cross-country patterns in civil liberties trade-offs
(longitudinal and in-depth survey)



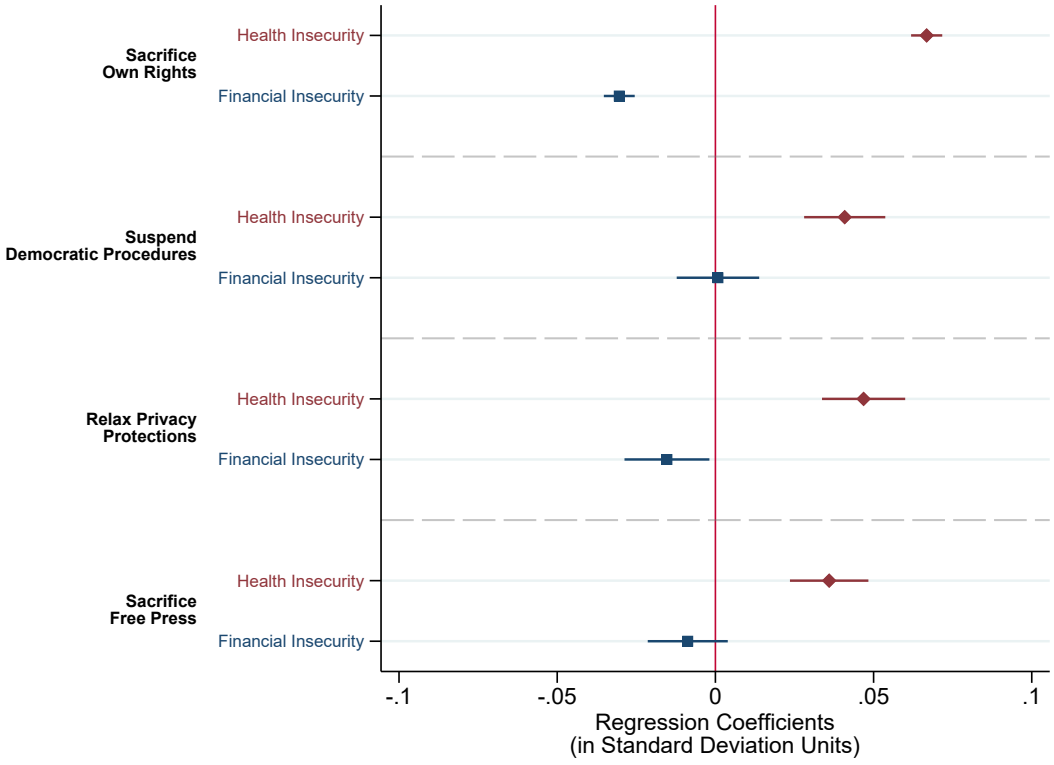
Notes: Figure based on the in-depth survey sample, restricted to the control group. Diamonds denote coefficient estimates obtained from separate OLS regressions of willingness to sacrifice rights (as described in Section II.C) on the given characteristics (y-axis), controlling for a hotspot indicator, survey week and country fixed effects. "China vs. West" denotes the an indicator equal to 1 for respondents from China (and zero for France, U.S., Italy, Germany, and the U.K.). 95% confidence intervals based on robust standard errors are shown.

Figure II: Individual characteristics and sacrificing own rights (in-depth survey)



