Policy Research Working Paper 9480

Opening-up Trajectories and Economic Recovery

Lessons after the First Wave of the COVID-19 Pandemic

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WORLD BANK GROUP
Europe and Central Asia Region
Office of the Chief Economist
November 2020

Abstract

This paper analyzes the reopening process of countries in Europe and Central Asia after the first wave of the COVID-19 pandemic and provides evidence on the effects of different reopening trajectories and their timing and speed on economic recovery. The analysis indicates that countries that adopted a gradual, staged reopening experienced stronger economic recovery compared with the countries that rushed into lifting the restrictive measures before the pandemic was under control. Postponing lifting the restrictions until after the pandemic's peak was reached has a positive impact on economic activity. Governance also matters: a higher level of trust in government is associated with increased economic activity among countries that carried out a gradual reopening process. There is also suggestive evidence that providing people objective data on the progress of the pandemic may speed up the recovery process.

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Opening-up Trajectories and Economic Recovery: Lessons after the First Wave of the COVID-19 Pandemic

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This version:

Declaration of Interest: none

Keywords: pandemic, COVID-19, economic impact, opening-up process, high-frequency data, Europe and Central Asia.

JEL: D14, E21, G51

[*]The authors are at the World Bank. This paper's findings, interpretations, and conclusions are entirely those of the authors and do not necessarily represent the views of the World Bank, its Executive Directors, or the countries they represent. We thank seminar participants at the World Bank for their useful comments and Vladimir Kolchin for their excellent support.

1. Introduction

When the COVID-19 pandemic first hit countries in Europe during March-April 2020, little information was available about the nature of the pandemic, and the outcomes of projected scenarios were highly uncertain. The policy response was essentially a checklist or rules-based protocol, designed by public health officials in the "fog of war" based on experiences with similar communicable diseases. Almost uniformly, countries across the world implemented a full lockdown of the economy and restricted most social activities.

Once the first wave of the pandemic started to wane, policy makers and experts gained greater understanding and experience about the disease from accumulated empirical data and successes and failures of policies adopted by different countries. Refinements of the treatment protocols improved the rates of survival. The medical community gained knowledge about the vectors of the pandemic, risks of contagion, and identified groups at risk. Rapid tests for COVID-19, along with better targeted and selective policies of testing and isolations, were developed and deployed at a mass scale. The likelihood of a vaccine became a reality. Compared to early Spring 2020, policy makers now have a vastly broader range of options to contain the spread and mitigate the intensity of the disease. Governments also have a better understanding of the impacts of the pandemic and the public health response on the economy. As the costs and effectiveness of different interventions become known, policy makers can better design policy reforms that improve outcomes, remove barriers, and decrease costs.

While there is evidence that timely lockdown measures contained the spread of the disease and may have also minimized the economic fallout of the pandemic's first wave (Demirgüç-Kunt, Lokshin and Torre, 2020), the impact of the reopening measures on the economic recovery and the epidemiological situation has so far not been thoroughly analyzed. The timing of the reopening, its sequencing, and speed are all dimensions of the reopening process that can potentially impact the path of economic recovery. Importantly, social capital and trust in government can play a central role in compliance with social distancing measures (Giuliano and Rasul, 2020), potentially making a successful reopening conditional on the beliefs and preferences of citizens (Bazzi, Fiszbein and Gebresilasse, 2020; Amuedo-Dorantes, Kaushal and Muchow, 2020). Beyond society-level beliefs, individual-level perceptions may also affect the pace of economic activity as countries relax restrictions since fear, anxiety, and risk perceptions may also influence individual behavior. Goolsbee and Syverson (2020) demonstrate that individual choices tied to the fear of infection and death explain the large share of the drop in economic activity in the United States during the early stages of the pandemic.

In this paper we analyze the reopening process of countries after the first wave of the pandemic. We provide evidence on the effects of different reopening trajectories, their timing and speed on economic activity. Our analysis shows that a gradual reopening is associated with a stronger recovery and that the faster lifting of the restrictions might hamper the economic recovery. These results are robust to addressing potential endogeneity in the governments' decision on the timing of reopening. Starting the reopening process early on –with respect to the pandemic's first peak– is also associated with slower recovery.

In our analysis we also explore how the level of trust in institutions affects the economic costs of reopening. We find that higher levels of trust are associated with higher levels of economic activity among countries that carried out a gradual reopening process. And that incorporating trust into the analysis suggests that an even faster reopening process can be more successful. The analysis also shows that fear and anxiety about the spread of the pandemic may hinder the economic recovery as countries reopen.

