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Lives or Livelihoods? Perceived Tradeoffs and Public Demand for Non-Pharmaceutical Interventions*

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Abstract

We study how cost-benefit considerations shape the public acceptance of non-pharmaceutical interventions (NPIs). In an online experiment conducted on a representative sample from the US during the early Covid-19 pandemic, we provide half of our respondents with research evidence pointing to low economic costs of shutdown measures. A one standard deviation decrease in perceived economic costs increases support for NPIs by two times as much as having a Covid at-risk condition, and by half as much as being a Democrat. Varying projected health benefits of NPIs has similar effects. Personal exposure to health risks reduces people's responsiveness to cost-benefit considerations.

JEL Classification: C91, D01, D9, H12
Keywords: Covid-19, non-pharmaceutical interventions, beliefs, tradeoffs

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1 Introduction

During the first wave of the Covid-19 pandemic, governments around the world implemented non-pharmaceutical interventions (NPIs), including mandatory social distancing and stay-at-home orders to slow the spread of the coronavirus. While the ultimate effects of these shutdown measures on public health and on long-run economic outcomes are still debated among economists (Acemoglu et al., 2020; Allcott et al., 2020a; Alvarez et al., 2020; Barro, 2020; Eichenbaum et al., 2020; Lee et al., 2020; Lin and Meissner, 2020; Sheridan et al., 2020), a widespread view in the public debate is that, to some extent and at some duration of shutdown measures, a tradeoff exists between the benefits of NPIs to public health and their economic costs.[1] The discussion on how to weigh these costs and benefits continues in light of the second waves of the pandemic occurring in many countries, challenging leaders in Western democracies to meet constituent expectations to save lives while at the same time protecting livelihoods and civil liberties.

But how important are such cost-benefit considerations in shaping public support for pandemic response measures? In the context of the morally charged policy discussion around Covid-19, non-utilitarian principles may limit the elasticity of policy demand to perceived trade-offs. However, if cost-benefit considerations are central to the policy preferences of citizens, it follows that these considerations will determine the political feasibility and ultimate success of extended social distancing and shutdown measures. More generally, understanding the mechanisms behind public demand for NPIs should enable better design of policies and targeting of information to the public.

To study the role of cost-benefit considerations in shaping support for NPIs, we conduct an online survey experiment in April 2020 with a sample of 8,861 respondents that is representative of the US adult population. We generate exogenous variation in the perceived economic costs of shutdowns by randomly providing half of the sample with recent research evidence by Correia et al. (2020), pointing to *positive medium-run economic effects* of longer shutdowns for US cities during the 1918 Influenza. We then elicit beliefs about the economic impact of lockdown orders during the 2020 pandemic on the US economy. In a second, orthogonal treatment condition, we generate exogenous variation in the projected health benefits of shutdowns. Based on an established S.E.I.R. model, we present survey respondents with a table that maps projections of Covid-19 fatalities

[1] See e.g. `https://www.nytimes.com/2020/04/10/magazine/coronavirus-economy-debate.html`.

to shutdown lengths between zero and 6 months. Depending on the treatment condition, we vary the assumed infection fatality rate within a reasonable range, thereby generating a differential number of projected deaths for each length of shutdown. Respondents then choose their individually preferred length of shutdown based on the scenarios mapping shutdown lengths to numbers of fatalities. Subsequently, we also elicit preferences about the strictness of real-world social distancing measures and views on how severely violations of rules should be punished, without holding fixed the number of lives that could be saved through these measures.

We find that cost-benefit considerations play a substantial causal role in shaping policy views, along both the economic cost and the health benefits dimension. Respondents exposed to the economic cost treatment hold significantly more optimistic views about the economic impact of the April 2020 shutdown, prefer longer lockdown lengths in the projected scenarios and favor stricter interventions. Moreover, individuals prefer scenarios with longer shutdown lengths if the scenarios assume a higher infection fatality rate. Using an IV-framework to interpret estimated magnitudes, we find that a one standard deviation decrease in perceived economic costs increases the preferred shutdown length by 24 percent of a standard deviation, or 13 days. Similarly, a one standard deviation higher perceived magnitude of fatality projections increases the preferred shutdown length by 21 percent of a standard deviation, or 11 days. In addition, a one standard deviation lower perceived economic cost of NPIs increases respondents' support for making existing rules stricter by 20 percent of a standard deviation. These magnitudes are substantial, and correspond to 1.5-2 times the effect of having a pre-existing health condition that increases the risk of a severe Covid-19 illness and to half of the effect of being a Democrat.

Exploring heterogeneous treatment effects, we find that individuals with a Covid-19 at-risk condition or a higher anticipated need for hospital care demand high levels of NPIs regardless of cost-benefit considerations. Importantly, our estimated treatment effects are large and significant for individuals across the political spectrum. Thus, despite substantial partisan differences in the perceived costs and benefits of lockdowns as well as in demand for NPIs, targeted information had the potential to generate a convergence in policy views during the early stages of the pandemic.

This study contributes to recent work exploring public attitudes towards NPIs during the pandemic (Fetzer et al., 2020). Briscese et al. (2020) document that longer hypothetical lockdown durations are associated with a decrease in intentions to comply with social distancing. Allcott et al. (2020b) document substantial differences in beliefs about Covid-19 and compliance with social distancing measures between Democrats and Republicans. Our paper builds on this work by providing causal evidence on the role of perceived costs and benefits of NPIs in determining the demand for these policies, in a setting where perceptions are potentially endogenous to political orientation and demographic characteristics.

More generally, this paper contributes to a literature studying individual decision-making under tradeoffs between economic and non-economic domains (Falk and Szech, 2013). Elias et al. (2015) use information treatments to show that individuals weigh costs and benefits when forming their opinions about organ transactions, but not about slavery or prostitution markets, suggesting that cost-benefit considerations are often not taken into account in highly morally charged domains. We add to this research by showing that cost-benefit considerations play an important role in determining people's acceptance of government measures aimed at saving lives but restricting economic and civic freedom.

Another closely related strand of literature uses information experiments to study the role of beliefs about potentially relevant facts in individuals' policy views. Previous research often found relatively low elasticities of policy views to information, either because these elasticities are moderated by political orientation (Alesina et al., 2020; Haaland and Roth, 2019; Alesina et al., 2018) or because differences in policy views across the political spectrum are altogether unrelated to differences in beliefs (Cappelen et al., 2019; Kuziemko et al., 2015). In contrast, we show that individuals' demand for NPIs is highly elastic to cost-benefit concerns – despite large partisan differences at baseline.

Finally, this paper relates to a literature studying the (heterogeneous) impact of the Covid-19 crisis on household economic outcomes (Guerrieri et al., 2020; Barrot et al., 2020; Kahn et al., 2020; Adams-Prassl et al., 2020; Alon et al., 2020; Hanspal et al., 2020; Andersen et al., 2020; Baker et al., 2020) and fairness views (Cappelen et al., 2020), and on how information shapes views and behavior during the pandemic (Bursztyn et al., 2020). Lastly, we build on a theoretical literature studying optimal shutdown lengths from a social planner's perspective (Alvarez et al., 2020; Glover et al., 2020; Hall et al., 2020; Rampini, 2020).

2 Experimental Design and Data

This section describes the survey administration, the experimental design, and the data. The interactive survey is available at `https://cebi.eu.qualtrics.com/jfe/form/SV_bNiQ9zcns8kbnBH` and the survey instructions at `https://www.dropbox.com/s/pkm7q6ypkno3pbb/Shutdown_Duration_SurveyInstrument.pdf?dl=0`.

2.1 Timeline and Overview

Data collection took place between April 9th and April 15th, 2020 in cooperation with the online data provider Lucid. Our survey, whose structure is outlined in Figure 1, contains two randomized, orthogonal treatment conditions. First, an "economic cost treatment" provides a random half of the respondents with research evidence pointing to low economic cost of NPIs. Second, we elicit respondents' policy views, among others in scenarios that systematically vary the projected health benefits of a shutdown.

2.2 Survey Design

Prior belief elicitation We first elicit respondents' beliefs about the unemployment costs of lockdown measures implemented in US cities during the 1918 Influenza. For this purpose, we describe the difference-in-difference approach used in Correia et al. (2020) in simple words. Namely, we explain that the authors compare US cities that were similar in their initial exposure to the virus and their pre-pandemic labor market situation, but differed in the length of their lockdown. We then elicit prior beliefs asking respondents to think of the following scenario:

> (...) **City A** was shut down for **1 month during 1918**, and its unemployment rate was **7% by the end of the pandemic in 1919**.
>
> **City B** was shut down for **3 months, 60 days longer than City A**. What do you think was the **unemployment rate** in **City B** by the end of the pandemic in **1919**?

"Economic cost treatment" Subsequently, we provide a random half of the respondents with information on the "actual" post-pandemic unemployment rate in City B, corresponding to 6% based on Correia et al. (2020). In Appendix A we explain the derivation of the treatment value and briefly discuss the robustness of the findings in Correia et al. (2020). The remaining respondents are not provided with this information.

We then elicit all respondents' beliefs on how lockdown extensions of different lengths would affect the current US economy.

"Mortality Treatment" and preferred length of shutdown Our first outcome of interest is respondents' preferred shutdown length based on scenarios that systematically vary the shutdown duration and the hypothetical number of lives saved. Note that for ethical reasons we purposefully abstain from moving respondents' fundamental real-world beliefs about the seriousness of Covid-19, as these beliefs may arguably affect people's social distancing behavior in the real world (Bursztyn et al., 2020).

Instead, we introduce variation in projected (hypothetical) Covid-19 fatalities using the following approach: We present survey respondents with a table that maps projections of Covid-19 fatalities in 2020 to different shutdown lengths ranging from zero to six months in one-month increments. The hypothetical numbers of lives saved are based on an established S.E.I.R. (Susceptible, Exposed, Infected and Resistant) model. Respondents in a "high mortality condition" are presented with projections based on an assumed infection fatality rate of 2.4%, while respondents in a "low mortality condition" are presented with projections assuming a rate of 0.4%. Both rates are within a plausible range according to the state of the research as of April 2020 (see Appendix A for details). We inform respondents that the fatality projections are the result of model assumptions, which we make available. Moreover, we emphasize that the actual number of future Covid-19 fatalities is unknown.[2] Holding all other parameters fixed, the model projects that, in the complete absence of a lockdown, 3,253,000 (542,000) American citizens would die of Covid-19, and with a six months lockdown 100,000 (17,000) would die until the end of 2020 in the high (low) mortality condition. Based on the projected numbers, we ask respondents to choose their preferred shutdown length between zero and six months, considering all aspects that are important to them.[3]

On the following survey page, we ask participants how the order of magnitude of the projected mortality numbers in the scenarios compares to their expectation of future Covid-19 fatalities before taking the survey. They answer this question on a qualitative 7-

[2]In Table G.3 we demonstrate that, as intended, respondents did not change their beliefs about the actual fatality or infectiousness of Covid-19 in response to the mortality treatment.

[3]In Appendix B we discuss the possibility that a fraction of respondents did not interpret the question as a choice between the six projected scenarios, but as a question on their shutdown preferences regardless of the hypothetical number of lives saved. We show that this would not affect our conclusions from the economic cost treatment, but would imply that the estimated effects from the mortality treatment should be interpreted as a lower bound.

point scale ranging from "much lower than I expected" to "much higher than I expected".

Other main outcomes Respondents then answer questions about their real-world preferences regarding the strictness of NPIs and the financial punishment of risky behaviors that might spread the coronavirus. In contrast to the shutdown length question, these questions do not hold fixed the effect of the policy measures on the number of lives saved.

Characteristics and beliefs Next, we collect demographic information and various measures of personal exposure to the coronavirus and to shutdown measures, such as health status and recent job loss. We also elicit beliefs and attitudes, such as beliefs about the infectiousness and mortality of Covid-19 in comparison to a regular flu, the perceived resurgence risk if mitigating measures were lifted and the perceived effectiveness of NPIs.

Debriefing Finally, we provide a debriefing that clarifies that the Influenza of 1918 differed in important aspects from the Covid-19 pandemic. Second, we again emphasize that, even though the infection fatality rate we used to calculate the assumed number of Covid-19 deaths in the shutdown scenarios was reasonable, the true rate is unknown. For both points we provide links to online background information.

2.3 Mitigating Social Desirability Bias

Social desirability bias could be a concern when eliciting preferences regarding the duration and intensity of NPIs to save lives. While our design is not immune to such bias, it is arguably mitigated. First, on the welcome page we ensure the anonymity of participants. Second, when eliciting respondents' preferred shutdown length, we emphasize that "there are no right or wrong answers". Third, and most importantly, compared to an alternative within-subject design, respondents in our between-subject design do not explicitly report whether they are willing to trade off lives against economic benefits.

2.4 Data

Our sample is limited to respondents residing in a state with government-mandated social distancing measures as of April 9th, 2020.[4] We drop respondents in the bottom percentile of the response time (5 minutes), which was 15 minutes at the median. Our final sample consists of 8,861 respondents and is close to representative of the adult US population in terms of gender, age, Census region and household income.[5]

[4]Residents of Arkansas, Iowa, North Dakota, Nebraska and South Dakota were screened out.

[5]The most notable difference is that a we have a higher share of highly educated individuals in our sample (see Table G.1) – a typical feature of online samples (Grewenig et al., 2018).

