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ABSTRACT

Unequal Consequences of COVID-19 across Age and Income: Representative Evidence from Six Countries*

Covid-19 and the measures taken to contain it have led to unprecedented constraints on work and leisure activities, across the world. This paper uses nationally representative surveys to document how people of different ages and incomes have been affected across six countries (China, South Korea, Japan, Italy, UK and US). We first document changes in income/work and leisure. Second, we document self-reported negative and positive non-financial effects of the crisis. We then examine attitudes towards recommendations (wearing a mask in particular) and the approach taken by public authorities. We find similarities across countries in how people of different generations have been affected. Young people have experienced more drastic changes to their lives, and overall they are less supportive of these measures. These patterns are less clear across income groups: while some countries have managed to shield lower income individuals from negative consequences, others have not. We also show that how people have been affected by the crisis (positively or negatively) does little to explain whether or not they support measures implemented by the public authorities. Young people are overall less supportive of such measures independently of how they have been affected.

JEL Classification: E24, I14, I31

Keywords: COVID-19, inequality, age, income, cross-country comparison

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1 Introduction

The Covid-19 pandemic has affected almost all countries in the world and has led to unprecedented measures being implemented to contain the virus. Countries have differed in their response to the epidemic. Some adopted stringent measures, such as shelter-in-place order, while others implemented early and widespread testing and tracing procedures.

The adjustments required to contain the epidemic have had a dramatic impact on how we live, on our ability to work and on our leisure activities. A key concern is that the groups that have been affected most by the measures taken are not the ones who face the highest risks of severe illness. Such misalignment between personal incentives and burdens on the one hand, and public health concerns on the other hand, are a main challenge in devising and implementing effective public policies.

Without evidence that improves our understanding on the nature of such misalignment, our ability to contain the epidemic and reduce economic and social damages is limited. This paper offers survey-based evidence from six countries on the heterogeneous nature of the economic and social consequences of Covid-19 along with information on behavioral response to the crisis and attitudes towards government measures that have been implemented. Our work complements preliminary evidence put forward in a few recent studies focusing on specific countries and specific aspects (economic) of the crisis such as Adams et al. (2020), Montenovo et al. (2020), Fairlie et al. (2020), von Gaudecker et al. (2020).

We document how the experience of the epidemic and measures that have been implemented have differed according to two key individual characteristics: age and income. The evidence is based on data collected in the third week of April 2020 on samples of around 6,000 individuals from three Western countries—US, UK and Italy—and three Asian countries—China, Japan and South Korea (Belot et al., 2020). The samples are nationally representative on three dimensions: age, gender and income. Hence, the focus of the paper is on how age and income gradients relate to the Covid pandemic.

At the time of data collection, countries we examined were at different phases of the epidemic and had implemented different measures.[1] These differences, on top of differences in other factors (such as cultural attitudes), can all contribute to explain the cross-country differences in the nature of the Covid-19 effects. Instead of identifying the causes of such differences, this paper marks a first step in understanding how the pandemic has affected different age and income groups across countries.

First, we document objective changes in two key aspects of life: (1) work and income; and (2) leisure and social life. In particular, we examine declines in household income due to the pandemic and the ability of individuals to working from home (i.e. teleworking) during the pandemic. Next, we look at how people reduced the frequency of different be-

[1]See for the six countries, in Figures A1 and A2 of the Online Supplementary Material, how the data collection time window overlaps with the time series of the number of confirmed infected people and deaths per million inhabitants together with the stringency index of government policies to contain the pandemic, based on the Oxford Covid-19 Government Response Tracker data (Hale et al., 2020).

haviors that have a social component—attending large social gatherings, visiting family and friends, and going to large close or open public spaces.

Second, we examine subjective non-financial consequences that individuals report experiencing. Negative effects we consider include boredom, loneliness, trouble sleeping, anxiety and stress, and conflicts with friends and neighbors. These negative, non-financial effects are potentially important because they speak to the burden of complying with measures to contain the pandemic and also shape incentives for individuals to follow social distance measures. Positive effects we examine include spending more time with family, enjoying more free time, and reductions in pollution and noise.

Third, we look at a measure of a specific *behavior* that has aspects of solidarity and precaution, in particular, wearing a mask. In the presence of strong externality, the benefits of wearing a mask are understood to be not only to protect oneself but also to reduce chances of transmitting the corona virus to other people (Chu et al., 2020; Howard et al., 2020).

Finally, we examine measures of support for the approach taken by each country's government, and examine to what extent differences in support can be explained by differences in the impact of the pandemic on individuals.

2 Materials and Methods

2.1 Data

We use publicly available data that was collected by Belot et al. (2020) between April 15 and April 23. This dataset includes 6,082 respondents; roughly 1000 from each of six countries. Three Asian countries (China, Japan and South Korea) and three western countries (Italy, the United Kingdom and the United States). For each country, the sample is nationally representative along age, gender, and household income. In the United States the data includes respondents from the 4 most populous states: California, Florida, New York and Texas. American respondents self-identify their race, and the sample is also nationally representative along this dimension.

2.2 Methods

Our analysis is based on ordinary least square models (or linear probability models when the outcome is binary). The right hand side variables include age and income dummies, as well as additional control variables such as gender, a rural-urban indicator, and regional dummies. The age categories we consider are: below 25 (between 18 and 25), 26-45, 46-65 and above 65. For income, we use the categorical variable indicating the household income quintile as reported by the respondent.

We first examine the extent to which groups of different ages and income quintiles have been affected differently in their economic situation and in their social life. To assess

the economic impact and the response of work arrangement, we consider two key variables: (1) whether the person experienced a fall in household income; and (2) whether they are now teleworking.

To assess the impact on social life and leisure, we construct an index measuring the degree of engagement in different leisure activities that have a social component. Respondents were asked to indicate the frequency of engagement in a series of activities at different points in time: in normal times before the outbreak, at the start of the outbreak and at the time of the survey. The index aggregates information from four variables: participation in large social gatherings, going to large close spaces (such as a museum or a shopping center), going to large open spaces (such as a public park), visiting friends/family.

Second, we examine self-reported positive and negative non-financial effects of the pandemic and measures implemented. Negative effects include anxiety, trouble sleeping, increased conflicts, boredom or loneliness. Positive effects include more time with family, more free time, less pollution or less noise. Survey participants could indicate as many as applicable. We construct two simple indicators of the number of positive and negative effects indicated.

Third, we look at one specific behavior that appears to exhibit large cross-country variation: wearing a facial mask. This behavior is interesting because it is not very costly, and it has a clear element of solidarity, since the main benefit appears to reduce transmission to others (rather than protecting oneself). However, countries did not universally recommended the use of masks in their population, at least not early on.