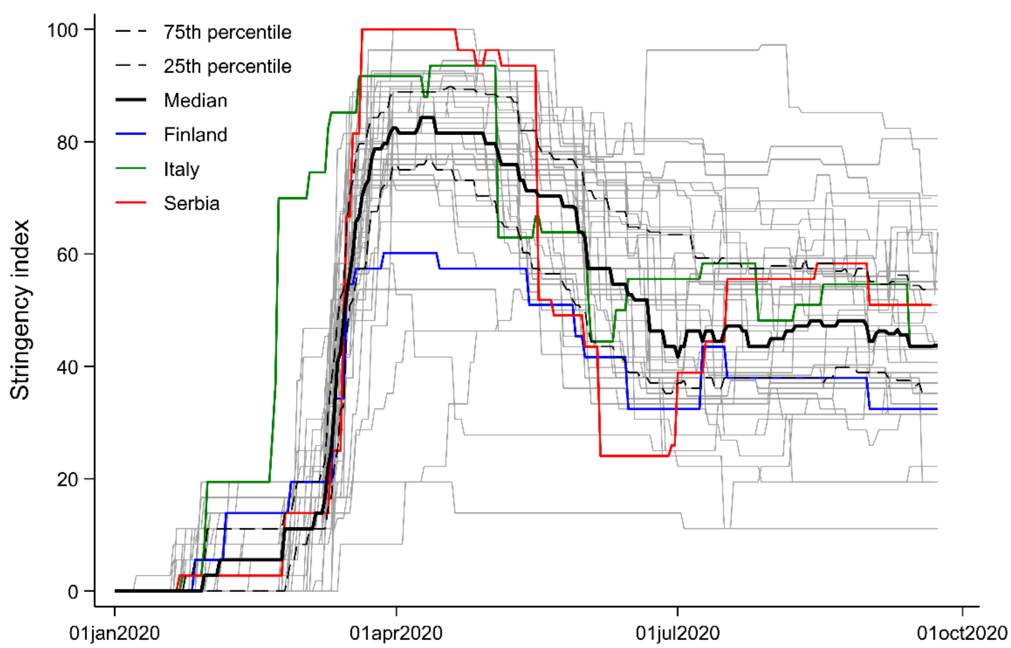
The remainder of the paper is organized as follows: Section 2 provides background information about the reopening process of countries in Europe and Central Asia and characterizes three main dimensions: sequencing, speed, and the wait period before reopening. Section 3 describes the empirical framework. The data used in the analysis are discussed in Section 4. Section 5 presents the main results. Section 6 extends the analysis to assess the role of trust and perceptions, and Section 7 addresses the potential endogeneity of reopening policies. Section 8 concludes.

2. Background: The reopening process

After the outbreak of the COVID-19 pandemic in late February 2020, most countries in Europe went into national lockdowns almost simultaneously in the second half of March 2020, but the reopening policies did not follow such a uniform script. Large uncertainties about contagion risks, the lethality of the disease, and the share of the population susceptible to infection, together with the differential tolerance for the economic impact of lockdown measures, led countries to take different reopening paths.

A useful way of exploring countries' reopening process is by looking at the evolution of the Oxford Stringency Index (Hale et al., 2020). The index represents an aggregate of countries' policy responses to the pandemic and ranges from 0 (no restrictions on everyday activities) to 100 (complete lockdown of the country). This measure allows for a cross-country comparison of a multidimensional process like the reopening of the economies. Figure 1 plots the median value and 25th and 75th percentiles of the stringency index distribution at every point of time in 45 countries in Europe and Central Asia. The difference between the 25th and 75th percentiles was at the minimum (12 points of the index) on April 11-12, 2020, when more than 90 percent of the countries had implemented a full lockdown. That difference started increasing as countries' epidemiological situations diverged, and countries started to reopen. By mid-June 2020, the difference between the 25th and 75th percentiles more than doubled to 29 points in the stringency index – some countries being still under strict social distancing measures while others had removed restrictions on most activities. By fall, some countries opened further, and others scaled back the reopening measures in light of the second wave of COVID-19 cases.

Figure 1 – Oxford Stringency Index for countries in Europe and Central Asia



Note: this figure plots the values of the Oxford Stringency Index for countries in Europe and Central Asia. Individual country values are plotted with thin grey lines. The thick black line represents the median value across countries in the region, while the dashed black lines represent the percentiles 25 and 75 of the index's distribution at every point in time. The blue line plots the values corresponding to Finland; the green line plots the values corresponding to Italy, and the red line plots the values corresponding to Serbia.

Figure 1 also demonstrates that different countries implemented their reopening policies at a different pace. We define the start of reopening as the date when the stringency index began declining after reaching the maximum in March-May 2020. Some specific country examples are illustrative of the differences in the reopening process. For instance, Italy and Serbia had similar maximum levels of stringency - Serbia even reaching the stringency index of 100 - but their reopening trajectories were very different. Italy halved the stringency of restrictions in the course of a month and later remained at roughly the same stringency level. Serbia reduced its stringency by three-quarters of its peak value in a month and a half. At the end of June, Serbia had to re-implement restrictions, and its stringency index exceed that of Italy during part of the summer. On the other hand, in Finland, the stringency of restrictions during April-May were lower than those in Italy and Serbia. Furthermore, while Finland started lifting restrictions in spring, the stringency index never dropped below half its maximum value.