The sample is globally balanced according to observables i) between respondents who receive the economic cost treatment and those who do not and ii) between those assigned to the "high mortality" versus the "low mortality" condition (Table G.2). We standardize qualitative outcome measures based on the mean and standard deviation in the economic cost control group, pooling both mortality conditions.

3 Descriptive Evidence

High acceptance of mandatory social distancing Throughout this section, we pool respondents in both mortality conditions but restrict the sample to those who have not received the economic cost treatment. We find that, as of mid-April 2020, support of lockdown measures was high in the US, in line with evidence by Fetzer et al. (2020). The average preferred lockdown duration based on the shutdown projections was four months, and the majority of respondents would have liked to see stricter regulations and stricter rule enforcement through higher fines (Figure F.1).

Demographics and political orientation How does support for social distancing measures vary with personal characteristics? Political orientation is the strongest determinant of policy preferences (Figure F.2 and Table 1, Columns 1, 4 and 7): Democrats prefer a 24 days longer shutdown than Republicans and are 0.5 and 0.2 standard deviations more in favor of stricter measures and stricter rule enforcement, respectively, conditional on an extensive set of demographic characteristics. Moreover, females favor longer and stricter interventions. In contrast, individuals aged 65 or older – perhaps surprisingly – favor a six days shorter shutdown length than the youngest age group (18-34 years).

Personal exposure Next, we explore the role of personal exposure to the health or financial risks of the crisis (Figure F.2 and Table 1, Columns 2,5 and 8). Not surprisingly, having at least one risk factor for a severe Covid-19 illness in the family or having a high anticipated need for hospital care is associated with a longer preferred lockdown duration in the projected scenarios, and a demand for stricter measures and stricter rule enforcement. The estimated coefficients, however, are considerably smaller than the Democrat-Republican difference. The patterns according to economic exposure to the crisis are somewhat less pronounced: while those with a high exposure through stock holdings or a recent drop in household income prefer shorter shutdowns and stricter rule enforcement, there are no strong patterns according to job loss.

Perceived costs and benefits of NPIs In addition to one's personal exposure to the crisis, beliefs about the overall costs and benefits of shutdown measures may determine related policy views. We find that Republicans believe that a shutdown extension of six weeks would negatively impact the economy whereas Democrats believe the net economic effect to be zero, on average. In addition, younger individuals perceive lower economic costs of NPIs. These patterns are broadly in line with differences in support for NPIs across groups (Figure F.2). Also beliefs about the infectiousness and mortality of Covid-19, about the effectiveness of shutdown measures and about the risk of resurgence if measures were to be lifted, exhibit strong partisan gaps, in line with differences in support for NPIs (Figure F.3).

In a multivariate regression, a one standard deviation lower perceived economic cost of lockdown interventions is associated with a 13 days longer preferred shutdown length (Table 1, column 3), a 0.28 standard deviation higher demand for stricter regulations (column 6) and a 0.13 standard deviation stronger support of strict rule enforcement (column 9).[6] Moreover, the R^2 increases considerably and the Democrat-Republican difference in support for NPIs shrinks by one fourth when we control for the perceived economic impact of lockdown interventions. This strong explanatory power of beliefs about the economic impact on support for NPIs could be driven by a causal effect of beliefs. Alternatively, beliefs might be an outcome of policy views or correlated with those views due to other, unobserved factors.

4 Causal Evidence

4.1 Average Treatment Effects

Next, we exploit the random treatment assignment to examine how perceived trade-offs causally shape individuals' demand for NPIs. We employ the following specification:

$$Y_i = \beta_0 + \beta_1 T_i^{Cost} + \beta_2 T_i^{HighMort.} + \Theta' X_i + u_i \tag{1}$$

where the outcome variable of interest Y_i, in a set of first stage regressions, stands for respondent i's perceived economic costs of lockdown measures and for the perceived order of magnitude of the projected mortality scenarios, respectively. In corresponding reduced

[6] We do not include perceptions related to health benefits of shutdown measures in the correlational analysis since we only elicit such measures post-treatment, e.g. with respect to respondents' assessment how the projections (that were provided to all participants) compared to their priors.

form regressions, Y_i denotes respondent i's preferred level of government intervention. T_i^{Cost} is a dummy that takes the value one if respondent i is randomly assigned to the economic cost treatment group. $T_i^{HighMort.}$ takes the value one if respondent i is randomly assigned to the high mortality condition when choosing her individually preferred length of shutdown, and zero for the low mortality condition. We include a set of control variables X_i, which increases our effective power and controls for minor imbalances across treatment arms.[7]

First-stage effect of the economic cost treatment Pre-treatment, more than 93 percent of the respondents over-estimate the negative effect of 1918 shutdown measures found in Correia et al. (2020) on the US economy in 1919, while 6 percent under-estimate it (Figure F.4). Thus, the economic cost treatment represents an information shock in the direction of *lower* perceived costs of shutdown measures in 1918 for nearly the entire sample. In order to ensure monotonicity of the treatment, we restrict our working sample for the causal analysis to those 94% of respondents for whom the information is *not* a negative update about the economic impact of a lockdown. All results are qualitatively and quantitatively similar using the full sample.[8]

Panel A of Table 2 (column 1) confirms a strong first stage effect of the economic cost treatment: Treated respondents, on average, hold 40 percent of a standard deviation more optimistic beliefs about the effect of a lockdown extension until the end of June (compared to mid-April) on the US economy. The treatment has the strongest impact on beliefs about the economic cost of a three-months shutdown extension, while perceived economic costs of a two-week extension are affected by only half as much (see Table G.4).[9] Finally, those exposed to the economic cost treatment expect an extension of the shutdown beyond mid-April by six more weeks to have a 0.08-0.1 standard deviation less negative effect on their labor income, their total household income and their wealth (see Table G.5).[10] Overall, our results confirm that i) respondents update their beliefs

[7] X_i includes gender, prior beliefs about the costs of an extended lockdown in 1918, census region of residence, six age groups, the presence of children in the household, log household income, educational attainment, employment status in January 2020, and political orientation (Democrat, Republican, Independent or "other"). Our results are robust to excluding controls.

[8] Table G.6 replicates our main findings based on the full sample and Figure F.7 shows them separately for split samples based on prior beliefs.

[9] This difference may be attributed to the fact that the information treatment focuses on the effect of a two-month difference in shutdown length or simply to less variation in respondents' views on the effects of a shutdown extension by two weeks, which most participants view as less costly.

[10] The pass-through from beliefs about the aggregate economy to beliefs about one's own household is

about the effect of economic lockdowns in 1918 and ii) extrapolate to their perceived costs of a lockdown in 2020 for the US economy and for their own household. There are no spillover effects on the perceived health effects of shutdown measures, i.e. respondents' beliefs about the mortality and infectiousness of Covid-19, about the risk of resurgence if restrictions were to be lifted, and about the effectiveness of NPIs are inelastic to the economic cost treatment (Table G.3).

First-stage effect of the mortality treatment Next, we test whether participants who are exposed to the high mortality condition perceive the projected number of deaths as higher than participants exposed to the low mortality condition. We find a 0.4 standard deviations differential effect of the "high mortality" compared to the "low mortality" condition on these perceptions (Panel A of Table 2, column 2), confirming that respondents, on average, were able to interpret high orders of magnitude in projected fatalities.

Treatment effects on the demand for mandatory social distancing If individuals weigh economic costs of NPIs against the potential number of lives saved when forming their policy views, we would expect the economic cost treatment to increase support for longer lockdown durations, more stringent social distancing rules and possibly also stricter rule enforcement. Similarly, we would expect respondents to choose a longer preferred lockdown period in the projected scenarios when those scenarios assume a higher number of deaths (respectively lives saved) in the high mortality condition. Note that we do not expect the mortality treatment to impact preferences for strengthening measures or enhancing enforcement because the differential model-based fatality projections only refer to the shutdown length item and, in fact, do not shift beliefs about the actual mortality or infectiousness of Covid-19 (see Table G.3), i.e. respondents understood the differential scenarios as hypothetical.

In line with utilitarian concerns, respondents previously exposed to the economic cost treatment (the high mortality condition) prefer, on average, shutdown measures that last six (four) days longer, based on the fatality projections they are exposed to (Table 2, Panel B, column 1).[11] The economic cost treatment also increases support

naturally smaller than one (one fifth in our context), as idiosyncratic risks tend to play an important role for households' (beliefs about their) incomes (Roth and Wohlfart, 2019).

[11] In Appendix B we show that if respondents interpreted the question on their shutdown preferences as a question about their general preferences regardless of the projected number of lives saved (and not as a choice between the six projected scenarios), this would not affect our conclusions from the economic cost treatment but it would imply that the estimated effects from the mortality treatment should be interpreted as a lower bound.

for strengthening current shutdown measures by 0.15 of a standard deviation. However, views on how severely violations of rules should be punished seem to be unrelated to cost-benefit considerations (column 3). As expected, those outcome measures, which are elicited referring to respondents' preferences on real world measures instead of letting them choose among different projected scenarios on hypothetical numbers of lives saved, are unaffected by the mortality treatment.

To gain a better understanding of the extent to which cost-benefit considerations affect the preferred duration and intensity of lockdown interventions, we scale the reduced form effects of our two treatments by the first-stage effects on respondents' perceived costs and benefits of a lockdown. We apply the following IV regression framework:

$$1^{st} Stage : \text{Perceived econ. cost}_i = \pi_0 + \pi_1 T_i^{Cost} + \pi_2 T_i^{HighMort.} + \Theta' X_i + u_i$$
$$\text{Perc. magnitude mort. projection}_i = \gamma_0 + \gamma_1 T_i^{Cost} + \gamma_2 T_i^{HighMort.} + \Gamma' X_i + u_i$$

$$2^{nd} Stage : Y_i = \beta_0 + \beta_1^{IV} \text{Perc. } \widehat{\text{econ.}} \text{ cost}_i + \beta_2^{IV} \text{Perc. magnitu}\widehat{\text{de mo}}\text{rt. projection}_i + \delta' X_i + \varepsilon_i \quad (2)$$

Having documented a strong first stage (Table 2, Panel A), we now focus on the second stage, in which we estimate the causal effect of perceived tradeoffs on individual demand for NPIs, Y_i. The IV approach should be given a careful interpretation as a scaling exercise to facilitate the interpretation of magnitudes.[12] According to this exercise, a one standard deviation more optimistic belief about the economic impact of a lockdown increases the preferred lockdown length by 13 days and the demand for stricter regulation by 0.2 standard deviations (Panel C of Table 2, columns 1 and 2). Similarly, a one standard deviation higher perception of the number of deaths projected in the model-based fatality scenarios increases the preferred lockdown length based on these scenarios by 11 days. These effects correspond to between 140% and 225% of the effect of being at risk of a severe Covid-19 illness. Lastly, according to a back-of-the-envelope calculation discussed in Appendix D, partisan differences in beliefs about the economic costs of shutdown measures can causally account for about one fourth of partisan differences in policy views.

Finally, we examine how perceived economic costs and projected health benefits

[12] Appendix C contains a more detailed discussion of IV assumptions.

interact in shaping the demand for NPIs. In Table G.7, we add an interaction term for the two treatment conditions to our baseline specification. While the first stage effects are independent of each other (Panel A), we find a marginally significant negative interaction effect on the preferred shutdown length in the reduced form regression. One interpretation is that individuals place less weight on economic costs when more lives are (assumed to be) at stake. However, given that in the high mortality condition a higher share of respondents prefer the longest possible shutdown length, there is less available variation for a change in policy views. Therefore, the negative interaction effect should be interpreted cautiously.

Robustness In Appendix E, we demonstrate that our results from the economic cost treatment likely reflect genuine changes in beliefs rather than pure priming effects, and that experimenter demand effects are unlikely to be a concern for either of our treatments (Haaland et al., 2020).

4.2 The Role of Cost-Benefit Tradeoffs across Subgroups

Are cost-benefit considerations equally important across groups? In this section, we examine whether elasticities of demand for NPIs differ across the political spectrum and across groups with different exposure to the crisis.

Personal exposure to health risks We split our sample by two measures of exposure to the health risks of the pandemic: the presence of chronic at-risk conditions in the respondent's close family (Panel A of Figure 2) and the respondent's anticipated likelihood that someone in the family (including the respondent) will need hospital care in the coming months (Panel B of Figure 2). Individual health exposure has no effect on how respondents assess the magnitude of the projected fatalities in the high vs. low mortality condition. Also, respondents with differential health exposure update their perceptions of the economic impact of a lockdown in a similar way in response to the economic cost treatment. Given the uniform first stage effects, any differential reduced form effects across groups are evidence of a differential elasticity of policy demand to perceived costs and benefits of lockdown measures.