The final variable of interest is the support for the approach taken by the country's government. Here we will highlight age and income differences in beliefs of effectiveness of measures implemented and in the general support for the approach taken by the government. We explore to what extent these can be explained by the variables capturing the economic and social impact of the pandemic. We present an analysis where we add controls for variables capturing the economic and social impact as described above.

Note that we will interpret significance levels of the coefficients at face value, without implementing corrections for multiple hypotheses testing. Given how little is known on the topic this analysis is necessarily exploratory, and confirmatory research will be needed. Yet, the goal is to see if a coherent story emerges.

3 Results

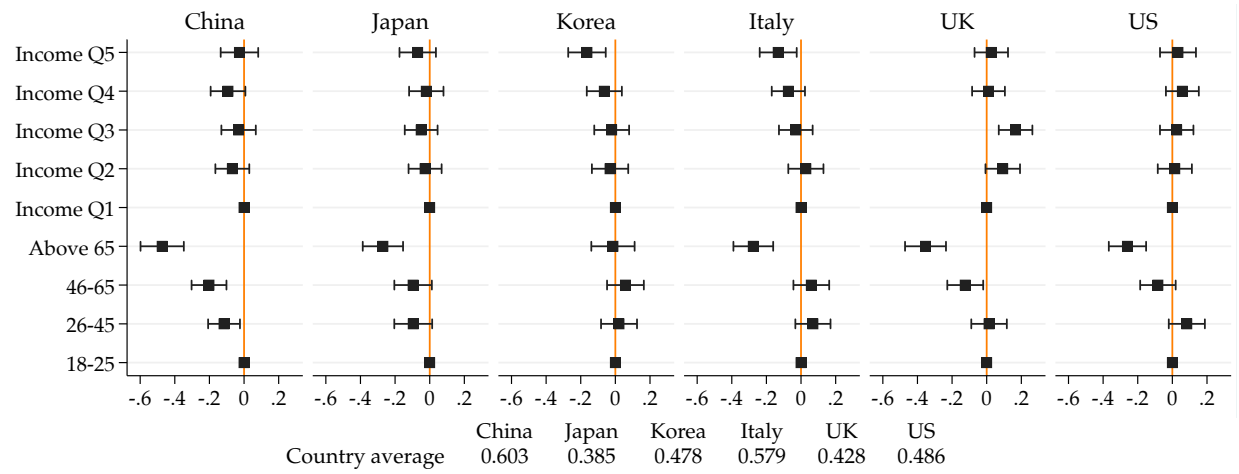
3.1 Economic and social consequences of the pandemic

We find evidence of a clear negative age gradient in the probability of having experienced a fall in household income, as shown in Figure 1, across all countries except South Korea. The oldest group (65+) is 47 percentage points less likely to have experienced a drop in income in China, relative to the youngest group (18-25), the difference is large but less pronounced in other countries (around 25 percentage points in Japan, Italy and the US,

and 35 percentage points in the UK). For income, we find a less clear pattern, except for Italy and Korea, where those with incomes in the top 20% are significantly less likely (by 13 and 16 percentage points, respectively) to have experienced a fall in household income.[2]

On the other hand, in all countries, we see a very similar pattern in the probability of teleworking: Younger groups and higher income groups are substantially more likely to be teleworking than those in the bottom 20% income. In China, the 46-65 are 25 percentage points less likely to telework relative to to the 18-25 group. The difference is smaller but remains large in other countries, except for the US and Italy, where there is no significant difference.

The picture that emerges is one where those with lower incomes may not have been able to work from home, but appear to have been, in the early months of the pandemic, shielded from negative financial effects in some countries (like China, Japan, UK and US) and less in others (South Korea, Italy).



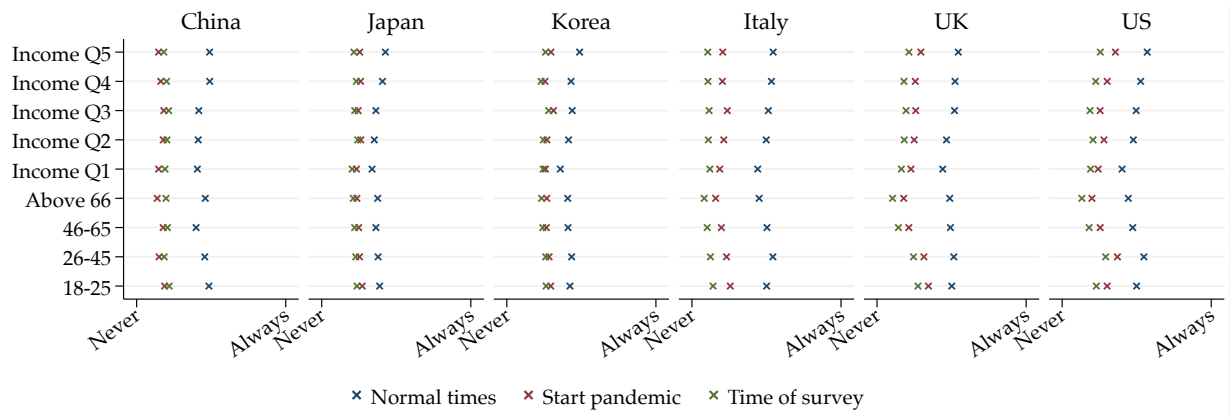
Note: Point estimates and 95% confidence intervals from a linear probability model of indicator for loss of household income during the pandemic on income quintile, age group, gender and geographical controls. Figure based on regression results in Table A1.

Figure 1: Age and income gradients on household income loss

Turning to social interactions, Figure 2 shows the mean reported levels of our index variable at three points in time—in normal times before the outbreak, at the start of the outbreak and at the time of the survey. In all countries, the younger groups (18-25 or 26-45) are most engaged in social activities. But the older groups appear to have reduced their social life most. There is also a clear income gradient: Higher income groups are more likely to engage in leisure activities with a social component, in all countries. Since those were effectively discouraged or forbidden at the time of the survey, higher income

[2]We do not present cross-country comparisons of job loss because the financial implications of job loss vary across countries, depending on transfer programs that have been implemented as a result of the crisis. For the US, Papageorge et al. (2020) show an income gradient in the probability of permanent job loss.

groups by then had experienced a larger negative impact on their social life in most of the countries. This is evidenced by marked income gradients on how bothered they report being for not being able to participate in large social gatherings, go to large (close or open) spaces, and visit friends or family (see Table A3).