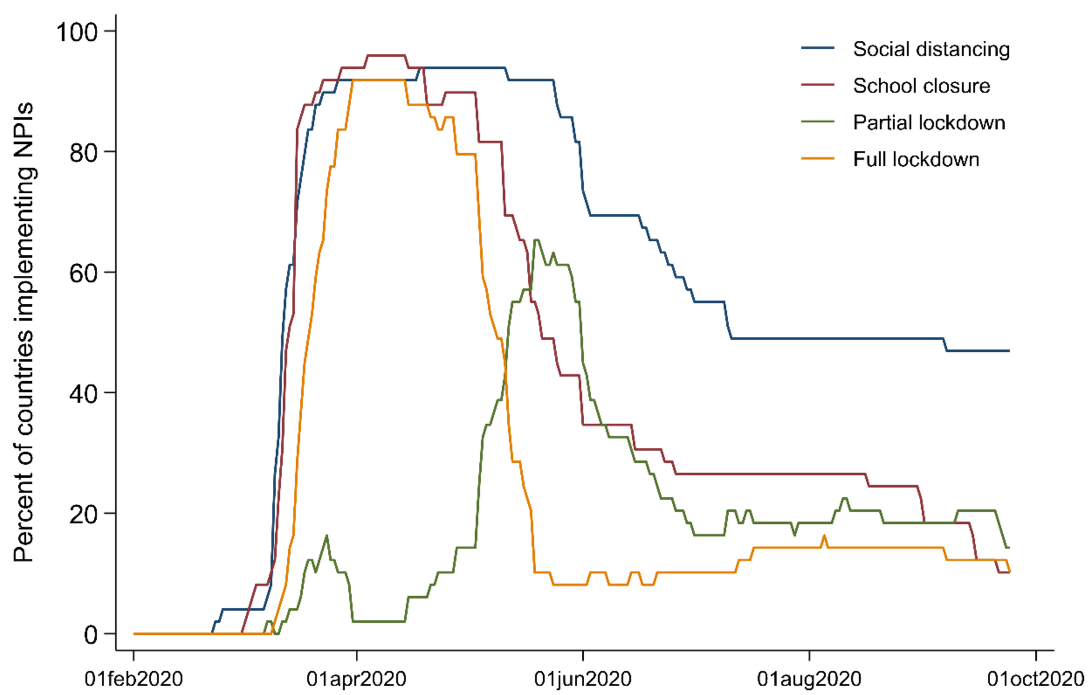
Reopening processes are multi-faceted, but in this paper, we focus on three dimensions that we think are most relevant for the economic recovery: i) sequencing, ii) timing, and iii) speed. Differences along these three dimensions are expected to be relevant from an economic point of view.

The first important dimension of the reopening process is the sequence in which different social and economic activities restart their normal operation. For example, school reopening has been and is still hotly debated, given the uncertainty about contagion risk among children (Milani et al., 2020). Countries adopted different school opening policies, even when facing a similar epidemiological situation (World Bank 2020). Denmark was the first country to reopen schools, starting with primary school grades on April 15; Italy and Spain did not reopen schools until the fall term. In between, countries opted for different strategies – some reopened schools only for grades which would sit high stakes exams (for example, Albania, Austria, and Germany), while others canceled those exams (e.g., France and the United Kingdom).

Beyond the importance for education, schools occupy a central node in production networks as the providers of childcare services to allow parents of young children to be more productive. Estimates from Germany indicate that a scenario of full economic reopening with schools closed would significantly reduce the labor supply – as 11percent of workers and 8 percent of working hours would be lost to home and childcare tasks (Fuchs-Schündeln, Kuhn and Tertilt, 2020).

Figure 2 shows how the sequencing of the reopening process has played out across Europe and Central Asia. The figure plots the share of countries that have in place a specific type of non-pharmaceutical intervention (NPI) at every point in time. We distinguish four types of NPIs using information from the Oxford Government Response Tracker: a full lockdown, a partial, targeted lockdown, school closure, and the cancelation of public events.[1] Most countries shifted from having a full lockdown to a partial lockdown during the late spring of 2020 and then removed lockdown measures altogether – keeping in place school closures and restrictions on public events. Schools were gradually reopened, and many countries also lifted the ban on public events. As of early September 2020, about 12 percent of countries are in full lockdown, 18 percent have some sort of partial lockdown, schools remained fully closed in 20 percent of them, and restrictions on public events remain in about half of the countries.[2]

Figure 2 – Implementation of NPIs over time



[1] Detailed descriptions of the NPIs are provided in Appendix 1.
[2] Tables A2 and A3 in the Appendix show the dates corresponding to lifting of NPI restrictions for individual countries.

Note: this graph plots the share of countries in Europe and Central Asia adopting each type of non-pharmaceutical intervention at each date between February 1 and October 1, 2020. Social distancing is defined as the canceling of public events and large gatherings. A partial lockdown only applies to a geographical region or a targeted set of activities.

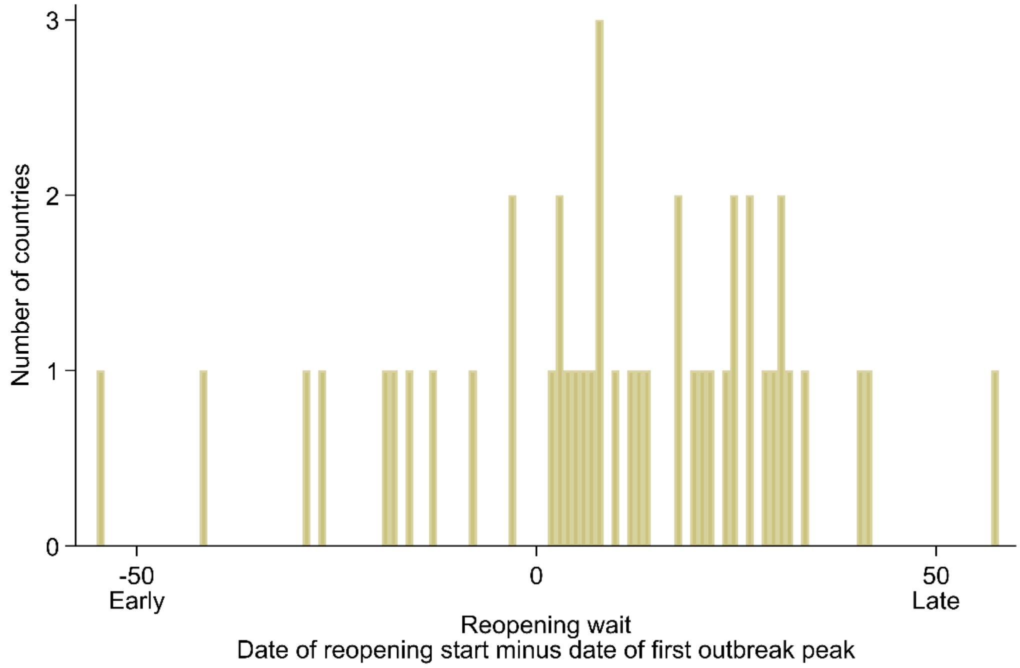
A second dimension of the reopening process is its timing in relation to the pandemic's evolution. Some countries spent a long time in full lockdown and started to undo some of the restrictions only when COVID-19 cases had decreased considerably. Other countries started reopening when the infection rates were still high or were not decreasing. The timing of the reopening process has been shown to affect individuals' behavior - like their consumption patterns-as they extract positive information on the underlying epidemiological situation from the signal of reopening (Glaeser et al., 2020).