The effect of the mortality treatment on preferred shutdown length in the projected scenarios is strong for individuals in the bottom two terciles in terms of anticipated demand for hospital care, and zero for those in the highest tercile (p-value of this difference: $p = 0.013$) (Figure 2, Panel B). There is no strong pattern according to the presence of a chronic at-risk condition in the family (Panel A of Figure 2). The estimated effects of the economic cost treatment on preferred shutdown length are larger in size for less exposed groups, although not significantly so. Moreover, the economic cost treatment has a stronger effect on the demand for strengthening existing measures among those in the bottom two terciles of exposure compared to the top tercile (p-value of these differences: $p = 0.06$ for chronic at risk-condition and $p = 0.13$ for anticipated need for hospital care). Taken together, although the differences are sometimes insignificant, the high average estimated elasticity of demand for NPIs to cost-benefit considerations seems to be driven by individuals without a high personal exposure to the health risks of the pandemic. These patterns are in line with the idea that those who take cost-benefit considerations into account are those "who can afford it". Individuals who are constrained by health-related needs have rather inelastic attitudes towards NPIs and favor intensities and durations of lockdown measures that are in line with their immediate personal constraints.

Exploring the role of age, we find that the effects of both treatments are driven by those aged 35 and older, whereas the policy demand of 18-34 year-olds is high at baseline and inelastic to cost-benefit concerns (see Figure F.5).[13] These findings suggest that age does not primarily capture health exposure to the pandemic (which seems to reduce the importance of perceived trade-offs). Rather, it seems that older individuals are more "pragmatic" and take cost-benefit considerations into account whereas the young are possibly more "idealistic" and accept longer shutdown lengths, no matter the price.

Personal economic exposure to the crisis Next, we examine the role of individual economic exposure to the Covid-19 crisis. We split the subsample of respondents who were employed at the beginning of the year into those who have been laid off "on account of the corona virus outbreak" (33 percent) and those who have not been laid off, as the most acute measure of economic exposure (see Figure 3, Panel A). The baseline demand for NPIs is similar across these groups. While the mortality treatment has uniform reduced form effects on preferred shutdown length across these groups, the effect of the economic cost treatment on demand for strengthening measures and on the preferred shutdown length is driven by those who have not been laid off. Once we account for the differential first stage between the two groups, this pattern remains for the demand for strengthening measures, but vanishes for the preferred shutdown length.[14] We find no strong systematic

[13] This finding is robust to adjustment for the slightly stronger first stage from both treatments among older individuals.

[14] 2SLS results for the entire split sample analysis are available upon request.

patterns with respect to an experienced household income loss or to being invested in the stock market. Taken together, we interpret these findings as suggestive evidence that acute personal economic exposure reduces the importance of cost-benefit considerations, although the patterns are much less pronounced than for exposure to health risks.

Political orientation Given partisan gaps in views on the pandemic (Allcott et al., 2020b), one might expect differences in elasticities of policy demand across the political spectrum. We find, however, that the estimated effects of both treatments have a similar magnitude across the political spectrum (Figure 3, Panel B). If anything, Democrats are slightly more responsive to the mortality treatment whereas Republicans react somewhat more strongly to the economic cost treatment. However, these differences are noisily measured and become smaller once we account for differences in the first stage updating of perceived costs and benefits.

Coupled with the baseline partisan differences in support for NPIs documented in Section 3, our results suggest that Democrats and Republicans hold different policy views at least partially *because* of disparate beliefs about relevant facts. Partisan differences in beliefs, in turn, may be the result of exposure to different sources of information (Allcott et al., 2020b; Bursztyn et al., 2020). Compared to other, more politically charged domains, deeply held views and "ideologies", which are inelastic to information, might have played a relatively smaller role in the context of the Covid-19 pandemic, at least in its early stage.

5 Conclusion and Implications

Based on a survey experiment conducted with a representative online sample in the US, we provide causal evidence that cost-benefit considerations play an important role in shaping public demand for non-pharmaceutical interventions (NPIs) during the Covid-19 pandemic. Even though the ongoing debate on the optimal degree of NPIs may appear morally and emotionally charged, individual support for these interventions is highly elastic to perceived tradeoffs between lives and livelihoods. Our findings suggest a powerful role for an evidence-based public debate about the costs and benefits of NPIs to mitigate the spread of Covid-19.

The results of this paper speak to a more general question regarding the determinants of the elasticity of people's policy views to information (Alesina et al., 2020). Previous studies have found policy preferences to be difficult to move, even when beliefs about the underlying state of the world are elastic (Kuziemko et al., 2015; Haaland and Roth, 2019; Settele, 2019); and in some contexts policy views are altogether unrelated to beliefs about relevant facts (Cappelen et al., 2019). Moreover, patterns of motivated information processing (Thaler, 2019; Fryer et al., 2019; Taber and Lodge, 2006) have been documented in a broad range of domains, i.e. individuals tend to place more weight on information that supports their prior (political) convictions and are more willing to adjust their policy views to information that supports their underlying preferences (Alesina et al., 2018; Haaland and Roth, 2019). Our finding that public demand for NPIs during the first stage of the pandemic appears responsive to information, irrespective of political affiliation, is quite striking against the background of this literature. Two factors may be driving this. First, Covid-19 has emerged as a new topic that was – and still is – associated with a high degree of uncertainty and potentially high personal stakes. Second, political narratives with respect to the pandemic were only starting to emerge at the time of data collection, which might have mitigated the role of ideology and partisan thinking in shaping policy views during the early stages of the pandemic.

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Main Tables and Figures

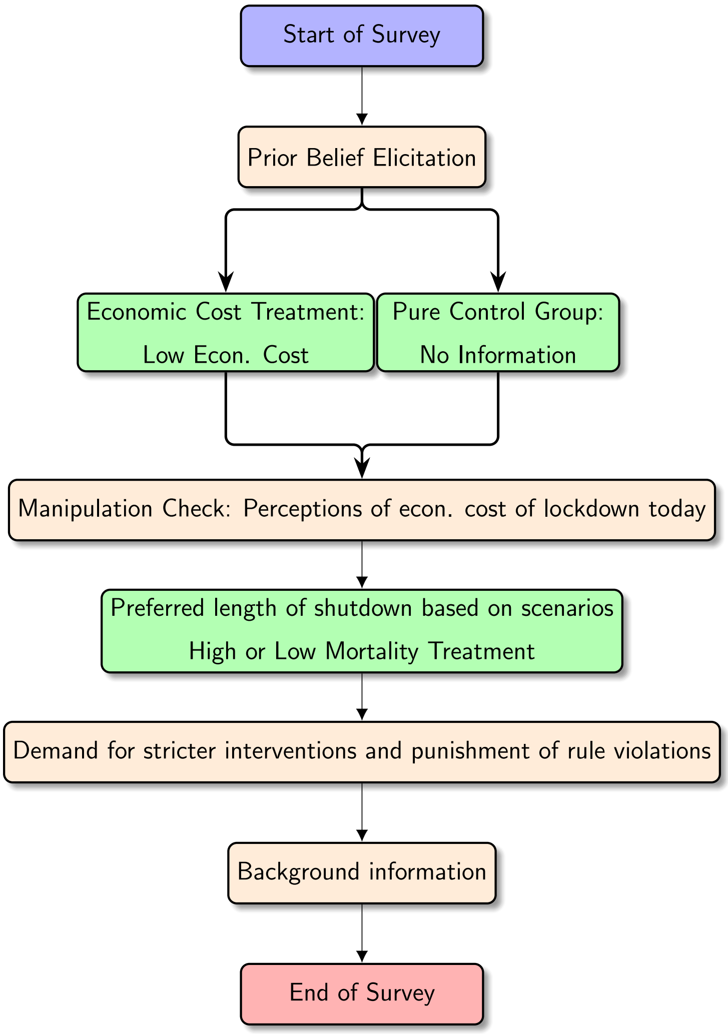
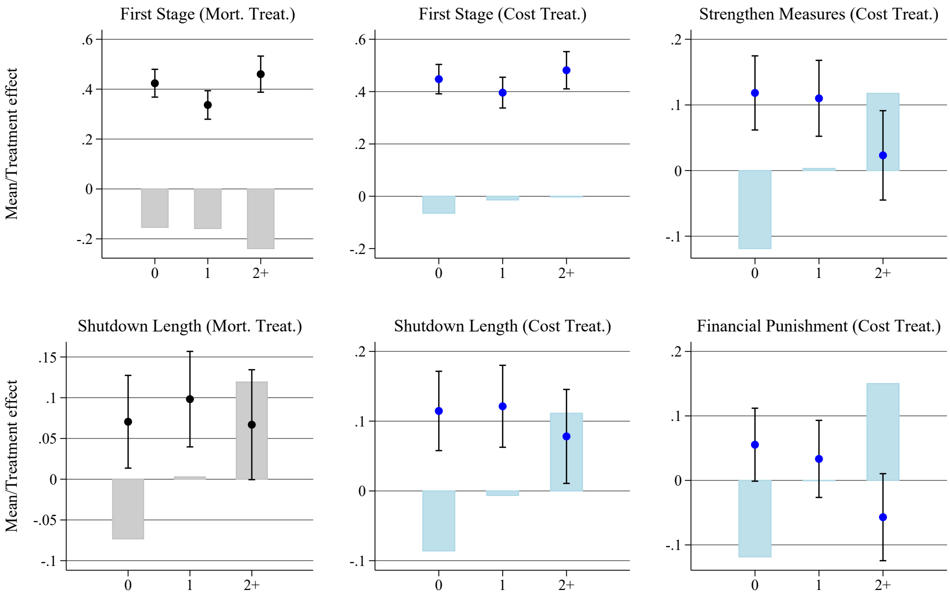


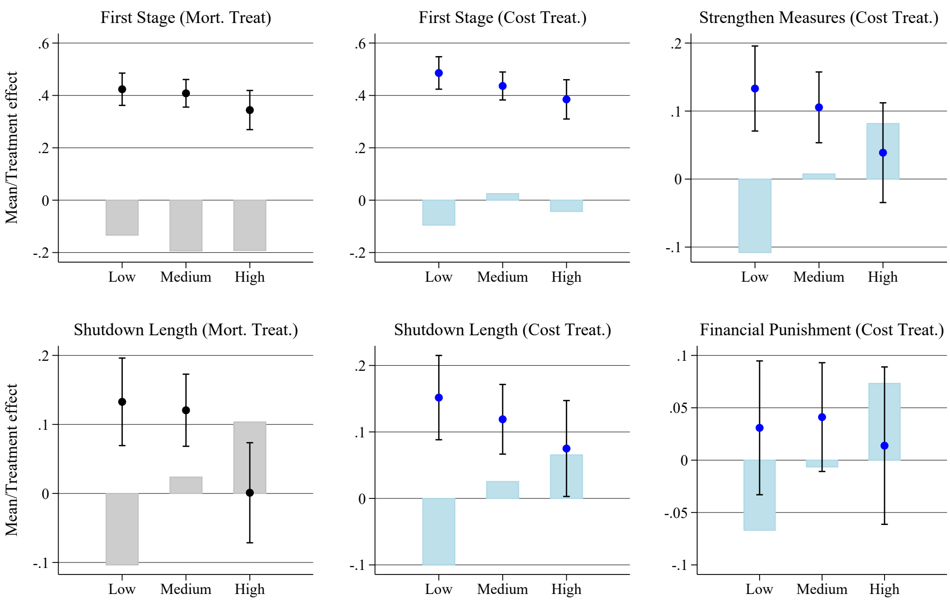
Figure 1: Outline of survey experiment

Figure 2: Heterogeneity by personal health exposure to the pandemic

(a) Number of chronic at-risk conditions in the family



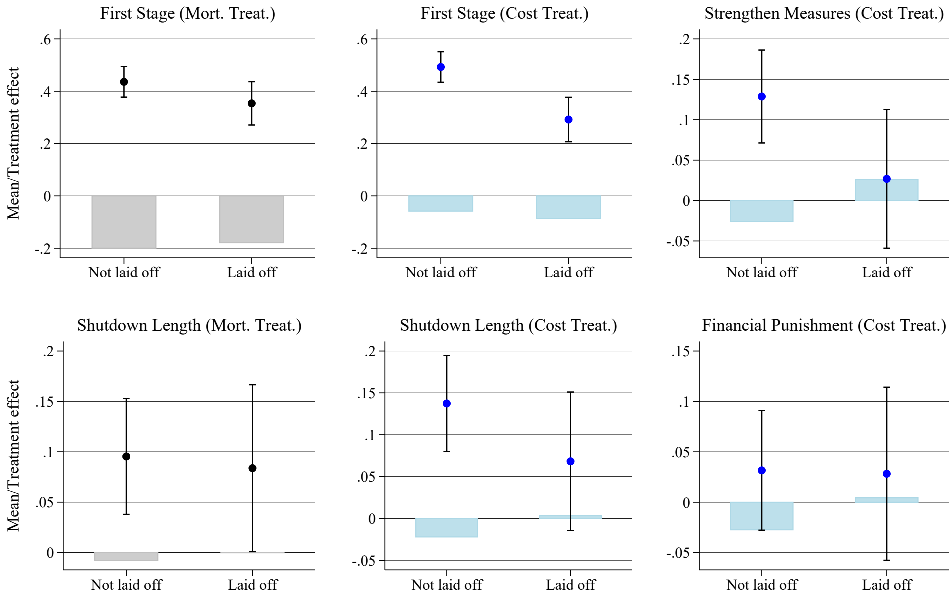
(b) Anticipated need for non-covid hospital care in the family