Note: We report group averages of an index that includes frequency of (i) participation in large social gatherings, (ii) visit to large open spaces, (iii) large close spaces, and (iv) visits to friends or family. The index is constructed by averaging frequencies on a 1 to 5 scale, where "1" is "Never" and "5" is "Always".

Figure 2: Social interactions over time, by age and income groups

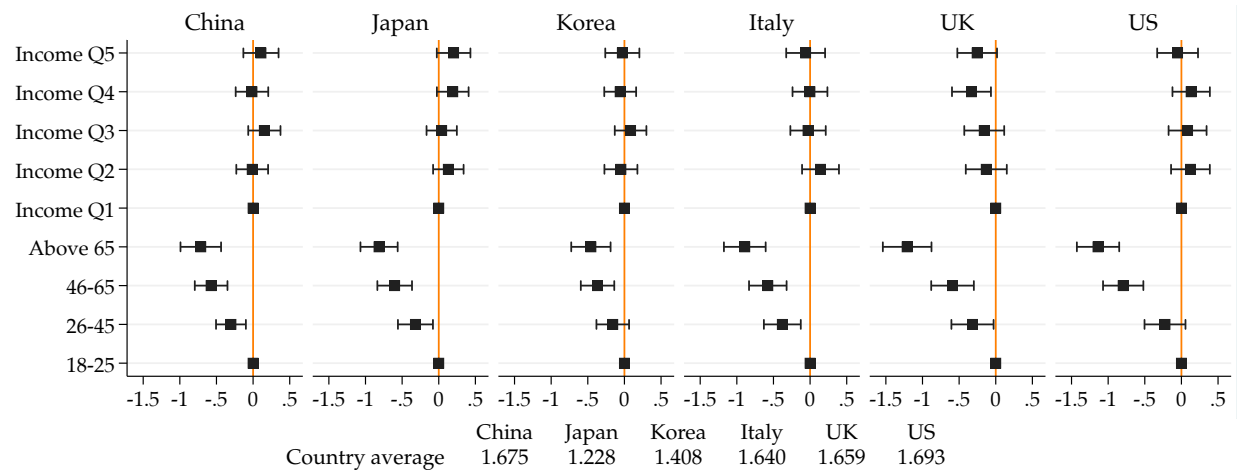
Summarizing and looking across countries, we find that those who experienced the largest negative economic impacts are the young, while older groups and high income groups experienced the largest negative impact in their social life and leisure.

3.2 Psychological costs and the positive side of the pandemic

Looking at negative non-financial effects, we find that the younger groups are more likely to report negative effects, in all countries. Understanding the higher psychological costs of the younger groups is important because they may comply less with social distancing measures. Again, the pattern is less clear across income groups: There is no gradient in China, Korea, Italy and the US, but there is a negative income gradient in the UK and a positive one in Japan.

We also find that people report experiencing some benefits from the pandemic—between enjoying more free time, enjoying time with family, cleaner air, and less noise pollution. The older groups are less likely to report positive effects (Table A6). We see a positive income gradient in Japan, Italy, and the US, where people in the lowest income quintile report fewer positive effects from the crisis.

Summarizing, we find that young people are most affected (negatively and positively) in non-financial, psychological terms; all income groups appear to experience negative effects, but positive effects appear concentrated among the higher income groups.

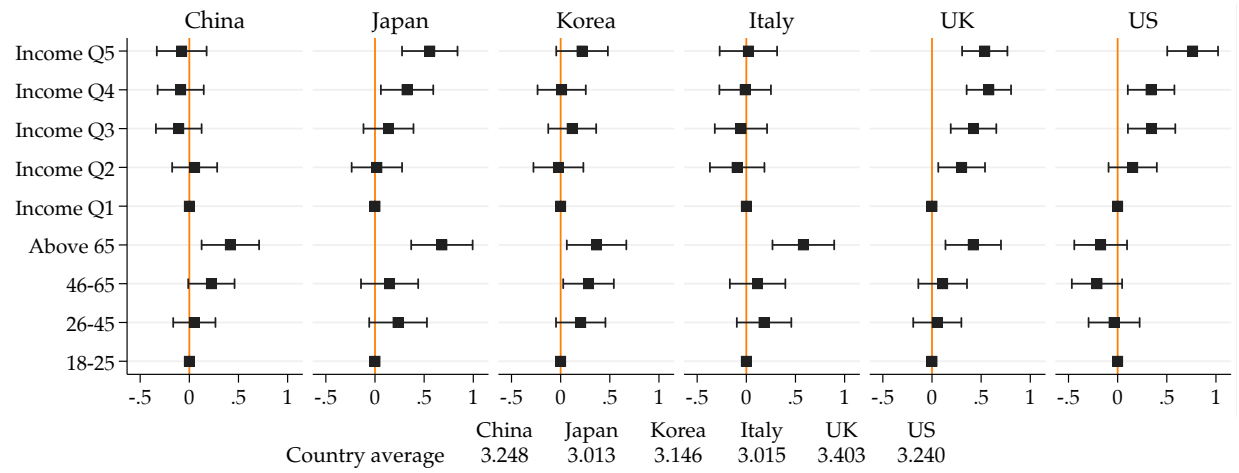


Note: Point estimates and 95% confidence intervals from a linear regression model of number of negative non-financial effects due to the pandemic (which include: (i) boredom, (ii) loneliness, (iii) trouble sleeping, (iv) general anxiety and stress, and (v) increased conflicts with friends/family/neighbors) on income quintile, age group, gender and geographical controls. Figure based on regression results in Table A4.

Figure 3: Age and income gradients on negative non-financial effects

3.3 Wearing a facial mask

We now look at the age and income gradients in the probability of wearing a mask Figure 4. This behavior is interesting because it involves a relatively low cost and it has a clear solidarity component, since the benefit appears to accrue mostly to others rather than oneself (Chu et al., 2020; Howard et al., 2020).



Note: Point estimates and 95% confidence intervals from a linear regression model for frequency of use of face masks on income quintile, age group, gender and geographical controls. Figure based on regression results in Table A7.