We define the first peak of the pandemic as the day with the highest 7-day moving average of daily deaths by COVID-19 during March-May 2020. The start of the reopening process corresponds to the first date when the stringency index decreased from its maximum value. The reopening ***wait*** is the number of days between the first peak of deaths and the start of the reopening process.[3] A short wait is associated with an early opening, suggesting the reopening started soon after the peak of the outbreak, with negative wait values suggesting that the reopening process took place before the peak was reached. In contrast, a long wait is associated with a later reopening that starts long after the outbreak's peak.

Figure 3 presents the distribution of the reopening wait for countries in Europe and Central Asia. The median country started the reopening 11 days after the peak of the outbreak. A quarter of the countries started relaxing restrictions before the first peak (negative values in Figure 3). The Russian Federation initiated the reopening process the earliest, on April 6, only one week after implementing a full lockdown and almost two months before its COVID-19 deaths peaked. Moldova was the second earliest country to start its reopening on April 18, 42 days before its peak of the pandemic was reached. In contrast, Sweden took the longest time to scale back its restrictions, 57 days after the peak of COVID-19-related deaths, but it never implemented severe restrictions in the first place. Albania is the next country that waited the longest, starting its reopening process 42 days after the first peak of the pandemic.

[3] Graphical representation of these key indicators is illustrated in Figure A2 in the Appendix, using Belgium as an example.

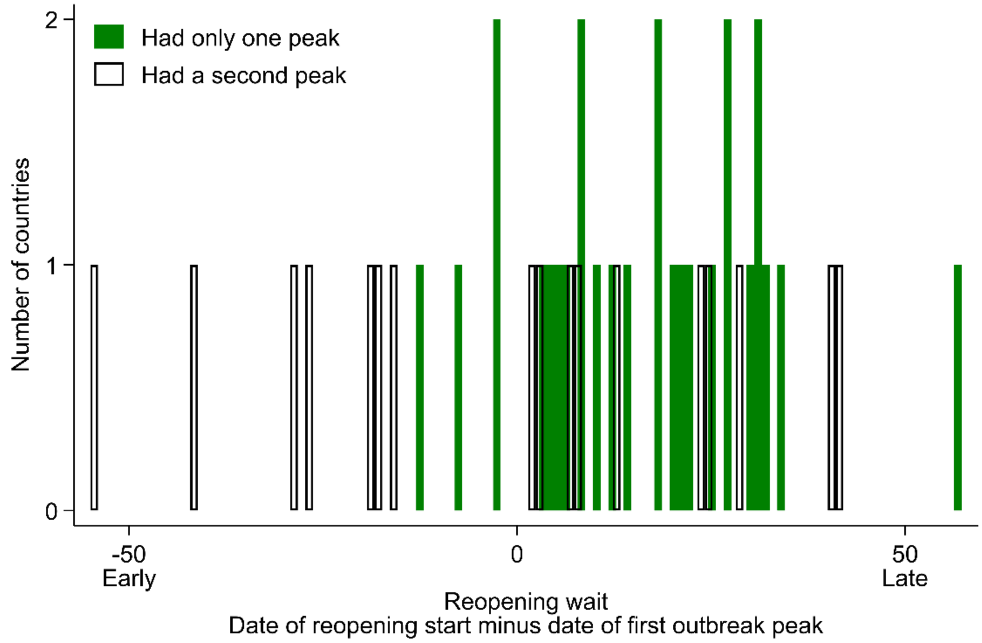
Figure 3 – Reopening wait



Note: this figure plots the country frequency distribution of the reopening wait, defined as the number of days elapsed between the first peak of COVID-19 daily deaths and the date of the start of the reopening process (the day when the stringency index first decreases from its peak value in March-April 2020).

After the first peak of the pandemic during April-May, several countries faced a second, more deadly peak in the following summer months. A country is defined as having a second peak if, at some point, during June-September, the 7-day moving average of daily deaths exceeded the value of the first peak registered in April-May. Figure 4 presents the reopening wait distinguishing between the group of countries that had a second peak, and the group that did not have one during this period. While the group of countries that had a second peak is spread out in terms of reopening wait, the countries that had no second peak consistently reopened late. Moreover, the countries that reopened early eventually reported a second peak during the summer. This summary evidence is suggestive of an association between early reopening and an earlier occurrence of a second peak.