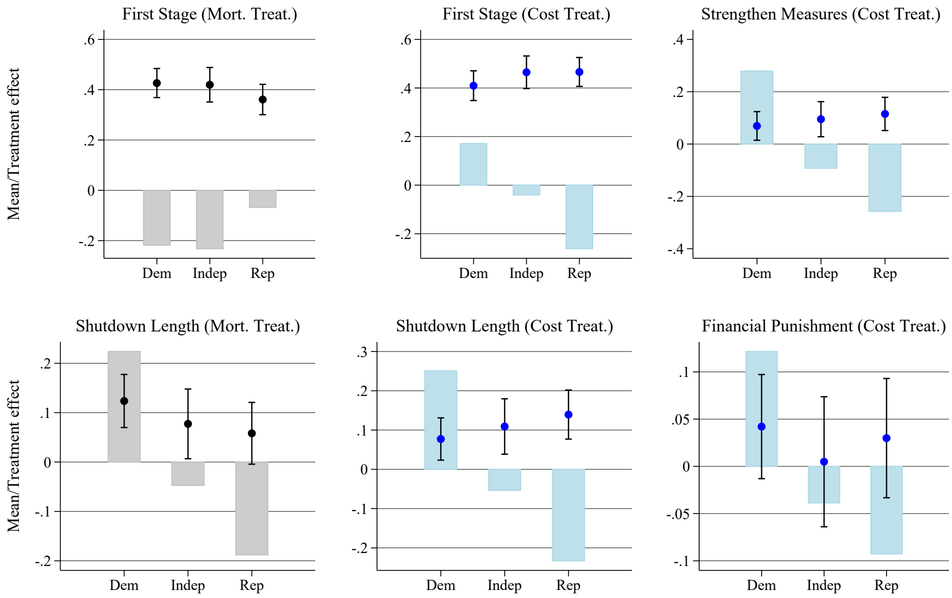
Notes: Bars show sample means, without additional controls. The point estimates including 90 percent confidence intervals show treatment effects for the economic cost treatment in blue and for the high mortality compared to the low mortality condition in grey. All outcomes are standardized based on the economic cost control group. The sample and control variables for causal estimates in the subfigures are identical to those in main results table (Table 2). In addition, we also control for the treatment for which we are not explicitly reporting effects. For the grey (blue) bars, the sample is, in addition, restricted to respondents in the low mortality condition (economic cost control group). Sample splits in the upper figure are based on a survey item asking about the presence of chronic at-risk conditions in the respondent's family, such as asthma, severe obesity, or diabetes. In the bottom figure, the sample is split based on a categorical variable asking respondents for the likelihood, on a scale from 0 to 10, that someone in their close family will need hospital care unrelated to Covid-19 in the coming six months. "Low" refers to the bottom third in terms of perceived likelihoods (0 or 1 on the original 11-point scale), "Medium" to the intermediate third (2-5 on the original scale) and "high" to the top third (6-10 on the original scale).

Figure 3: Control Group Means and Treatment Effects by Political Orientation

(a) Job loss due to crisis



(b) Political Orientation



Notes: Bars show sample means, without additional controls. The point estimates including 90 percent confidence intervals show treatment effects for the economic cost treatment in blue and for the high mortality compared to the low mortality condition in grey. All outcomes are standardized based on the economic cost control group. The sample and control variables for causal estimates in all subfigures are identical to those in main results table (Table 2). In addition, we also control for the treatment for which we are not explicitly reporting effects. For the grey (blue) bars, the sample is, in addition, restricted to respondents in the low mortality condition (economic cost control group). Panel A restricts the sample to those who report to have been employed before the outbreak of the crisis. Patterns remain very similar if we add those who were unemployed or out of the labor force before the crisis to the group who did not experience a job loss.

Table 1: Predictors of Demand for Mandatory Social Distancing

	Length of shutdown in months			Strengthen existing measures (z-scored)			Stricter enforcement (z-scored)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Democrat	0.823***	0.804***	0.609***	0.526***	0.519***	0.391***	0.210***	0.210***	0.154***
	(0.063)	(0.063)	(0.063)	(0.036)	(0.036)	(0.035)	(0.036)	(0.036)	(0.036)
Female	0.259***	0.250***	0.240***	0.175***	0.171***	0.164***	0.052*	0.047	0.044
	(0.053)	(0.054)	(0.052)	(0.029)	(0.030)	(0.028)	(0.030)	(0.031)	(0.030)
Age 35-64	-0.075	-0.088	-0.046	-0.003	0.012	0.039	0.083**	0.085**	0.097***
	(0.062)	(0.063)	(0.061)	(0.034)	(0.035)	(0.034)	(0.035)	(0.036)	(0.035)
Age 65+	-0.209**	-0.216**	-0.195**	-0.010	0.007	0.021	0.094**	0.084*	0.090*
	(0.083)	(0.085)	(0.083)	(0.047)	(0.048)	(0.046)	(0.048)	(0.048)	(0.048)
COVID At-Risk		0.195***	0.166***		0.150***	0.130***		0.157***	0.149***
		(0.056)	(0.054)		(0.031)	(0.030)		(0.032)	(0.031)
Other hospital needs		0.115***	0.107***		0.064***	0.059***		0.044**	0.042*
		(0.037)	(0.036)		(0.021)	(0.020)		(0.022)	(0.021)
Stocks		-0.149**	-0.138**		-0.046	-0.039		0.054*	0.057*
		(0.058)	(0.056)		(0.032)	(0.031)		(0.033)	(0.033)
Inc. loss		-0.179***	-0.154***		-0.012	0.005		-0.065*	-0.058*
		(0.059)	(0.057)		(0.033)	(0.031)		(0.034)	(0.034)
Job loss		-0.009	0.020		0.007	0.026		0.041	0.049
		(0.080)	(0.078)		(0.045)	(0.044)		(0.046)	(0.046)
Belief econ impact			0.432***			0.283***			0.125***
(z-scored)			(0.026)			(0.015)			(0.016)
R^2	.06	.07	.13	.07	.08	.16	.03	.04	.06
Observations	4475	4475	4475	4475	4475	4475	4475	4475	4475

Notes: Sample based on the economic cost control group The outcome in columns 1-3 is based on the respondent's choice between model-based projections mapping shutdown lengths in months to projected Covid-19 fatalities within 2020. The outcome in columns 4-6 (7-9) is based on self-reported preferences for stricter social distancing measures (a stricter financial punishment of rule violations) on qualitative scales. Outcomes in columns 4 to 9 are standardized using the mean and standard deviation in the economic cost control group. Covid At-Risk is a dummy taking the value one if the respondent reports at least one chronic health condition that increases the risk of a severe course of Covid-19 in the famliy, such as asthma, severe obesity, or diabetes (61 percent of the sample). Other hospital needs is based on a categorical variable asking respondents for the likelihood, on a scale from 0 to 10, that someone in their close family will need hospital care unrelated to Covid-19 in the coming six months. A value of zero represents the bottom third in terms of perceived likelihoods (0 or 1 on the original 11-point scale), a value of one represents the intermediate third (2-5 on the original scale) and a value of two represents the top third (6-10 on the original scale). Stocks is a dummy that takes the value one if the respondent holds any stocks or stock mutual funds (50 percent of the sample). Inc. loss is based on a categorical variable asking respondents if their current total net income from all members of the household was higher or lower than what the respondent had expected at the beginning of the year on a five-point scale. It is coded to one for those with a (much) lower than expected (38 percent of the sample). Job loss is a dummy that takes on the value one for those respondents who have been laid of, at the survey time, on account of the coronavirus outbreak (18 percent). In addition to the reported coefficients, all regressions include regional dummies, a dummy for rural zip code, log household income in 2019, educational attainment (less than high school degree, high school or equivalent, some college, Associate's degree, Bachelor's degree, post-graduate degree), three broad age groups, Independent and "other" political orientation, i.e. the omitted group is Republican. The omitted age group is 18-34. Robust standard errors are in parenthesis. *, ** and *** indicate significance at the 10 percent, 5 percent and 1 percent level, respectively.

Table 2: Experimental Results: First-Stage, Reduced Form and IV

	- Perceived econ. costs (z-scored)	Perceived magnitude of mortality projections (z-scored)	
	(1)	(2)	
		Panel A: First Stage	
Cost Treatment	0.440***	0.020	
	(0.021)	(0.021)	
Mortality Treatment	-0.015	0.402***	
	(0.021)	(0.021)	
First-stage F-stat	212.26	181.03	
	Preferred shutdown length in scenarios (months)	Preference for stricter measures (z-scored)	Preference for stricter rule enforcement (z-scored)
	(1)	(2)	(3)
		Panel B: Reduced Form	
Cost Treatment	0.201***	0.095***	0.024
	(0.038)	(0.021)	(0.021)
Mortality Treatment	0.145***	0.014	-0.006
	(0.038)	(0.021)	(0.021)
		Panel C: Second Stage (2SLS)	
- Perceived $\widehat{\text{econ}}$ cost	0.440***	0.213***	0.056
	(0.084)	(0.046)	(0.048)
Perceived $\widehat{\text{magnitude}}$ of mortality projections	0.377***	0.044	-0.013
	(0.091)	(0.050)	(0.053)
Observations	8,309	8,309	8,305

Notes: Results are based on the full sample less individuals with priors beliefs about the impact of 1918 shutdown measures corresponding to an unemployment rate of City B of 5 percent or lower (6% of observations). The outcome in Panel A, column 1 is based on a survey item eliciting respondents' beliefs about the economic impact of extending the April lockdown in the US until the end of June on a qualitative five-point scale. It is z-scored based on the economic cost control group and reversely coded, i.e. higher values represent lower perceived economic costs. In column 2 the outcome is based on an item asking respondents whether the projected order of magnitude of fatalities in the absence of a lockdown is higher or lower than what the respondent expected prior to taking the survey, based on a qualitative 7-point scale. It is z-scored based on the economic cost control group. In Panel B, the outcomes correspond to the respondents' choice between model-based projections mapping shutdown lengths in months to projected Covid-19 fatalities within 2020 (column 1), self-reported preferences for stricter social distancing measures (column 2) and for a stricter financial punishment of rule violations (column 3). Cost Treatment is a dummy that takes the value one for those exposed to the economic cost treatment and zero otherwise. Mortality Treatment is a dummy that takes the value one (zero) for those exposed to relatively high (low) Covid-19 fatality projections. In addition to the reported coefficients, all regressions include controls for Census region, age group, rural residence, log household income in 2019, educational attainment, political orientation, labor market status and prior beliefs about the economic impact of shutdown measures in 1918. In Panel C, the estimated IV coefficient -Perceived $\widehat{\text{econ}}$ cost can be interpreted as the effect of a one s.d. lower belief about the economic cost of a lockdown. The estimated coefficient Perceived $\widehat{\text{magnitude of}}$ mortality projections can be interpreted as the effect of a one s.d. higher perceived order of magnitude of the fatality projections. Robust standard errors are in parenthesis. *, ** and *** indicate significance at the 10 percent, 5 percent and 1 percent level, respectively.

Online Appendix to "Lives or Livelihoods? Perceived Tradeoffs and Public Demand for Non-Pharmaceutical Interventions"

Sonja Settele[1] Cortnie Shupe[2]

A Technical Details on the Treatment Values

Economic cost treatment For the economic cost treatment, we rely on Correia et al. (2020) (Working Paper version from March 26th, 2020). Our goal was to translate the research findings on the relationship between city-level lockdown measures in 1918 and economic outcomes in 1919 into a meaningful statistic that is easy to interpret for respondents. Correia et al. (2020) report that a one day longer city-level lockdown in 1918 was associated with an increase of employment in manufacturing by 0.133 log points in 1919, controlling for time and city dummies as well as for a set of control variables interacted with time dummies in a difference-in-differences framework.

Presenting these results in their raw form to laypersons would have arguably presented two challenges: First, the idea of a difference-in-difference (DD) approach may potentially be difficult to grasp, unless explained in simple words. Second, respondents might find the the log change in employment in manufacturing difficult to interpret, given that the commonly used statistic people are exposed to in the news is the overall unemployment rate. Related to the second point, Ansolabehere et al. (2013) demonstrate that individuals are able to meaningfully express beliefs and to interpret information on quantitative scales when they are familiar with the order of magnitude in which the object it measures commonly ranges. In order to mitigate both concerns, and to communicate the research findings in a simple and meaningful way, we use the following approach in our survey: First, we describe the idea of a DD approach in a way that preserves the underlying idea but abstracts from technicalities. Second, we convert the quantitative findings of Correia et al. (2020) under a few assumptions such that they correspond to the effect of a 60 days longer lockdown on the *unemployment rate* in 1919.

To communicate the idea of a DD approach in simple words, we explain that Correia et al. (2020) compare similar US cities that differed in their approach to mitigate the 1918

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influenza pandemic. We ask respondents to think of two hypothetical cities, "City A" and "City B", which are comparable previous to the onset of the pandemic, including in terms of their exposure to the virus and their pre-pandemic unemployment rate. We then state that City A was under lockdown for 30 days in 1918 and had an unemployment rate of 7% by the end of the pandemic in 1919. City B, in comparison, was under lockdown for 60 days longer and respondents are asked to estimate City B's unemployment rate in 1919.