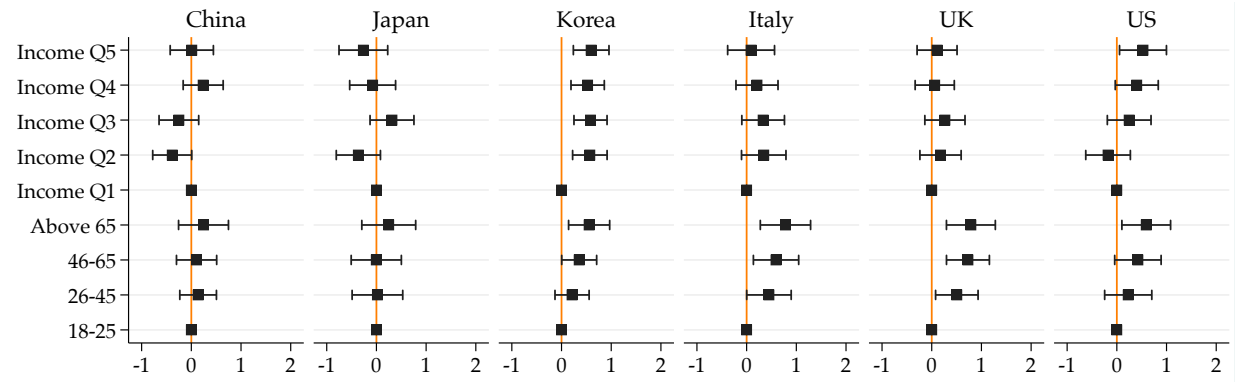
Figure 4: Age and income gradients on frequency of use face mask

Again, we find a clear age gradient in most countries: The older groups are much more likely to say they are wearing a mask. The difference between the older (65+) and younger (18-25) groups ranges goes up to 69 percentage points in Japan. There is no age gradient in the US. The income gradient is much less clear: there is no income gradient in China, South Korea and Italy, but a strong positive income gradient in the US, UK and Japan.

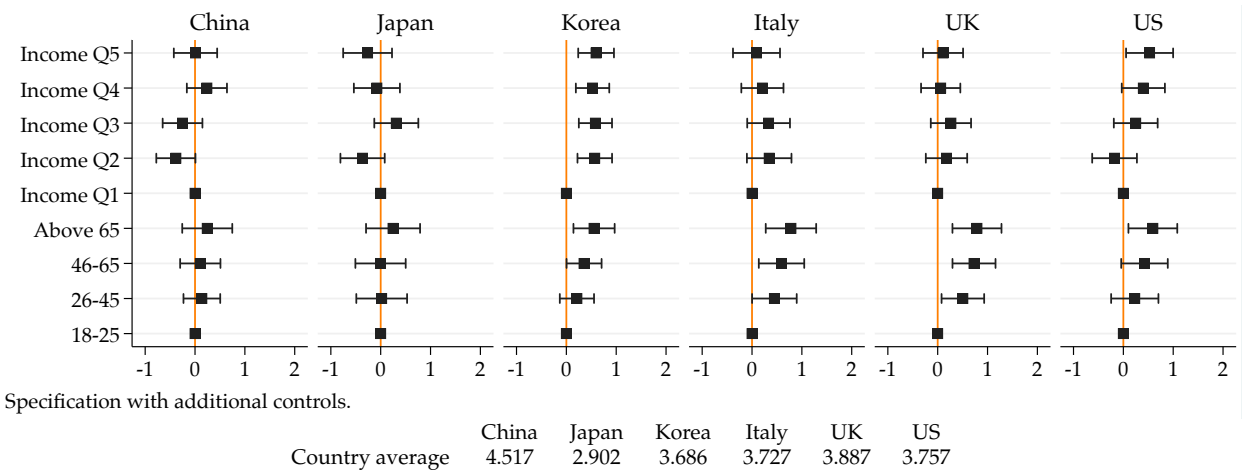
In a related paper focusing on the US and using the same data (Papageorge et al. (2020)), we study changes in a wider range of behaviors in the United States. We find that higher income groups are more likely to adopt self-protective measures in response to the outbreak.

3.4 Support for the government and recommendations

The last question we turn to is the support of the population for the approach taken by their governments (Figure 5). Older individuals tend to be more supportive. Though we do not observe such gradients in China—possibly because of ceiling effects, and Japan—where support for the government is the lowest. The pattern across income is again less clear.



Baseline specification.



Note: Point estimates and 95% confidence intervals from a linear regression model of government support on income quintile, age group, gender, geographical controls, and additional controls. Additional controls include indicators for having lost the job at least temporarily and having lost household income, as well as count variables of the negative non-financial and positive non-financial effects.)

Figure 5: Age and income gradients on support of the government's handling of the pandemic

We explore to what extent age gradients can be explained by disproportionate effects of the pandemic on different groups (using the variables presented above). When we control for these variables (see bottom panel of Figure 5), we do not see substantial changes in these age and income gradients, suggesting that support is not directly driven by the economic, social or psychological impact of the outbreak on individuals.

4 Discussion

The epidemic and measures taken in response to it across the world appear to have affected different groups of the population in different ways. As a result, some subgroups of the population are economically and psychologically more vulnerable than other subgroups. Understanding the heterogeneous nature of the impact of Covid-19 impacts is a necessary step toward improving the current set of policy tools, i.e., to encourage compliance with measures that align with societal goals of containing the pandemic while minimizing economic and social damage.

In the six countries we surveyed, we find consistent evidence that younger people have been more negatively affected—both economically and psychologically—and that they appear to be less supportive of their governments' approaches. On the other hand, we find a less clear pattern across income groups. Despite their lower ability to work from home, lower income people have not necessarily experienced the strongest negative income consequences, at least not in all countries. Some countries took early measures to shield the low income groups from the economic consequences of the crisis. However,

our findings on income groups are not definitive because the extent of economic impacts was not fully revealed by the time of our survey.

This evidence that younger people are more affected by the pandemic and support less their government response strengthens the case for more differentiated policies that shield the young from the negative consequences of the epidemic and necessary measures. A number of recent papers propose policies that target lockdown policies to the older part of the population (see, for the effects of age-specific policies, Acemoglu et al., 2020; Brotherhood et al., 2020; Favero et al., 2020). The advantage would be that such targeted policies would allow for economic recovery, while shielding those with the highest health risks. However, the consequences of shutting down interactions between the old and the young are not yet well understood. People from different age groups rely on each other for many reasons, and breaking such inter-generational bonds and arrangements may have negative consequences, which are difficult to assess and will require more empirical work. It is also imperative to find ways to match young people's incentives and burdens of complying to public policies.

While our focus is on age and income differences, our data present important systematic patterns indicating that women are disproportionately affected by this economic crisis. For most of the surveyed countries women are less likely to have started teleworking, more likely to be socially isolated because of the pandemic, and more likely to report suffering psychological consequences of the pandemic. These findings echo evidence presented by Alon et al. (2020) who show that women are concentrated in sectors disproportionately affected by the crisis. The data from Belot et al. (2020) do not include some of the questions that are key for understanding the sources of such gender gaps (e.g task allocation within the household), but a cross-country perspective can prove helpful in directing ongoing investigations on the root causes of such gender gaps.