Figure 4 – Reopening wait and second peak



Note: this figure plots the country frequency distribution of the reopening wait, defined as the number of days elapsed between the first peak of COVID-19 daily deaths and the date of the start of the reopening process (the day when the stringency index first decreases from its peak value in March-April 2020). It distinguished between countries that did not have a second peak (in green) and those that did (in white). A second peak is determined to exist when the number of daily deaths by COVID-19 in June-September 2020 exceeds any value reported during April-May 2020.

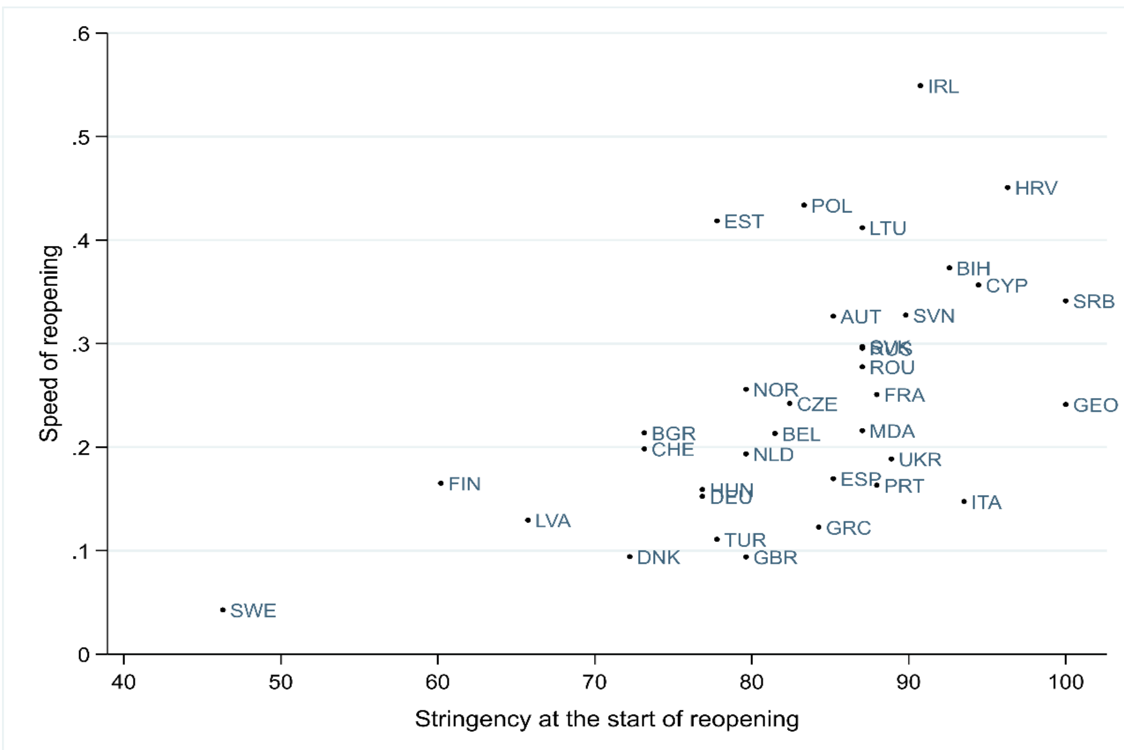
Lastly, the third dimension of interest is the speed of the process itself – i.e., how fast the different restrictions were lifted. This measure varies daily and is akin to the gradient of the reopening process. To construct the speed of reopening, we first smoothed daily changes in the stringency index by a seven-day running mean smoother.[4] We then calculated the speed of recovery as the difference in the daily values of that smoothed stringency index. Figure A1 in the Appendix illustrates that process.

When focusing on the periods when the stringency index was declining, countries in our sample lifted restrictions at an average rate of 0.35 point of the stringency index per day, although this rate varies considerably. The highest average value for a country is 0.87 point per day, while the lowest value is equivalent to 0.10 point per day. Including the periods during which countries re-implemented some restrictions, the sample average decreases to 0.25 point of the stringency index.

[4] Using lowess algorithm and varying smoothing window width to smooth the stringency index do not change our results significantly.

Figure 5 plots these country averages -including both periods of relaxation and re-tightening of restrictions - against the stringency index at the beginning of the reopening process.[5] While we observe a positive correlation, i.e., countries with higher stringency index at the start of the process eventually reopened their economies faster than the countries with initially lower levels of restrictions, the dispersion is large. For example, Italy and Ireland had similar levels of restrictions at the peak of the pandemic but lifted them at different speeds. The average reopening speed for Ireland being about four times higher than the average speed for Italy.

Figure 5 – Average speed at reopening and the stringency index at the start of reopening for countries in Europe and Central Asia



Note: The speed of reopening is expressed as daily changes in the smoothed Stringency Index. The Stringency Index is the Oxford Stringency Index by Hale et al., 2020, at the start of the reopening process, defined as the date when the index first shows a decrease from its maximum recorded value during March-April 2020.

[5] Table A.1 presents the values of the average speed, wait and stringency of the countries in our sample. Figure A.2 presents a graphical summary for an example country.

3. Empirical specification

In this paper, we analyze how different dimensions of the reopening process affect the economic recovery. The reopening process is defined as starting on the date when the stringency index first shows a decrease from its maximum recorded value during March-April 2020.