For the information treatment, we convert the findings of Correia et al. (2020) to correspond to City B's unemployment rate in 1919. Based on the summary statistics reported in Table A2, the average share of manufacturing employment over the population was 8.33 percent in the sampling period.[3] The result of a 0.133 log points higher employment in manufacturing in 1919 for each additional day of lockdown in 1918 (see Table to of the paper) corresponds to a 7.98 percent higher employment in manufacturing for the 60 days longer lockdown of City B in 1918 ($60 * 0.133 = 0.0798$). From a baseline value of 8.33 percent for the manufacturing employment to population ratio, an 7.98 percent increase would mean a manufacturing employment to population ratio of 8.99 percent in City B. The increase compared to City A corresponds to 0.66 percentage points. To convert this value into an effect on the overall unemployment rate, we make two simplifying assumptions: First, we assume that the labor force participation rate was unaffected by city-level lockdowns and second, we assume that employment in other sectors of the economy was constant. Under a constant labor force participation rate between 50 and 70 percent, the 0.66 percentage points effect on the manufacturing employment to population ratio corresponds to an 0.94 to 1.32 percentage points decrease in the overall unemployment rate of City B compared to City A. With the unemployment rate of City A being 7 percent by the end of the pandemic, this corresponds to a 6 percent unemployment rate of City B.

Due to the assumptions we make, the treatment value of 6 percent constitutes a conservative estimate at the lower bound of the estimated positive effect of lockdowns on the economy in 1918. The qualitative message of the research findings we aim to

[3]This number is based on the "Statistical Abstract" reports of the US Census Bureau of 1914, 1919, 1921 and 1923. Given that the DD framework pools data from the pre- and the post-period and controls for period effects, we decided to rely on this number. Alternatively, we could have used the share of manufacturing employment in 1914 to the population in 1910 based on city level data, which is also reported in Table A2 of the paper. This share corresponds to a slightly higher 14.13 percent and would ultimately have lead to a qualitatively similar treatment value, corresponding to an unemployment rate in City B of 5% instead of 6%.

communicate, however, is robust to a wide range of assumptions on the development of the labor force participation rate and of the unemployment rates in sectors other than manufacturing between cities with different lockdown durations.

More recently, Lilley et al. (2020) have raised concerns that the findings of Correia et al. (2020) could be driven by a differential population growth previous to the pandemic across cities with differential policy responses in 1918. The authors of the original paper, in turn, have addressed this concern in a response to the critique (see `https://drive.google.com/file/d/1y9j5kDr6nxx3LSOLNP38s2rrxQhtD1PM/view`). While the discussion about the robustness of the research findings we rely on is important for our understanding of the effect of NPIs implemented in 1918, it is not a concern for our study. In our information treatment, we are transparent about the empirical nature of the findings of Correia et al. (2020) and we also provide the reference to the paper during the information treatment. Interested survey participants therefore have the option to look up the findings and to come to a judgement of their own.

Mortality treatment The model we apply in the mortality treatment is the S.E.I.R. model developed by Gabriel Goh, Ashleigh Tuite and David N. Fisman for the New York Times (2020).[4] Respondents have access to the parameter assumptions underlying the projections by clicking on a button that says "click here for methodological details". The information that appears when a respondent in the high mortality treatment clicks on the button reads as follows: "Methodological details: Projections are based on a S.E.I.R. (Susceptible, Exposed, Infected and Resistant) model designed by Gabriel Goh, Steven De Keninck, Ashleigh Tuite and David N. Fisman using the current state of the research with regards to the R0 (2.4), virus incubation period (5.2 days), infectious period (2.9 days), recovery time of 11.1 days for mild and 28.6 days for severe cases. The infection fatality rate, i.e. the percentage of people who contract the disease who eventually die of it, is assumed to be 2.4%. The first day of intervention is set to March 22nd. The level of intervention corresponds to a reduction in interactions across the US by 50%." In the low mortality treatment, the text is the same, except for the infection fatality rate which is set to 0.4% rather than 2.4%. We chose to provide this information not by default but upon request in order to be transparent about the inputs while at the same time avoiding to over-burden respondents with technical details.

[4]The code was made available by the authors under the following link: `https://static01.nyt.com/newsgraphics/2020/03/16/opinion-coronavirus-model-2/d268775237c095931fe2fae6015c568c0011fd76/build/js/main.js`.

Both IFR parameter values, 0.4% and 2.4% , are well within the range of values considered plausible based on the state of the research as of April 2020. The WHO, as of the time of our data collection proclaimed a case fatality rate (share of officially diagnosed cases who die) of 3.8%, which may be seen as an upper bound for the infection fatality rate (i.e. the share of those infected with Covid-19 who die). Randomized testing of a sample of 500 inhabitants of the most highly infected region of Germany in April 2020 yielded an estimated infection fatality rate of 0.37%, which is below the 0.4% we use as our model parameter in the low mortality condition.

B Interpretation of evidence based on scenarios

On the survey page where we asked respondents to choose their preferred shutdown length, our intention was to have them choose between the six scenarios with which we present them. These scenarios vary in two parameters: the length of the shutdown and the number of deaths, thereby holding fixed the effect of the length of the shutdown on the number of deaths. At the same time, other aspects - such as the economic costs of a shutdown - are left unrestricted. One potential concern could be that a fraction of respondents did not interpret the question as a choice between the six hypothetical scenarios, but rather as a question about their real-world shutdown preferences, regardless of the projected numbers of lives saved. In this section, we explore this possibility in detail.

Which interpretation does our empirical evidence support? Our data supports the view that a significant fraction of respondents indeed interpreted the question as a choice between six hypothetical scenarios. Assume that respondents interpreted the question as referring to their general shutdown preferences and not to the choice between the six outlined scenarios which link different shutdown durations with different numbers of lives saved. In that case, given that we do not observe any updating of beliefs about the actual seriousness of Covid-19 in response to the mortality conditions (Table F.3), the preferred shutdown length should purely be driven by factors that are orthogonal to the mortality condition. However, we find a substantial treatment effect of the mortality condition on the choices across scenarios (Table 2, Panel B, column 1). Thus, a substantial fraction of respondents must have interpreted the question as a choice between the six outlined hypothetical scenarios, as we had intended.

Implications for our evidence from the economic cost treatment Whether or not a fraction of respondents interpreted the shutdown length question as referring to their real world shutdown preferences irrespective of our fatality projections rather than the choice between the six scenarios (that link shutdown length to the number of lives saved) should not affect the conclusions drawn from the economic cost treatment. This is because the economic cost treatment shifted respondents' beliefs about the economic costs of NPIs, which should matter both for their real world shutdown preferences as well as for their preferences across the six hypothetical scenarios, which only fixed two parameters - the shutdown length and number of deaths. In addition, we also find a significant effect of the economic cost treatment on the demand for stricter shutdown interventions to mitigate the spread of the virus (see Table 2, Panel B, column 2) – an outcome referring to an actual policy intervention in the real world. Note that the fact that we detect significant movement in this outcome also addresses the potential concern that choices across the hypothetical shutdown scenarios might be less meaningful than responses to questions on real-world policy preferences.

Implications for our evidence from the mortality treatment Whether or not a fraction of respondents interpreted the shutdown length question as referring to their real world shutdown preferences instead of the choice between the six scenarios affects the interpretation of the magnitude of the estimated effects of the mortality treatment. To see this, note that the first stage for the mortality treatment is based on a survey measure that elicits, on a qualitative 7-point scale, how large or small the respondent found the mortality projections compared to what she expected prior to taking the survey. Thus, the compliant subpopulation in this 2SLS estimate will consist of those respondents who can meaningfully interpret the projected numbers of fatalities in the scenarios.

The "second stage" treatment effect, i.e. the effect of the perceived order of magnitude of the mortality projections on the demand for a shorter or longer shutdown will be driven by those respondents within the compliant subpopulation who, in addition, actually interpreted the question as a choice across the six outlined scenarios. If this subset constitutes less than 100 percent of the compliant subpopulation, the 2SLS estimate will constitute a lower bound of the actual effect of the perceived order of magnitude of the number of deaths on shutdown preferences. To understand this point, imagine a case where the share of respondents who interpreted the question as a choice between hypothetical scenarios increases from less than 100 percent to 100 percent of the compliant subpopulation. The magnitude of the reduced form effect would then increase, while the first stage effect would remain unchanged (conditional on no updating of beliefs about actual mortality, which is the case in our data). Consequently, our 2SLS evidence should be interpreted as a conservative lower bound, as $\beta^{2\hat{S}LS} = \frac{\beta^{red.\hat{f}orm}}{\beta^{first\hat{s}tage}}$.

C 2SLS Regressions: Specification Details

To gain a better understanding of the order of magnitude in which individually perceived economic costs and health benefits of shutdown measures affect the demand for such interventions, we apply an instrumental variables approach. The idea is to scale the reduced form effect of our two treatments by the first-stage effect of the treatments on respondents' cost-benefit perceptions.

We apply the following IV regression framework:

$$\begin{aligned}
1^{st} Stage: \text{Perceived econ. cost}_i &= \pi_0 + \pi_1 T_i^{Cost} + \pi_2 T_i^{HighMort.} + \Theta' X_i + u_i \\
\text{Perc. magnitude mort. projection}_i &= \gamma_0 + \gamma_1 T_i^{Cost} + \gamma_2 T_i^{HighMort.} + \Gamma' X_i + u_i \\
2^{nd} Stage: Y_i = \beta_0 + \beta_1^{IV} &\text{Perc. } \widehat{\text{econ.}} \text{ cost}_i + \\
&\beta_2^{IV} \text{Perc. magnitu}\widehat{\text{de mo}}\text{rt. projection}_i + \delta' X_i + \varepsilon_i \qquad \text{(C.1)}
\end{aligned}$$

In the first stage, we separately instrument i) respondents' beliefs about the economic impact of a longer shutdown and ii) respondents' perceived health benefits of a longer shutdown. We again proxy beliefs about the economic impact of a shutdown by our most general measure of perceived economic costs.[5] Similarly, we proxy perceived health benefits of a longer shutdown by the perceived order of magnitude of projected Covid-19 fatalities the respondent was exposed to.[6] Random assignment to the economic cost and the high mortality treatment condition, respectively, serve as exogenous instruments.[7] In the second stage, we then estimate the causal effect of beliefs about the costs and benefits of a longer lockdown on demand for NPIs based on the compliant subpopulation whose beliefs are shifted.

Given that we have excluded the six percent of respondents who hold prior beliefs about the economic impact of lockdowns in 1918 that are more optimistic than the treatment signal, monotonicity should hold for the economic cost treatment. For the mortality treatment, monotonicity should hold as well because one would expect a given respondent

[5]See the first-stage outcome variable in Panel A of Table 2, column 1.

[6]See the first-stage outcome variable in Panel A of Table 2, column 2.

[7]Note that we apply the same framework for all three outcomes for the sake of consistency, but only expect an effect of the perceived health benefits (as proxied by the perceived magnitude of the number of lives that may be saved through a lockdown) on the preferred length of lockdown, but not on the other two outcomes, as we do not intend to shift mortality beliefs due to ethical considerations.

assigned to the high mortality condition to perceive the projected number of fatalities as higher, or at least not lower, than she would in a hypothetical counterfactual scenario in which she had been assigned the low mortality condition. The first-stage F-statistic is well above 10 for both first stage regressions (see Table 2, Panel A, columns 1 and 2), lending credence to instrument relevance. Regarding the exclusion restriction, one should note that beliefs generally consist of several related aspects. For instance, in our context, shifting beliefs about the economic impact of a two-month lockdown extension will arguably have spillover effects on beliefs over the impact of a three-month lockdown extension. Therefore, our IV approach should be carefully interpreted as a scaling exercise that allows us to better understand the magnitude of estimated effects.[8] We present the IV results in Panel C of Table 2 (column 1).

D Back-of-the-Envelope Calculation

Democrats and Republicans in the economic cost control group differ by a 0.42 standard deviation in their prior beliefs about the economic cost of a lockdown (unreported regression result). This effect corresponds in size to the estimated first stage effect of the economic cost treatment on posterior beliefs (Table 2 in the main paper, Panel A, Column 1). We compare the Democrat-Republican difference in the preferred shutdown length (0.8 of a month, see Table 1) to the causal effect of the economic cost treatment on preferred shutdown length (0.2 of a month, see Table 2, Panel B, column 1). By doing so, we find that the causal effect of the different beliefs of Democrats and Republicans accounts for one fourth of the partisan difference in the preferred shutdown length. Similarly, we compare the Democrat-Republican difference in the preferred strictness of a lockdown (0.5 standard deviations, see Table 1) to the estimated effect of the economic cost treatment on preferred strictness (0.1 standard deviations, see Table 2, Panel B, column 2). We find that one fifth of the partisan difference in the preferred strictness of regulations can be accounted for by the causal effect of partisan differences in beliefs about the economic impact of a lockdown.

E Robustness

Experimenter Demand One commonly raised concern in survey experiments on political opinions are experimenter demand effects: if respondents believe the survey to be

[8]For another application of a 2SLS framework to interpret the order of magnitude of causal belief effects, see Haaland and Roth (2020) who study the effect of beliefs about the labor market impact of immigrants on preferences regarding immigration policy.

politically motivated, they may aim to express opinions that are in line with what they perceive to be the experimenter's political agenda. Even though experimenter demand effects have been shown to be of little empirical relevance (Mummolo and Peterson, 2019; De Quidt et al., 2018), we provide supplementary evidence suggesting that experimenter demand effects are unlikely to act as a mechanism behind our main estimated treatment effect. First, when asked at the end of the survey, more than 80 percent of respondents state that they perceived the survey to be politically unbiased. More importantly, perceived political bias is generally highly similar across treatment arms (see Table G.8): the high mortality as compared to the low mortality condition has no effect on perceived political bias. Similarly, respondents exposed to the economic cost treatment are equally likely as the control group to perceive no political bias or a left-wing political bias. They are one percentage point less likely to perceive a right-wing bias, but this effect is economically very small and its statistical significance should be interpreted in light of our highly powered large sample.