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Appendix for Online Publication

A Additional Tables

Table A1: Linear probability model for having experienced household income loss

	China	Japan	Korea	Italy	UK	US
Female	-0.039	0.009	0.033	0.084***	-0.018	0.035
	(0.031)	(0.031)	(0.033)	(0.030)	(0.030)	(0.032)
Age group (*baseline: 18 to 25*)						
26 to 45	-0.116**	-0.095*	0.021	0.069	0.014	0.084
	(0.046)	(0.055)	(0.052)	(0.051)	(0.052)	(0.053)
46 to 65	-0.202***	-0.096*	0.058	0.059	-0.124**	-0.083
	(0.051)	(0.055)	(0.054)	(0.052)	(0.052)	(0.052)
Above 66	-0.473***	-0.271***	-0.014	-0.276***	-0.354***	-0.259***
	(0.063)	(0.059)	(0.063)	(0.058)	(0.060)	(0.054)
Income quintile (*baseline: First quintile*)						
Second quintile	-0.068	-0.027	-0.031	0.028	0.093*	0.014
	(0.049)	(0.048)	(0.053)	(0.051)	(0.050)	(0.050)
Third quintile	-0.031	-0.050	-0.021	-0.030	0.167***	0.025
	(0.050)	(0.048)	(0.051)	(0.049)	(0.049)	(0.049)
Fourth quintile	-0.093*	-0.020	-0.064	-0.073	0.010	0.057
	(0.051)	(0.050)	(0.051)	(0.048)	(0.048)	(0.048)
Fifth quintile	-0.027	-0.069	-0.164***	-0.132**	0.026	0.032
	(0.055)	(0.053)	(0.055)	(0.054)	(0.049)	(0.052)
Current living area (*baseline: Urban*)						
Semi-urban	0.110***	-0.108***	-0.048	-0.012	-0.052	-0.027
	(0.039)	(0.038)	(0.048)	(0.035)	(0.035)	(0.034)
Country-side	0.205***	-0.094**	-0.141*	-0.123***	0.076	-0.132**
	(0.061)	(0.043)	(0.083)	(0.043)	(0.050)	(0.053)
Constant	0.609***	0.654***	0.494***	0.552***	0.420***	0.505***
	(0.083)	(0.076)	(0.078)	(0.119)	(0.078)	(0.066)
Regional fixed effects	Y	Y	Y	Y	Y	Y
Observations	999	1013	964	1042	1016	1055
adj. R^2	0.101	0.027	0.007	0.091	0.097	0.076

$^{*}p < 0.10$; $^{**}p < 0.05$; $^{***}p < 0.01$

Notes: Standard errors in parentheses. All specifications include regional fixed effects for the place of residence of the respondent (relevant administrative level is the *province* in China and South Korea, the *region* in Japan, Italy and the United Kingdom, and the *state* in the United States).

Table A2: Ordinary least squares for having started teleworking

	China	Japan	Korea	Italy	UK	US
Female	-0.007	-0.045*	-0.046**	-0.027	-0.102***	-0.080***
	(0.029)	(0.023)	(0.023)	(0.026)	(0.023)	(0.024)
Age group (*baseline: 18 to 25*)						
26 to 45	-0.111**	-0.050	-0.055	0.025	0.015	0.157***
	(0.044)	(0.041)	(0.037)	(0.045)	(0.040)	(0.040)
46 to 65	-0.252***	-0.108***	-0.120***	-0.022	-0.089**	0.001
	(0.048)	(0.041)	(0.037)	(0.046)	(0.041)	(0.039)
Above 66	-0.574***	-0.242***	-0.136***	-0.235***	-0.193***	-0.141***
	(0.060)	(0.044)	(0.044)	(0.051)	(0.046)	(0.041)
Income quintile (*baseline: First quintile*)						
Second quintile	0.211***	0.084**	0.034	0.066	0.025	0.080**
	(0.047)	(0.036)	(0.037)	(0.045)	(0.039)	(0.038)
Third quintile	0.075	0.156***	0.145***	0.161***	0.095**	0.153***
	(0.047)	(0.036)	(0.035)	(0.043)	(0.038)	(0.037)
Fourth quintile	0.124***	0.214***	0.130***	0.229***	0.152***	0.259***
	(0.048)	(0.038)	(0.036)	(0.042)	(0.037)	(0.036)
Fifth quintile	0.171***	0.327***	0.162***	0.351***	0.219***	0.304***
	(0.052)	(0.040)	(0.038)	(0.047)	(0.038)	(0.040)
Current living area (*baseline: Urban*)						
Semi-urban	-0.118***	-0.010	-0.029	-0.102***	-0.041	-0.041
	(0.037)	(0.028)	(0.034)	(0.031)	(0.027)	(0.026)
Country-side	-0.249***	-0.029	-0.038	-0.127***	-0.059	-0.128***
	(0.058)	(0.032)	(0.058)	(0.038)	(0.039)	(0.040)
Constant	0.674***	0.143**	0.154***	0.222**	0.163***	0.107**
	(0.078)	(0.057)	(0.054)	(0.104)	(0.060)	(0.050)
Regional fixed effects	Y	Y	Y	Y	Y	Y
Observations	999	1013	964	1042	1016	1055
adj. R^2	0.229	0.149	0.036	0.126	0.110	0.259

$^{*}p < 0.10$; $^{**}p < 0.05$; $^{***}p < 0.01$

Notes: Standard errors in parentheses. All specifications include regional fixed effects for the place of residence of the respondent (relevant administrative level is the *province* in China and South Korea, the *region* in Japan, Italy and the United Kingdom, and the *state* in the United States).

Table A3: Ordinary least squares for index of dissatisfaction with social distance