The main outcome variable in our analysis is the log difference between the observed and counterfactual electricity consumption. This can be understood as a measure of actual electricity consumption relative to the predicted, no-pandemic scenario. Electricity consumption closely tracks economic activity, particularly in the short run (Cicala, 2020). To derive that counterfactual (baseline) electricity consumption in 2020, we estimate a fixed effect regression of daily log electricity consumption as a function of daily hot and cold temperatures, days of the week and weeks of the year dummies, and national holidays on the sample of observations from 2017 to 2019 (e.g., Cicala 2020).[6] The basic specification for electricity consumption regression is:

$$Ln(Y_{i,t}) = \beta H_{i,t} + \theta CH_{i,t} + \pi D_t + \gamma W_t + v_i + \epsilon_{i,t} \ , \qquad (1)$$

where $Y_{c,t}$ is the electricity consumption in country i on date t, $H_{i,t}$ is equal to one if date t is a national holiday, $CH_{i,t}$ represents two variables for the heating and cooling days, D_t are six dummies for days of the week, W_t are the week of the year dummies, v_i is the country-specific fixed effects, and $\epsilon_{i,t}$ is an i.i.d. innovation term. $\beta, \theta, \pi,$ and γ are the estimated parameters. We predict from (1) the electricity consumption that would have been observed on the same day in 2020 with trends of 2017 – 2019 and without the pandemic. For that prediction we use the actual values of the regressors in 2020 and the coefficients estimated on the 2017-2019 sample to predict electricity values in 2020. We call this predicted consumption the pre-pandemic baseline. The main dependent variable in our analysis is the difference between the log of actual and predicted electricity consumption. We denote this difference as $DY_{c,t}$.

The first analysis that we carry out focuses on the effects of the sequence of reopening on relative economic activity. We capture the sequence of reopening through three sets of dummy variables

[6] To approximate the heating demand, we use the number of hours during the day when the ambient temperature was below 18 C (65 F); cooling demand is approximated by the number of hours in a day when the ambient temperature exceeded 24 C (75 F).

constructed using information from the Oxford Government Policy Response Tracker (see tables A.2 and A.3 for details).

The first group of dummy variables captures the variability in lockdown policies, defined as those policies which restrict work and business activities and internal mobility. As described in the background section, most countries moved from a full lockdown to a partial lockdown and then later lifted lockdown measures, with almost all work activities resuming regular schedules and free internal mobility. Some countries however, moved swiftly from a full lockdown to removing all restrictions at once. Therefore, we classify each country on a given day to be in one of the following four categories: full lockdown (which is the reference category), partial lockdown implemented after a full lockdown (captured by the dummy variable $FP_{c,t}$), no restrictions in place following a partial lockdown ($PN_{c,t}$), and no restriction in place following a full lockdown ($FN_{c,t}$). Countries then progress from the reference category to either no restrictions at all or from the reference category to a partial lockdown and then later to full reopening with no restrictions in place. Importantly, we distinguish between a situation when no restrictions are in place after a partial lockdown which represents a more gradual reopening and a situation where restrictions are completely lifted directly after a full lockdown.

The second group of dummy variables focuses on school reopening policies. All countries in our sample, except Sweden, started their reopening process with schools closed (the reference category). Countries then either partially reopened schools, allowing in-person classes for some grades or groups of students (captured by the dummy variable $SP_{c,t}$) or moved to almost normal, pre-COVID-19 mode of school operation ($SN_{c,t}$).

Lastly, the third group of dummy variables focuses on restrictions on public events. Countries started the reopening process with all public events canceled (reference category) and then either removed some restrictions, allowing certain public events to resume (a situation captured by dummy variable $PP_{c,t}$), or removed most of the restrictions, with cancelations being exceptional ($PN_{c,t}$).

Using these notations, equation (2) specifies the model of the effect of the sequencing of reopening on economic outcomes.

$$DY_{c,t} = \alpha + \beta_1 FN_{c,t} + \beta_2 FP_{c,t} + \beta_3 PN_{c,t} + \pi_1 SN_{c,t} + \pi_2 SP_{c,t} + \pi_1 PN_{c,t} + \pi_2 PP_{c,t} +$$

$$+\vartheta P_{c,t} + \delta_c + \varepsilon_{c,t} \tag{2}$$

where δ_c are country fixed effects and $\varepsilon_{c,t}$ is i.i.d. innovation term. We also include the daily number of deaths per million due to COVID-19 ($P_{c,t}$) to control for the direct effects of the pandemic on economic activity. The changes in the number of daily deaths could affect economic activity through, for example, the fears and uncertainties associated with the pandemic's progression that may result in a sharp increase in grocery spending and a dramatic drop in expenditures on restaurants, retail, travel, and public transportation that can translate into reduced energy demand (Baker at al., 2020). In previous work, we provide evidence that the impact of the pandemic itself on economic activity can indeed be comparable to that of the nonpharmaceutical interventions (Demirguc-Kunt, Lokshin and Torre, 2020).