In addition, more than 80 percent of those who received the economic cost treatment found the information trustworthy and more than 90 percent found it relevant for the decision on whether to keep interventions in place to mitigate the spread of Covid-19. These high percentages are reassuring because, together with the strong first-stage treatment effects, they suggest that the effect of the economic cost treatment on policy demand is driven by an information channel and respondents' updating of their beliefs about the economic costs of a lockdown, rather than by experimenter demand effects.

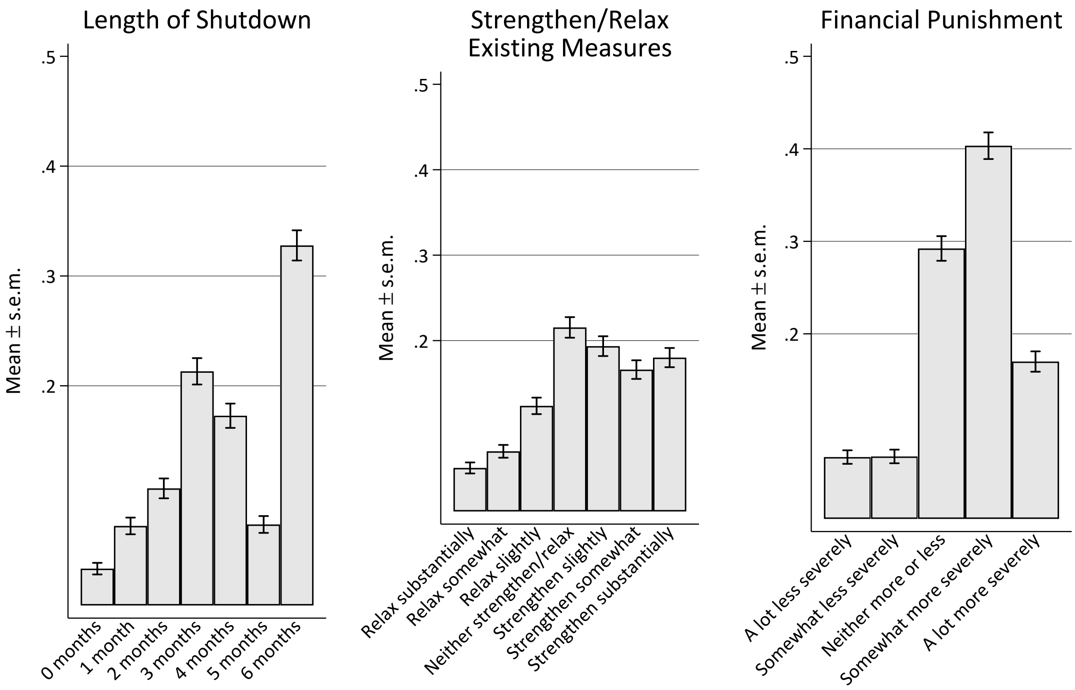
Heterogeneity by prior beliefs A further concern for the interpretation of our results may arise if respondents react to priming, rather than learning from the economic cost information treatment. To address this concern, Figure F.7 plots heterogeneous treatment effects according to prior beliefs about the unemployment impact of the 1918 Influenza shutdown measures. Reassuringly, we find that the updating of beliefs about the economic impact of lockdowns is larger, the larger the initial perception gap, i.e. the more prior beliefs deviate from the treatment signal. These patterns translate into similar patterns in the reduced form results on demand for NPIs. Note that we still find some updating towards a higher net economic benefit of lockdowns among those with initially positive beliefs about the historical effect of lockdowns. This type of pattern is not uncommon in experimental designs that compare a treatment group to a pure control group and may be driven, for instance, by a reduced uncertainty around the beliefs of treated respondents.

Lastly, note that prior beliefs are not randomly distributed in the population, which is generally a challenge for experimental designs that compare a treatment group that receives information to a control group that does not receive information. Arguably, respondents with very high beliefs about the post-pandemic unemployment rate in City B may have different characteristics, for instance in terms of numeracy and education, than those with more reasonable prior beliefs to start with. If we drop individuals with exceedingly pessimistic beliefs from the sample, the patterns of heterogeneity in Figure F.7 become more pronounced, i.e. those for whom the information shock should arguably be largest update most in response to the treatment. Overall, the patterns of heterogeneity in Figure F.7 suggest that changes in beliefs due to learning from information is an important driver of our treatment effects.

In the mortality treatment, where we compare individuals exposed to higher vs. lower projections of Covid-19 fatalities, priming is, by definition, constant across treatment arms.

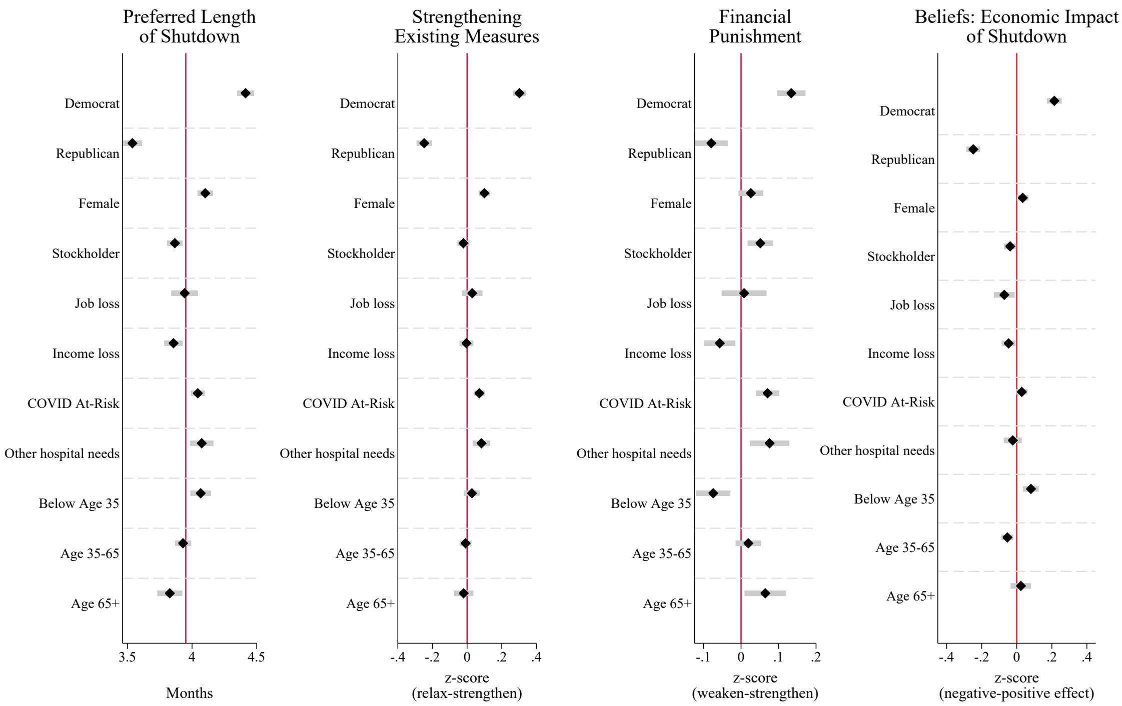
F Additional Figures

Figure F.1: Distribution of Preferences for Non-Pharmaceutical Interventions



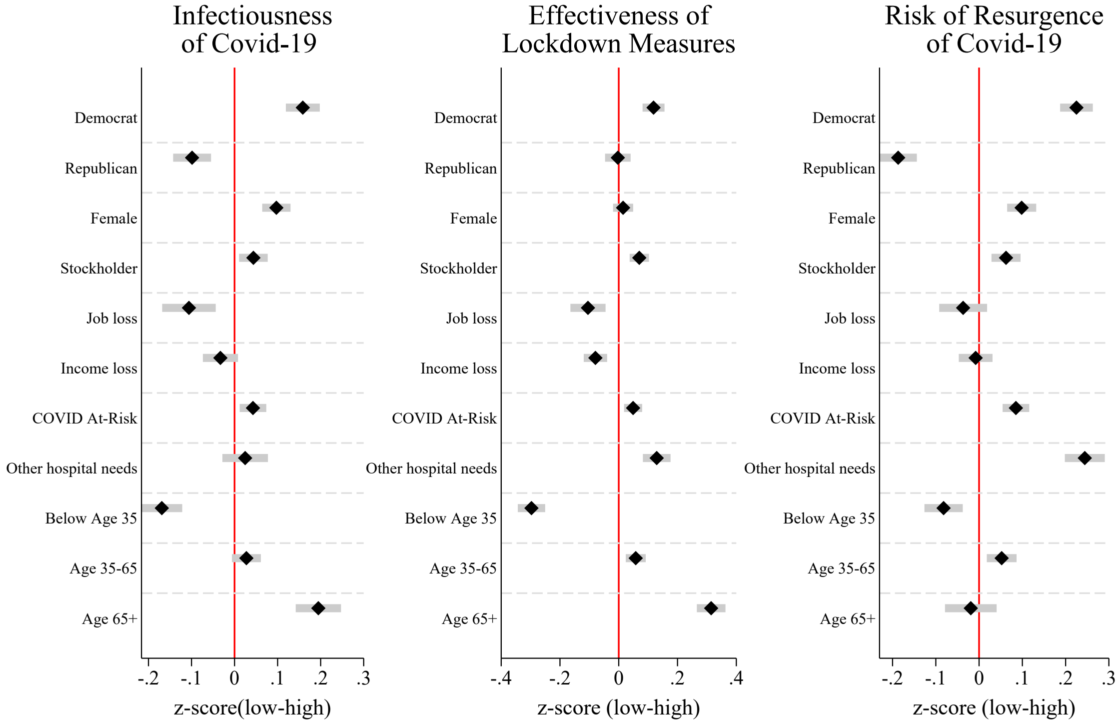
Notes: For this figure, the sample is restricted to the economic cost control group, with those in the high and the low mortality treatments pooled together. The left panel shows the distribution of responses to a survey item asking for respondents' preferred length of lockdown based on a set of projected scenarios linking shutdown lengths to Covid-19 fatalities. The center panel displays responses to the question, *"Do you think the government should further strengthen mandatory social distancing, stay-at-home orders, closure of non-essential businesses and restaurants, and major limitations in transportation or relax these measures?"* The right panel shows responses to the question, *"Do you think that risky behaviors that might enable further spread of the coronavirus should be financially punished more or less severely?"*

Figure F.2: Demand for Mandatory Social Distancing and Beliefs about Economic Impact



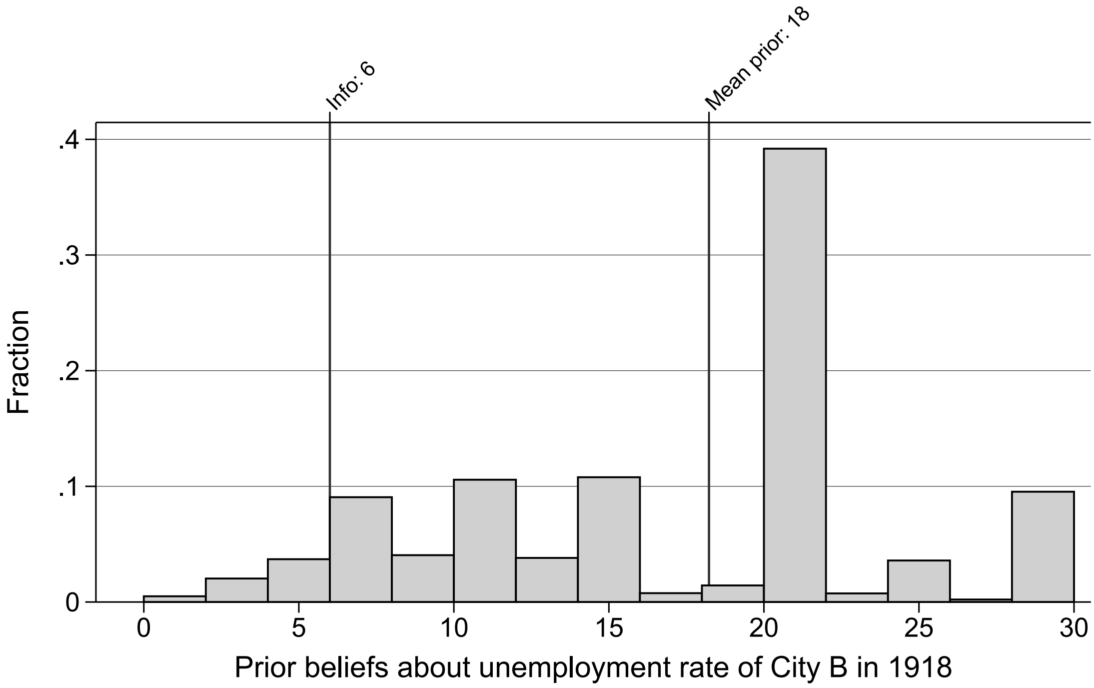
Notes: All subfigures show subsample means based on the economic cost control group (N=4,475). The subfigure titled "Preferred Length of Shutdown" displays the average number of months respondents prefer lockdown measures to last based on a set of projected scenarios linking shutdown lengths to Covid-19 fatalities. For the subfigure titled "Strengthening Existing measures", the underlying survey item is "Do you think the government should further strengthen mandatory social distancing, stay-at-home orders, closure of non-essential businesses and restaurants, and major limitations in transportation or relax these measures? [7-point answer scale ranging from "Relax substantially" to "Strengthen substantially"]. The mean response, centered at zero in the figure, corresponds to slightly strengthening existing measures. For the subfigure titled "Financial Punishment", the underlying survey item is "Do you think that risky behaviors that might enable further spread of the coronavirus should be financially punished more or less severely" [5-point answer scale ranging from "A lot less severely" to "A lot more severely"], where zero corresponds to slightly strengthening existing measures. The subfigure titled "Beliefs: Economic Impact of Shutdown" is based on the following survey item: "(...) please consider only the economic impact of these measures. To what extent do you personally agree or disagree with the following statement? 'Keeping the shutdown in place until the end of June 2020 will be worse for the US economy than lifting the shutdown at the end of April.' " [5-point-scale ranging from "Strongly disagree" to "Strongly agree"]. More negative values correspond to more negative beliefs and zero corresponds to "Somewhat disagree".