	China	Japan	Korea	Italy	UK	US
Female	-0.266***	0.366***	0.129	0.024	0.083	0.063
	(0.077)	(0.107)	(0.109)	(0.084)	(0.098)	(0.100)
Age group (*baseline: 18 to 25*)						
26 to 45	-0.170	-0.124	-0.202	0.181	-0.268	0.088
	(0.116)	(0.190)	(0.173)	(0.144)	(0.169)	(0.165)
46 to 65	-0.256**	-0.324*	-0.226	-0.002	-0.226	-0.098
	(0.128)	(0.188)	(0.177)	(0.147)	(0.171)	(0.163)
Above 66	-0.342**	-0.947***	-0.731***	-0.238	-0.523***	-0.272
	(0.158)	(0.202)	(0.208)	(0.163)	(0.195)	(0.171)
Income quintile (*baseline: First quintile*)						
Second quintile	0.325***	0.253	0.462***	-0.007	0.425***	0.331**
	(0.124)	(0.165)	(0.175)	(0.144)	(0.165)	(0.156)
Third quintile	0.359***	0.258	0.668***	0.171	0.430***	0.313**
	(0.126)	(0.164)	(0.168)	(0.138)	(0.160)	(0.153)
Fourth quintile	0.337***	0.412**	0.895***	0.367***	0.576***	0.431***
	(0.127)	(0.172)	(0.169)	(0.136)	(0.156)	(0.151)
Fifth quintile	0.388***	0.558***	0.803***	0.444***	0.550***	0.386**
	(0.137)	(0.182)	(0.181)	(0.152)	(0.159)	(0.165)
Current living area (*baseline: Urban*)						
Semi-urban	0.203**	0.031	-0.334**	0.124	-0.035	-0.006
	(0.098)	(0.130)	(0.159)	(0.099)	(0.114)	(0.107)
Country-side	-0.053	0.032	-0.672**	-0.166	0.010	0.144
	(0.153)	(0.147)	(0.274)	(0.122)	(0.164)	(0.168)
Constant	-0.478**	-0.160	-0.381	0.033	-0.265	-0.132
	(0.207)	(0.261)	(0.257)	(0.334)	(0.255)	(0.206)
Regional fixed effects	Y	Y	Y	Y	Y	Y
Observations	999	1013	964	1042	1016	1055
adj. R^2	0.075	0.049	0.052	0.040	0.042	0.016

$^{*}p < 0.10$; $^{**}p < 0.05$; $^{***}p < 0.01$

Notes: Standard errors in parentheses. All specifications include regional fixed effects for the place of residence of the respondent (relevant administrative level is the *province* in China and South Korea, the *region* in Japan, Italy and the United Kingdom, and the *state* in the United States). The outcome is index that is constructed as the first principal component fitting the variables that capture how bothered respondents are for not being able to meet other people in their free time, do leisure activities outside of home, shop non-essentials.

Table A4: Ordinary least square for negative non-financial effects

	China	Japan	Korea	Italy	UK	US
Female	0.024	0.366***	0.241***	0.281***	0.387***	0.404***
	(0.068)	(0.068)	(0.071)	(0.074)	(0.085)	(0.085)
Age group (*baseline: 18 to 25*)						
26 to 45	-0.302***	-0.317***	-0.159	-0.379***	-0.318**	-0.219
	(0.103)	(0.121)	(0.113)	(0.127)	(0.145)	(0.141)
46 to 65	-0.573***	-0.600***	-0.367***	-0.577***	-0.589***	-0.792***
	(0.113)	(0.119)	(0.115)	(0.130)	(0.147)	(0.139)
Above 66	-0.714***	-0.813***	-0.457***	-0.891***	-1.207***	-1.134***
	(0.140)	(0.128)	(0.136)	(0.144)	(0.168)	(0.146)
Income quintile (*baseline: First quintile*)						
Second quintile	-0.012	0.131	-0.048	0.142	-0.131	0.122
	(0.110)	(0.105)	(0.114)	(0.127)	(0.141)	(0.133)
Third quintile	0.154	0.040	0.084	-0.028	-0.157	0.085
	(0.111)	(0.104)	(0.109)	(0.122)	(0.138)	(0.131)
Fourth quintile	-0.015	0.192*	-0.058	-0.002	-0.331**	0.135
	(0.112)	(0.109)	(0.110)	(0.120)	(0.134)	(0.129)
Fifth quintile	0.107	0.203*	-0.029	-0.061	-0.253*	-0.049
	(0.121)	(0.116)	(0.118)	(0.134)	(0.137)	(0.141)
Current living area (*baseline: Urban*)						
Semi-urban	0.341***	-0.053	-0.044	0.026	0.099	0.081
	(0.087)	(0.082)	(0.104)	(0.088)	(0.098)	(0.091)
Country-side	-0.011	-0.046	-0.330*	-0.372***	-0.057	-0.060
	(0.135)	(0.094)	(0.178)	(0.108)	(0.141)	(0.143)
Constant	1.622***	1.446***	1.644***	1.811***	1.903***	1.939***
	(0.183)	(0.166)	(0.167)	(0.295)	(0.219)	(0.176)
Regional fixed effects	Y	Y	Y	Y	Y	Y
Observations	999	1013	964	1042	1016	1055
adj. R^2	0.086	0.083	0.030	0.087	0.088	0.105

$^{*}p < 0.10$; $^{**}p < 0.05$; $^{***}p < 0.01$

Notes: Standard errors in parentheses. All specifications include regional fixed effects for the place of residence of the respondent (relevant administrative level is the *province* in China and South Korea, the *region* in Japan, Italy and the United Kingdom, and the *state* in the United States). The outcome is a variable that counts how many of the following non-financial negative effects respondents report to be experiencing due to the pandemic. This includes (i) boredom, (ii) loneliness, (iii) trouble sleeping, (iv) general anxiety and stress, (v) increased conflicts with friends/relatives/neighbors.

Table A5: Ordinary least squares for index of belief of policy effectiveness (higher values denote belief in higher effectiveness)

	China	Japan	Korea	Italy	UK	US
Female	0.209*	0.442***	0.435***	0.247*	0.561***	0.509***
	(0.123)	(0.145)	(0.110)	(0.132)	(0.125)	(0.144)
Age group (*baseline: 18 to 25*)						
26 to 45	0.137	0.021	0.212	0.449**	0.504**	0.236
	(0.186)	(0.257)	(0.173)	(0.226)	(0.216)	(0.240)
46 to 65	0.106	-0.000	0.355**	0.592**	0.731***	0.428*
	(0.204)	(0.255)	(0.178)	(0.230)	(0.218)	(0.236)
Above 66	0.245	0.250	0.556***	0.781***	0.792***	0.597**
	(0.253)	(0.274)	(0.209)	(0.256)	(0.248)	(0.247)
Income quintile (*baseline: First quintile*)						
Second quintile	-0.384*	-0.363	0.570***	0.345	0.174	-0.177
	(0.198)	(0.225)	(0.175)	(0.226)	(0.209)	(0.226)
Third quintile	-0.250	0.314	0.583***	0.332	0.266	0.251
	(0.201)	(0.223)	(0.168)	(0.216)	(0.204)	(0.222)
Fourth quintile	0.238	-0.075	0.526***	0.209	0.062	0.404*
	(0.203)	(0.233)	(0.169)	(0.214)	(0.199)	(0.218)
Fifth quintile	0.010	-0.263	0.596***	0.090	0.109	0.533**
	(0.220)	(0.247)	(0.181)	(0.238)	(0.203)	(0.238)
Current living area (*baseline: Urban*)						
Semi-urban	0.085	0.114	-0.138	0.081	-0.053	-0.210
	(0.157)	(0.176)	(0.159)	(0.156)	(0.145)	(0.155)
Country-side	0.233	0.011	0.017	0.066	0.049	-0.258
	(0.245)	(0.200)	(0.275)	(0.191)	(0.209)	(0.243)
Constant	0.283	-0.832**	-1.743***	-0.295	-1.425***	-0.806***
	(0.331)	(0.354)	(0.258)	(0.524)	(0.325)	(0.298)
Regional fixed effects	Y	Y	Y	Y	Y	Y
Observations	999	1013	964	1042	1016	1055
adj. R^2	0.005	0.013	0.030	-0.002	0.015	0.021