To analyze the relationship between the timing of the reopening and economic activity, we examine whether the effect of the relaxation of lockdown policies -captured by the lockdown dummies $FP_{c,t}$, $PN_{c,t}$, and $FN_{c,t}$ - is different depending on the wait or timing of the reopening process. The wait is defined as the number of days between the date of the local COVID-19 outbreak's first peak (determined as the date of the highest 7-day average of daily deaths during March-May 2020) and the date when the first restrictions started to be lifted (the variable $Wait_c$) (Figure A2). We modify equation (2) by including an interaction term of the lockdown policy dummies with $Wait_c$:

$$DY_{c,t} = \alpha + \beta_1 FN_{c,t} + \beta_2 FN_{c,t} \times Wait_c + \beta_3 FP_{c,t} + \beta_4 FP_{c,t} \times Wait_c + \beta_5 PN_{c,t} + \beta_6 PN_{c,t} \times Wait_c + \pi_1 SN_{c,t} + \pi_2 SP_{c,t} + \pi_1 PN_{c,t} + \pi_2 PP_{c,t} + $$

$$+\vartheta P_{c,t} + \delta_c + \varepsilon_{c,t} \tag{3}$$

Where the coefficient β_1, β_3, and β_5 capture the effect of the specific sequence of lockdown policies corresponding to a reopening process started on the same day as the local peak of the pandemic occurs. The coefficients β_2, β_4, and β_6 capture the additional effect corresponding to one extra day of wait in starting the reopening process.

Next, we focus on the speed of the reopening process, as described in the background section. The empirical specification is the following:

$$DY_{c,t} = \alpha + \beta_1 Speed_{c,t} + \beta_2 Speed_{c,t}^2 + \vartheta P_{c,t} + \delta_c + \varepsilon_{c,t} \tag{4}$$

Where $DY_{c,t}$ is the relative economic activity in country c in day t, $Speed_{c,t}$ is the daily change in the smoothed stringency index, $Speed^2_{c,t}$ is the squared terms of the speed of reopening, $P_{c,t}$ is the daily number of deaths per million due to COVID-19, δ_c are country fixed effects and $\varepsilon_{c,t}$ is i.i.d. innovation term.[7] In this specification, the coefficient β_1 reflects the impact of the speed of lifting the restrictions on economic activity. We introduce the square term of the speed of reopening to capture the non-linearities in the implementation of the reopening policies. Similar to specification (2), we add health measures of pandemic progression $P_{c,t}$ to control for the direct effects of the pandemic on economic activity.

Measures of pandemic progression, such as daily death rates, could be endogenous in specifications (2) - (4) since unobserved factors might affect both the demand for electricity and the health impact of the pandemic. To address these concerns, we instrument the death rate in (2) - (4) with the daily predictions from a standard SIR epidemiological model that assumes an unmitigated spread of the disease (no NPIs implemented). The cross-country variation in these predictions comes from pre-pandemic characteristics like the country's demographic profile, the number of ICU beds, and pre-reopening epidemiological situation, with a basic reproduction number (R_0) of 2.5.[8]

Finally, we explore the effects of trust in government and people's perceptions about the pandemic on the recovery process. Governance differences across countries may matter for the effects of government policies on economic outcomes. One of the aspects of governance that may be particularly relevant is that of trust in government institutions. Most of the social distancing measures implemented during the pandemic rely, to some extent, on voluntary compliance by citizens. High levels of trust in government (and interpersonal trust) are associated with better compliance with social distancing (Giuliano and Rasul, 2020). In order to incorporate the mediating factor of trust in government institutions, we add interaction terms between the trust in government institutions and reopening sequencing in specification (2):

[7] Using the daily number of infected individuals per million does not change the main results.
[8] The model was initially developed by a team at the University of Basel. The online tool providing the country-specific scenarios is available at https://covid19-scenarios.org/.

$$DY_{c,t} = \alpha + \beta_1 FN_{c,t} + \beta_2 FN_{c,t} \times Wait_c + \beta_3 FP_{c,t} + \beta_4 FP_{c,t} \times Wait_c + \beta_5 PN_{c,t} + \beta_6 PN_{c,t} \times Wait_c + \pi_1 PN_{c,t} + \pi_2 PP_{c,t} + \pi_1 SN_{c,t} + \pi_2 SP_{c,t} + \gamma_1 FN_{c,t} \times Trust_c + \gamma_2 FP_{c,t} \times Trust_c + \gamma_3 PN_{c,t} \times Trust_c + \tau Fear_{c,t} + \vartheta P_{c,t} + \delta_c + \varepsilon_{c,t} \quad (5)$$

Where $Trust_c$ is a variable measuring the level of trust in government institutions in country c. This variable is interacted with the dummy variables that capture the specific sequence of lockdown policies. Coefficients γ_1, γ_2, and γ_3 can be interpreted as a measure of the trust premium.

We also control for people's perception of the spread of the virus using high-frequency data on country-level Google searches for the term "death" from Google trends, and define it as variable $Fear_{c,t}$. Mertens et al. (2020) demonstrate that the COVID-19 pandemic increases fears and anxiety in the population, and the fears are correlated with social media use. These data have been used recently by several researchers to assess people's attitudes during the COVID-19 pandemic (e.g., Brodeur et al., 2020; van der Wielen and Barrios, 2020). Hence, we assume that frequencies of Google searches for the term "death" reflect the population's realized perceptions regarding the dangers of the pandemic, which could differ from the information conveyed by official statistics (the number of daily deaths $P_{c,t}$).

4. Data

We use the daily consumption of electricity as a proxy of economic activity in a country. For many countries, electricity data are available with a daily lag and, in some cases, on a sub-regional level, providing an almost real-time picture of economic changes. Cicala (2020) demonstrates that, in the short-run, changes in electricity consumption closely track standard economic indicators.