Figure F.3: Beliefs about Covid-19 Fatality, Infectiousness, Risk of Resurgence and Efficacy of Shutdown Measures



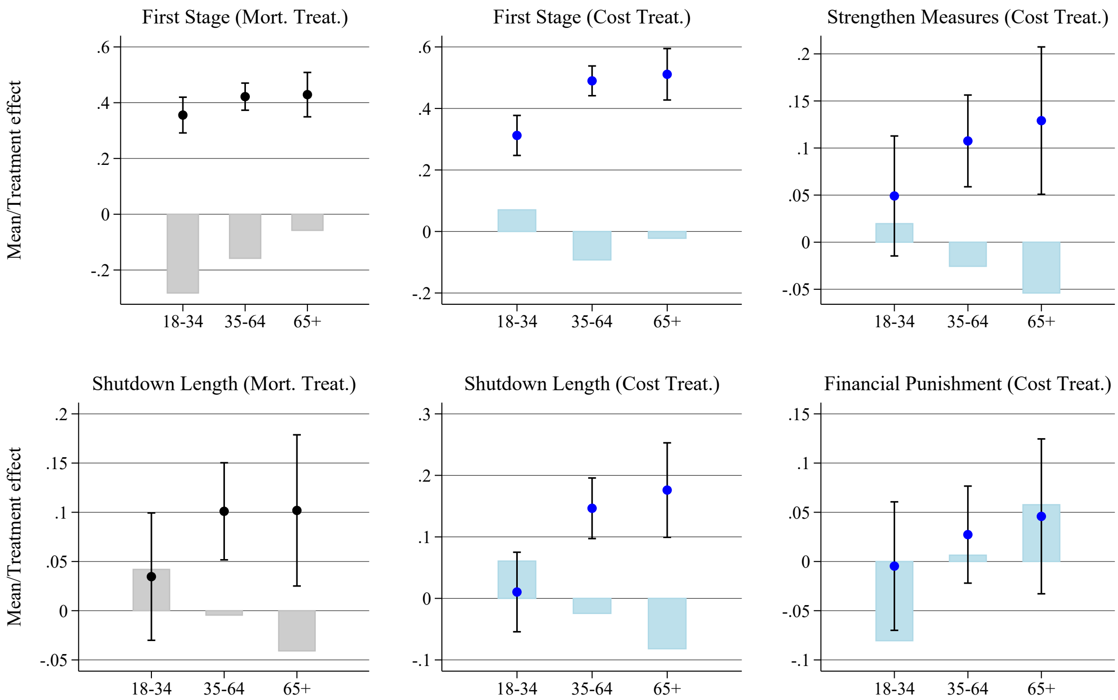
Notes: All subfigures show standardized sample means based on the economic cost control (N=4,475). The survey item for beliefs about the infectiousness and the mortality of Covid-19 was the following: "Compared to a regular flu, how would you rate the following aspects of Covid-19? Infectiousness [5-point scale ranging from "much less severe" to "much more severe"], Mortality [5-point scale ranging from "much less severe" to "much more severe"]. The mean response, re-centered in this figure at zero, corresponds to the answer "more severe" for both outcomes. The survey item for beliefs about the effectiveness of lockdown measures was "On a scale from 0 (not at all effective) to 10 (highly effective), how effective do you think social distancing measures have been in cities that have them in place? [11-point scale ranging from 0 to 10]. The mean response, centered at zero, corresponds to 7.3. The survey item for beliefs about the risk of a resurgence was "On a scale from 0 (negligible) to 10 (very high), how high would you rate the risk of resurgence of the Covid-19 pandemic in the coming months, in the case the shutdown would be lifted? [11-point scale ranging from 0 to 10]. The mean response corresponds to 7.0

Figure F.4: Prior Beliefs about the Economic Impact of Shutdowns in 1918



Notes: Distribution of beliefs about unemployment rate of "City B" in 1918, based on the prior belief elicitation of economic costs, shown in detail in 2.1 of the instructions. The survey question informs respondents that during the 1918 influenza City A was under lockdown for 1 month and had an unemployment rate in the manufacturing sector of 7% by the end of the pandemic in 1919. They are then asked for their beliefs about the unemployment rate of City B, which was under lockdown in 1918 for 3 months. For the histogram, we top-coded prior beliefs at 30. (6% of respondents had a prior belief between 31 and 100.) The mean prior of 18 is based on the full distribution of prior beliefs. The treatment value, i.e. the information about the true unemployment rate of City B in 1919 corresponds to 6% and implies a negative signal for more than 94% of our sample.

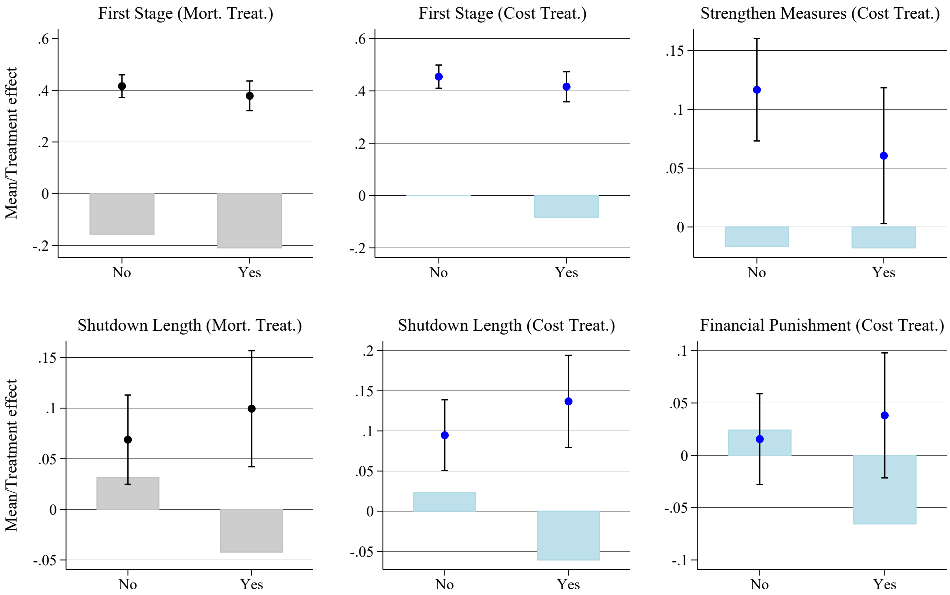
Figure F.5: Heterogeneity at Baseline and in Elasticities by Age



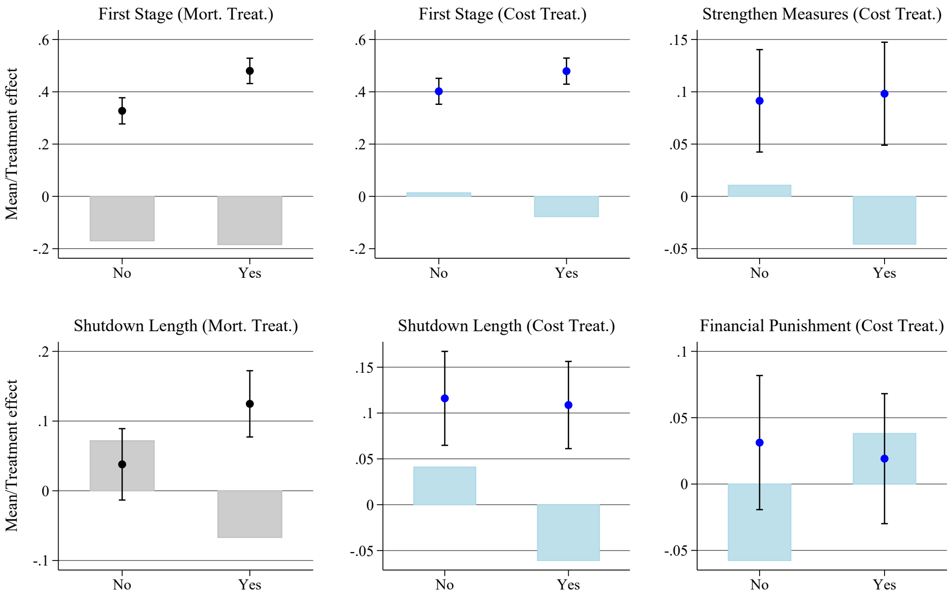
Notes: Heterogeneous effects for the first stage and reduced form regression results presented in the main results table (Table 2). The sample is identical to that in Table 2, but split according to age group. For the grey (blue) bars, the sample is additionally restricted to respondents in the low mortality condition (economic cost control group). Bars show sample means, without additional controls. The point estimates including 90 percent confidence intervals show treatment effects for the economic cost treatment in blue and for the high mortality compared to the low mortality condition in black. All causal regressions include the same control variables used in the main results table (Table 2).

Figure F.6: Control Group Means and Treatment Effects by Measures of Financial Exposure

(a) Experienced Recent Income Loss

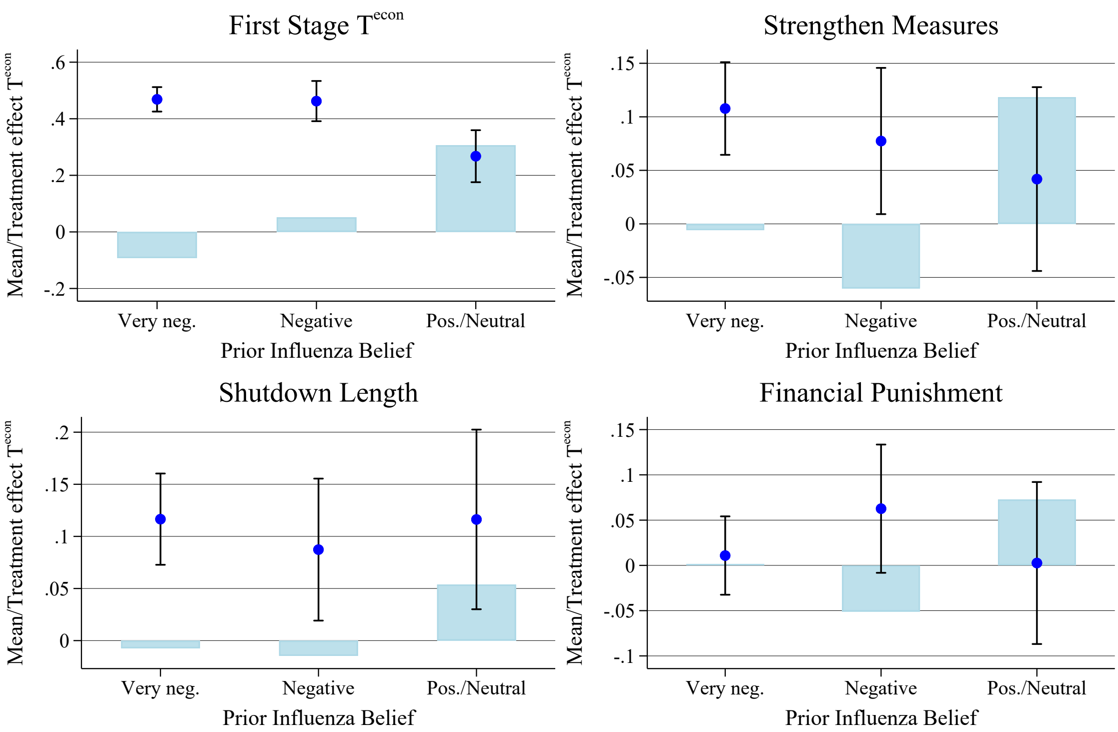


(b) Any Stock Holdings



Notes: Heterogeneous effects for the first stage and reduced form effects shown in the main results table (Table 2). The sample is identical to that in Table 2, but split according to the event of household income loss during the pandemic (Panel a) or stock ownership (Panel b). Individuals considered to have income loss (Panel a) answer the following question with "much lower" or "lower": *"Is the current total net income from all members of your household (including you) higher or lower than you had expected at the beginning of the year, i.e. before the start of the current crisis?"* (38 percent of the sample) Stock holders (Panel b) are all those who self-report to hold any stocks or stock mutual funds (50 percent of the sample). Inc. loss is based on a categorical variable asking respondents if their current total net income from all members of the household was higher or lower than what the respondent had expected at the beginning of the year on a five-point scale. It is coded to one for those with a (much) lower than expected (38 percent of the sample). For the grey (blue) bars, the sample is additionally restricted to respondents in the low mortality condition (economic cost control group). Bars show sample means, without additional controls. The point estimates including 90 percent confidence intervals show treatment effects for the economic cost treatment in blue and for the high mortality compared to the low mortality condition in black. All causal regressions include the same control variables used in the main results table (Table 2).