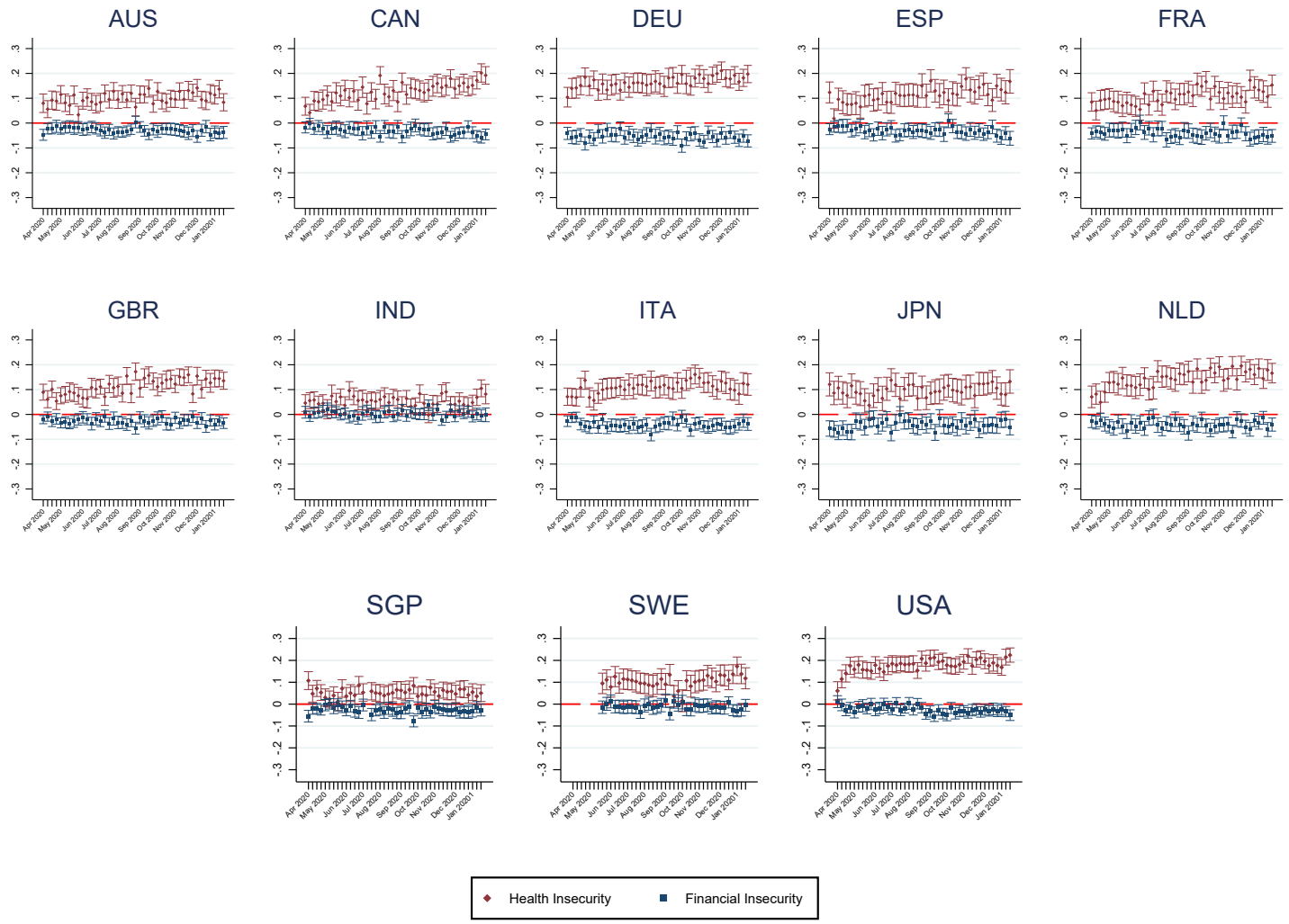
Notes: Figure is based on the longitudinal survey sample, plotting marginal predicted values of willingness to sacrifice rights on income by month for each country. Outcome variable is the willingness to sacrifice rights as described in Section II.C. Income is a binary variable, which is equal to 1 if the respondent's income is below the median income, or 0 if above the median income in a given country. The estimates are conditional on age and sex. 95% confidence intervals are shown.

Figure III: Cross-country patterns in the relationship between willingness to sacrifice rights and income over time (longitudinal survey)



Notes: Figure is based on the longitudinal survey sample, including weeks from the week of March 30 to the week of April 13, 2020 except for Sweden; data from the week of May 18 to the week of June 1, 2020 are used for Sweden since data collection did not begin until May 18, 2020. Dots denote coefficient estimates from separate OLS regressions—one for each of our four main outcome variables listed in bold face on the very left—on health insecurity and financial insecurity. Health insecurity is the average over concerns about personal health, health of the elderly, and healthcare systems being able to cope. Financial insecurity refers to concerns about one's household financial position. All outcomes are binary variables as described in Section II.C. Insecurity variables are standardized so as to have mean 0 and sd 1. Country-week fixed effects and demographic controls (sex and age groups indicators) are included in the regressions but not reported. 95% confidence intervals based on robust standard errors are also shown.

Figure IV: Association between willingness to sacrifice civil liberties and health and economic insecurities (longitudinal survey)



Notes: Figure is based on the longitudinal survey sample, including all weeks from the week of March 30, 2020 to the week of January 18, 2021 and including the following countries: Australia, Canada, France, Germany, India, Italy, Japan, Spain, Sweden, the Netherlands, the United Kingdom, the United States; Sweden is added in the week of May 18, 2020. Outcome variable is the willingness to sacrifice rights as described in Section II.C. Health insecurity is the average over concerns about personal health, health of the elderly, and healthcare systems being able to cope. Financial insecurity refers to concerns about one's household financial position. Dots denote the coefficient estimates obtained from a OLS regression of willingness to sacrifice own rights on health (red) and economic (blue) insecurity by each week and country, conditional on sex and age group indicator variables. 95% confidence intervals based on robust standard errors are shown.

Figure V: Dynamics of health insecurity, financial insecurity and sacrificing own rights (longitudinal survey)