$^{*}p < 0.10$; $^{**}p < 0.05$; $^{***}p < 0.01$

Notes: Standard errors in parentheses. All specifications include regional fixed effects for the place of residence of the respondent (relevant administrative level is the *province* in China and South Korea, the *region* in Japan, Italy and the United Kingdom, and the *state* in the United States).

Table A6: Ordinary least squares for positive non-financial effects

	China	Japan	Korea	Italy	UK	US
Female	-0.003	-0.018	0.101*	-0.010	0.075	0.082
	(0.062)	(0.051)	(0.059)	(0.063)	(0.069)	(0.069)
Age group (*baseline: 18 to 25*)						
26 to 45	-0.066	-0.140	-0.188**	0.005	-0.227*	0.064
	(0.094)	(0.090)	(0.093)	(0.108)	(0.118)	(0.114)
46 to 65	-0.430***	-0.153*	-0.273***	0.093	0.018	-0.099
	(0.103)	(0.089)	(0.095)	(0.110)	(0.120)	(0.112)
Above 66	-0.546***	-0.092	-0.371***	0.113	0.103	-0.244**
	(0.128)	(0.096)	(0.111)	(0.122)	(0.136)	(0.117)
Income quintile (*baseline: First quintile*)						
Second quintile	0.024	0.154**	0.210**	0.132	-0.136	0.152
	(0.100)	(0.079)	(0.093)	(0.108)	(0.115)	(0.108)
Third quintile	0.076	0.188**	0.134	0.229**	-0.111	0.248**
	(0.102)	(0.078)	(0.090)	(0.104)	(0.112)	(0.105)
Fourth quintile	-0.055	0.190**	0.191**	0.147	0.030	0.141
	(0.103)	(0.082)	(0.090)	(0.102)	(0.109)	(0.104)
Fifth quintile	0.101	0.218**	0.023	0.259**	0.015	0.095
	(0.111)	(0.086)	(0.097)	(0.114)	(0.111)	(0.113)
Current living area (*baseline: Urban*)						
Semi-urban	0.296***	-0.171***	0.014	0.149**	0.078	0.069
	(0.080)	(0.061)	(0.085)	(0.075)	(0.079)	(0.073)
Country-side	0.163	-0.163**	0.242*	-0.083	0.051	0.016
	(0.124)	(0.070)	(0.147)	(0.092)	(0.115)	(0.115)
Constant	1.740***	0.518***	0.827***	1.541***	1.329***	1.220***
	(0.167)	(0.124)	(0.137)	(0.251)	(0.178)	(0.142)
Regional fixed effects	Y	Y	Y	Y	Y	Y
Observations	999	1013	964	1042	1016	1055
adj. R^2	0.060	0.025	0.019	0.016	0.006	0.018

$^{*}p < 0.10$; $^{**}p < 0.05$; $^{***}p < 0.01$

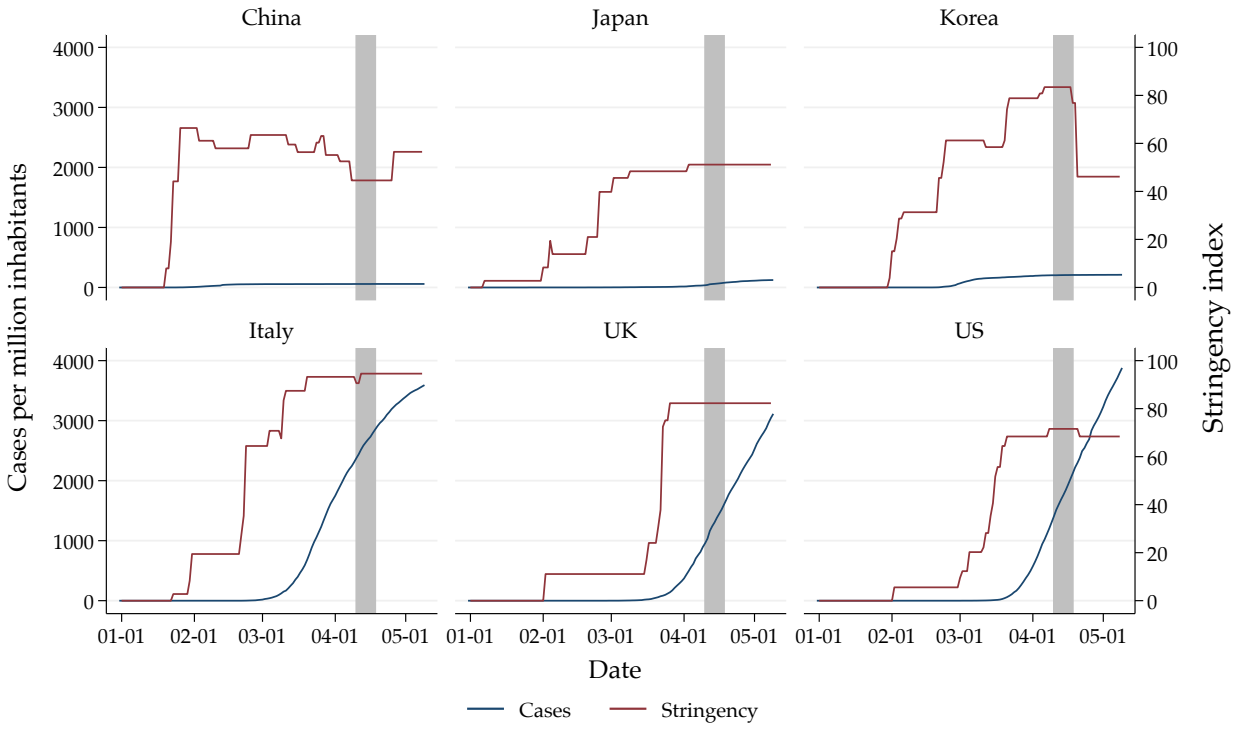
Notes: Standard errors in parentheses. All specifications include regional fixed effects for the place of residence of the respondent (relevant administrative level is the *province* in China and South Korea, the *region* in Japan, Italy and the United Kingdom, and the *state* in the United States). The outcome is a variable that counts how many of the following non-financial positive effects respondents report to be experiencing due to the pandemic. This includes (i) enjoying more free time, (ii) enjoying time with family, (iii) reduction of air pollution, (iv) reduction of noise pollution.