Figure F.7: Heterogeneity by Prior Beliefs about the Economic Impact of a Lockdown



Notes: Heterogeneous effects for the first stage and reduced form effects shown in the main results table (Table 2). All subfigures are based on the full sample, including respondents whose prior beliefs about the unemployment impact of the 1918 Influenza shutdown measures are more optimistic than the treatment signal. Respondents are then divided into subgroups based on their beliefs about the unemployment effect of a longer shutdown (City B compared to City A) during the 1918 Influenza. "Pos./Neutral" refers to prior beliefs corresponding to a positive or neutral effect of shutdown measures in 1918 (unemp. in City B below 8%), "Negative" refers to prior beliefs between 8 and 14 percent, i.e. a perceived negative impact of lockdowns in 1918, corresponding up to double the unemployment level in City B as compared to City A. "Very neg." denotes priors amounting to more than double the expected unemployment rate in City B compared to City A (above 14%). Results are qualitatively similar with a median or mean cutoff for high and low priors. Bars depict the baseline mean of each outcome in the economic cost control group. Point estimates and a 90% confidence interval for each outcome stem from separate regressions by subgroup and show the economic cost treatment effect controlling for gender, Census region, age group, rural zip code, log household income in 2019, educational attainment, political orientation, labor market status in January 2020 and mortality treatment group status.

G Additional Tables

Table G.1: Sample Characteristics Compared to US Population

	Mean: Representative Sample	Mean: U.S. Adult Population
Northeast	0.18	0.17
Midwest	0.21	0.21
South	0.38	0.38
West	0.23	0.24
Age 18-24	0.12	0.12
Age 25-34	0.17	0.18
Age 35-44	0.19	0.16
Age 45-54	0.16	0.16
Age 55-64	0.18	0.18
Age 65+	0.18	0.19
Female	0.52	0.51
Male	0.48	0.49
Annual hh inc 2019 > $50,000	0.62	0.62
Annual hh inc 2019 <= $50,000	0.38	0.38
Employed in Jan 2020	0.61	0.71
Not employed in Jan 2020	0.39	0.29
4-year college degree+	0.45	0.23
Democrat	0.36	0.30
Republican	0.33	0.30
Independent	0.26	0.36

Notes: Sample size for the left-hand column: N = 8,861 (full sample). The right-hand column is based on the adult US population in the ACS 2018 except for political orientation which is based on Gallup Party & Affiliation Issues (2020).

Table G.2: Sample Characteristics in Treatment and Control Groups

	Full Sample	Cost Treatment	Cost Control	High Mortality Scenarios	Low Mortality Scenarios	p-value (2) = (3)	p-value (4) = (5)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Female	0.52	0.52	0.52	0.52	0.51	0.884	0.736
Northeast	0.18	0.17	0.18	0.18	0.17	0.630	0.514
Midwest	0.21	0.20	0.22	0.20	0.22	0.121	0.168
South	0.38	0.39	0.37	0.38	0.38	0.054	0.547
West	0.23	0.23	0.23	0.23	0.23	0.778	0.963
Age 18-24	0.12	0.12	0.12	0.12	0.12	0.615	0.870
Age 25-34	0.17	0.17	0.17	0.18	0.17	0.987	0.258
Age 35-44	0.19	0.19	0.19	0.18	0.19	0.751	0.249
Age 45-54	0.16	0.16	0.17	0.16	0.16	0.145	0.976
Age 55-65	0.17	0.18	0.17	0.18	0.17	0.223	0.647
Age 65+	0.18	0.18	0.18	0.18	0.18	0.757	0.774
Democrat	0.36	0.36	0.37	0.36	0.36	0.617	0.793
Republican	0.33	0.33	0.33	0.33	0.34	0.660	0.447
Independent	0.26	0.27	0.26	0.27	0.26	0.540	0.172
Other pol. ident.	0.04	0.04	0.04	0.04	0.04	0.237	0.561
Log HH income	10.78	10.79	10.77	10.75	10.82	0.600	0.049
Bachelor degree +	0.45	0.44	0.45	0.44	0.45	0.302	0.656
Employee	0.54	0.53	0.55	0.54	0.54	0.250	0.840
Self-employed	0.07	0.07	0.06	0.06	0.07	0.149	0.017
Unemployed	0.05	0.05	0.05	0.06	0.05	0.895	0.118
Not in labor force	0.30	0.30	0.29	0.30	0.29	0.883	0.791
Observations	8,861	4,386	4,475	4,418	4,443		

Notes: Columns 1 to 5 show sample means across subgroups. Column 6 shows p-values from t-tests comparing the mean of each variable between subjects who received and who did not receive the economic cost treatment. Column 7 shows p-values to test for sample balance between the high and the low mortality condition. The p-value of a joint F-test when regressing the economic cost treatment dummy on the full set of covariates is 0.75. For the high mortality dummy the same exercise yields a p-value of 0.45.

Table G.3: Effect of Treatments on Beliefs Related to Covid-19

	Belief about infectiousness (z)	Belief about mortality(z)	Perceived risk of resurgence (z)	Belief about NPI effectiveness (z)
	(1)	(2)	(3)	(4)
Cost Treatment	-0.014	-0.006	0.001	0.029
	(0.022)	(0.021)	(0.022)	(0.021)
Mortality Treatment	-0.008	0.025	-0.034	-0.028
	(0.022)	(0.021)	(0.022)	(0.021)
Observations	8,309	8,309	8,206	8,225

Notes: Sample and control variables identical to those in main results table (Table 2). "Cost Treatment" is a dummy that takes the value of one for those exposed to the economic cost treatment. "High mortality" is a dummy equal to one for those exposed to the high mortality scenarios when choosing their preferred length of shutdown. Outcomes in columns 1-4 are standardized based on the means and standard deviations in the economic cost control group, pooling both mortality conditions. For outcomes in columns 1 and 2, respondents rate, respectively, the infectiousness and mortality of Covid-19 compared to a regular flu on a 5-point scale ranging from "much less severe" to "much more severe". The outcome in column 3 refers to the question, *"On a scale from 0 (negligible) to 10 (very high), how high would you rate the risk of resurgence of the COVID-19 pandemic in the coming months, in the case the shutdown would be lifted?"* Column 4 refers to the question, *"On a scale from 0 (not at all effective) to 10 (highly effective), how effective do you think social distancing measures have been in the cities that have them in place?"* Divergent observation numbers in columns 3 and 4 are due to missing responses for the respective outcome variables. Robust standard errors are in parenthesis. *, ** and *** indicate significance at the 10 percent, 5 percent and 1 percent level, respectively.

Table G.4: Economic Cost Treatment Effects

	Extension by two weeks better (z)	Extension by one month better (z)	Extension by three months better (z)	Extension by six months better (z)	Index (1) - (4)
	(1)	(2)	(3)	(4)	(5)
Cost Treatment	0.268***	0.417***	0.561***	0.492***	0.377***
	(0.022)	(0.022)	(0.023)	(0.023)	(0.018)
Observations	8,309	8,309	8,309	8,309	8,309

Notes: Sample and control variables identical to those in main results table (Table 2). "Cost Treatment" is a dummy that takes value one for those exposed to the economic cost treatment. "High mortality" is a dummy that takes value one for those exposed to the high mortality scenarios when choosing their preferred length of shutdown. Outcomes in columns 1-4 are standardized based on the means and standard deviations in the economic cost control group, pooling both mortality conditions. They correspond to the perceived cost of a lockdown extension of different lengths on the US economy in one year from the survey date, based on the question, *"How do you think the situation of the US economy one year from now would be affected by an extension of these measures beyond mid-April by..."* and a 7-point scale ranging from strongly negatively to strongly positively for each possible extension length. The outcome in column 5 is a summary index over the outcomes in columns 1-4, using the weighing method described in Anderson (2008). Robust standard errors are in parenthesis. *, ** and *** indicate significance at the 10 percent, 5 percent and 1 percent level, respectively.

Table G.5: Extrapolation from the Economic Cost Treatment to Personal Situation

	Perceived effect of shutdown extension on		
	(1)	(2)	(3)
	Lab. inc	Total hh inc.	Wealth
Cost Treatment	0.095***	0.081***	0.099***
	(0.023)	(0.022)	(0.022)
Observations	7,487	8,293	8,292

Notes: Sample and control variables identical to those in main results table (Table 2). Differing numbers of observations across columns are due to a survey coding error leading to missing observations for the respective outcome of interest. "Cost Treatment" is a dummy that takes the value of one for those exposed to the economic cost treatment. All outcomes stem from the question, *"How do you think the following aspects of your life would be affected if the shutdown were to continue until the end of June, as compared to if it were lifted in mid-April?"*. Response options range, on a 7-point scale, from "strongly negatively" to "strongly positively" and responses are standardized based on the economic cost control group. Robust standard errors are in parenthesis. *, ** and *** indicate significance at the 10 percent, 5 percent and 1 percent level, respectively.

Table G.6: First-Stage and Reduced Form Treatment Effects (Full Sample)

	- Perceived econ. costs (z-scored)	Perceived magnitude of mortality projections (z-scored)	
	(1)	(2)	
		Panel A: First Stage	
Cost Treatment	0.436***	0.035*	
	(0.021)	(0.021)	
Mortality Treatment	-0.016	0.410***	
	(0.021)	(0.021)	
	Preferred shutdown length in scenarios (months)	Preference for stricter measures (z-scored)	Preference for stricter rule enforcement (z-scored)
	(1)	(2)	(3)
		Panel B: Reduced Form	
Cost Treatment	0.195***	0.090***	0.019
	(0.037)	(0.020)	(0.021)
Mortality Treatment	0.146***	0.018	-0.001
	(0.037)	(0.020)	(0.021)
Observations	8,861	8,861	8,857

Notes: This table replicates first stage and reduced form results from Table 2 using the full sample (including those with prior beliefs that longer City-level lockdowns in the US during the 1918 Influenza Pandemic lead to better medium-run employment outcomes by the end of the pandemic in 1919). Robust standard errors are in parenthesis. *, ** and *** indicate significance at the 10 percent, 5 percent and 1 percent level, respectively. All other notes from Table 2 apply.

Table G.7: First-Stage and Reduced Form Treatment Effects with Interaction Terms

	- Perceived econ. costs (z-scored)	Perceived magnitude of mortality projections (z-scored)	
	(1)	(2)	
		Panel A: First Stage	
Cost Treatment	0.455***	0.016	
	(0.030)	(0.032)	
Mortality Treatment	-0.000	0.398***	
	(0.030)	(0.030)	
Cost Treat x Mort. Treat	-0.031	0.008	
	(0.043)	(0.042)	
	Preferred shutdown length in scenarios (months)	Preference for stricter measures (z-scored)	Preference for stricter rule enforcement (z-scored)
	(1)	(2)	(3)
		Panel B: Reduced Form	
Cost Treatment	0.270***	0.105***	0.017
	(0.054)	(0.030)	(0.030)
Mortality Treatment	0.213***	0.025	-0.013
	(0.054)	(0.030)	(0.031)
Cost Treat x Mort. Treat	-0.138*	-0.021	0.015
	(0.076)	(0.042)	(0.043)
Observations	8,309	8,309	8,305

Notes: Sample and outcome variables identical to those in the main results table (Table 2). This table shows regressions including dummies for the economic cost treatment and the high mortality condition as well as their interaction. All additional control variables are identical to those in main results table. Robust standard errors are in parenthesis. *, ** and *** indicate significance at the 10 percent, 5 percent and 1 percent level, respectively. All other notes from Table 2 apply.

Table G.8: No Role for Experimenter Demand Effects

	Left-wing bias	No political bias	Right-wing bias
	(1)	(2)	(3)
Cost Treatment	0.004	0.009	-0.014**
	(0.007)	(0.009)	(0.006)
Mortality Treatment	0.005	-0.007	-0.003
	(0.007)	(0.009)	(0.006)
Sample mean	0.11	0.81	0.08
Observations	8,309	8,309	8,309

Notes: Sample and control variables identical to those in main results table (Table 2). Columns show all possible answers to the question, *"Did you feel this survey was politically biased?"*. Resondents may answer, *"Yes, right-wing biased"*, *"Yes, left-wing biased"* or *"No, not politically biased."* The outcome in column 1 (column 3) is a dummy that takes value one if the respondent perceives the survey to have a left-wing bias (right-wing bias). In column 2, the outcome is a dummy for no perceived political bias. Robust standard errors are in parenthesis. *, ** and *** indicate significance at the 10 percent, 5 percent and 1 percent level, respectively.