Table A7: Ordinary least squares for frequency of wearing masks "now" (i.e. around time of data collection)

	China	Japan	Korea	Italy	UK	US
Female	0.205***	0.561***	0.257***	0.270***	0.005	0.076
	(0.071)	(0.083)	(0.080)	(0.082)	(0.072)	(0.079)
Age group (*baseline: 18 to 25*)						
26 to 45	0.051	0.237	0.204	0.181	0.054	-0.035
	(0.109)	(0.148)	(0.127)	(0.140)	(0.124)	(0.131)
46 to 65	0.224*	0.153	0.283**	0.115	0.109	-0.210
	(0.119)	(0.147)	(0.130)	(0.143)	(0.125)	(0.129)
Above 66	0.417***	0.686***	0.365**	0.580***	0.420***	-0.172
	(0.148)	(0.158)	(0.153)	(0.158)	(0.143)	(0.136)
Income quintile (*baseline: First quintile*)						
Second quintile	0.054	0.021	-0.023	-0.093	0.302**	0.153
	(0.116)	(0.129)	(0.128)	(0.140)	(0.120)	(0.124)
Third quintile	-0.107	0.140	0.117	-0.055	0.423***	0.346***
	(0.117)	(0.128)	(0.123)	(0.134)	(0.117)	(0.122)
Fourth quintile	-0.088	0.328**	0.010	-0.012	0.579***	0.341***
	(0.118)	(0.134)	(0.124)	(0.132)	(0.114)	(0.120)
Fifth quintile	-0.077	0.557***	0.218	0.021	0.537***	0.764***
	(0.128)	(0.142)	(0.133)	(0.148)	(0.116)	(0.131)
Current living area (*baseline: Urban*)						
Semi-urban	0.041	0.159	0.024	-0.040	0.168**	-0.103
	(0.092)	(0.101)	(0.117)	(0.097)	(0.083)	(0.085)
Country-side	0.004	0.169	-0.344*	-0.019	0.302**	-0.025
	(0.143)	(0.115)	(0.201)	(0.119)	(0.120)	(0.133)
Constant	3.224***	2.157***	2.723***	2.276***	2.714***	3.036***
	(0.193)	(0.204)	(0.189)	(0.325)	(0.186)	(0.163)
Regional fixed effects	Y	Y	Y	Y	Y	Y
Observations	999	1013	964	1042	1016	1055
adj. R^2	0.018	0.070	0.010	0.015	0.044	0.039

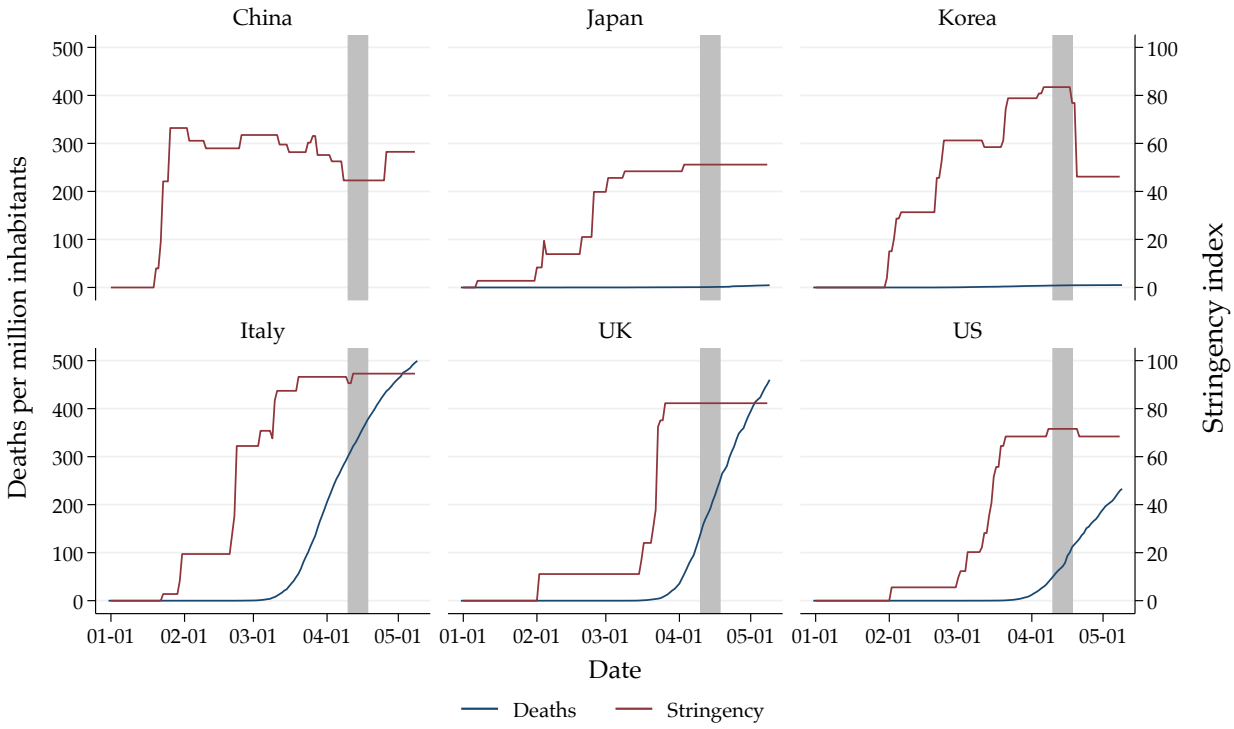
$^{*}p < 0.10$; $^{**}p < 0.05$; $^{***}p < 0.01$

Notes: Standard errors in parentheses. All specifications include regional fixed effects for the place of residence of the respondent (relevant administrative level is the *province* in China and South Korea, the *region* in Japan, Italy and the United Kingdom, and the *state* in the United States).



Note: The gray bar represents the third week of April 2020, in which the survey was conducted. Source: Hale et al. (2020).

Figure A1: Time series of the number of confirmed cases and stringency index of government responses



Note: The gray bar represents the third week of April 2020, in which the survey was conducted. Data on deaths from China is not available. Source: Hale et al. (2020).

Figure A2: Time series of the number of Covid-19 related deaths and stringency index of government responses