In our analysis, we use four data sets, the first one is the proxy measure of economic activity, and the remaining covering information on NPIs, the evolution of the pandemic and measures of trust:

1) Electricity consumption. Data are presented as the total daily consumption in megawatts and were obtained from ENTSO-E and national grid operators. Data are available for 37 countries in Europe and Central Asia; the period covered is January 1, 2017, to September 15, 2020.

2) Data on the implementation of non-pharmaceutical interventions from the Oxford Government Response Tracker, World Bank Education Global Practice COVID-19 dashboard, and alternative news sources.

3) Data on daily infections and deaths from COVID-19, by country, from Our World in Data. The period covered is January 1, 2020, to October 1, 2020.

4) Data on trust in different institutions, by country, from the 9th round of the European Social Survey (2018) and the third round of the Life in Transition Survey (2016).

5. Results

Table 2 summarizes the analysis of the impact of reopening sequencing on economic activity based on equation (2). The first column of Table 2 shows the FE estimations of a specification with reopening sequence dummies only. In columns (2) and (3) we control for the epidemiological situation in the country and the potentially endogenous nature of the pandemic. The coefficients in columns (1-3) on the group of dummies reflecting the sequence of coming out of the full national lockdowns indicate that gradual exit results in better economic outcomes.

Moving from full lockdown to no work or business restrictions only increases relative electricity consumption by 1.9 percent and the coefficient loses significance once we properly control for the impact of the pandemic in column 3. At the same time, a progression from full lockdown to partial lockdown results in about 5 percentage points higher relative electricity consumption, and the following relaxation from partial lockdown to no restrictions results in approximately an additional 6 percentage points. In total, a country that moved from a full lockdown to a partial one and later removed the remaining restrictions sees a cumulative increase of about 11 percentage points in economic activity relative to predicted. Given that the average gap between actual and predicted electricity consumption in the first week of reopening is about 8 percentage points, a gradual reopening process appears to entirely close that gap, while a move from full restrictions to no restrictions yields a marginal increase of less than 2 percentage points at best. This may be because a gradual reopening process may give firms and individuals more confidence to increase their levels of investment and consumption than a fast reopening process, which may not restore confidence at the same pace.

We see a similar qualitative effect with school reopening – partial school reopening appears to be beneficial for the economy, while the jump to a complete school reopening has no significant economic impact. Removing restrictions on public events both partially and completely -probably correlated with a wider reopening of the entertainment and massive retail sectors- are associated with increases in relative electricity consumption of over 3 percent. These coefficients also capture the variability in the last stages of the reopening process, as restrictions on public events were the last to be removed after most countries transitioned out of generalized or targeted lockdowns.[9] In columns (2) and (3), when we control for the epidemiological situation in a country, we see that a unit increase in the daily death rate per million reduces electricity consumption by 0.7 percent (column (2)). This effect is no longer statistically significant when the daily death rate is instrumented by the modeled predicted rate.[10]

Columns (4) and (5) show the estimation of the model of specification (3), which analyzes the effect of timing of reopening on economic activity. On the one hand, postponing reopening after the peak of deaths is reached may help stabilize the epidemiological situation, thus reducing fears in society and sending a positive signal to the population about the government's commitment to fighting the virus. On the other hand, opening up too late might prevent workers and small businesses from returning to work, adversely affecting economic recovery.

The estimation results in column (4) suggest opening after a longer wait after the peak has a positive impact on economic activity. For example, delaying the opening up by a week (7 days of wait) increases relative electricity consumption between 0.7 and 1.4 percent, compared to opening up just after the peak. A longer wait even makes a faster reopening feasible, since a reopening from full lockdown to no restrictions is now also significant, but the cumulative impact of the gradual reopening on recovery is still greater and dominates this strategy. Opening before the peak -a negative value in *wait*- reduces the relative level of electricity consumption for all opening-up strategies. The effect of the wait persists when we instrument daily death rates (column 5).

Table 3 presents the results of the fixed effect estimation of equation (4). The first column in Table 3 shows the results of the simplest specification relating the speed of reopening (defined as the daily change in the stringency index) to economic recovery. The negative coefficient on the speed variable indicates that a faster reduction of stringency is associated with lower electricity consumption relative to predicted and hence a slower recovery. Squared term of the speed variable develops a positive sign, suggesting nonlinearities. However, this result is not robust to

[9] The same specification excluding the public events dummies yields similar qualitative results.
[10] The Stock-Yogo weak identification test using the Craig-Donald F statistic is highly significant as is the standard F-test of the first stage.

instrumenting for the pandemic variable (column 4). Higher daily death rates have a significant adverse effect on electricity consumption, as usual. Including daily death rates and instrumenting for it leaves the sign and significance of the speed variable unchanged, however the magnitude is slightly attenuated at about 4 percentage points. According to that specification, an increase in reopening speed by one unit results in a 3.8 percent reduction in electricity consumption.

The results of incorporating the trust variable and estimating equation (5) are presented in Table 4. The first column presents the benchmark regression of equation (3) as a reference. The second column looks at the mediating effect of trust in government institutions, which is measured using the share of individuals having high trust in parliament, as reported in the 2018 round of the European Social Survey or the 2016 Life in Transition Survey.[11] The coefficients of the interaction between the lockdown sequencing dummies and the level of trust are statistically significant. In the case of the dummy indicating a direct transition from full reopening to no restrictions, controlling for trust makes the baseline coefficient significant and larger at 3.9 percentage points. However, the interaction with trust variable results in a negative coefficient, and given that the average share of people having high trust in parliament in countries that opted for a fast reopening is 5.9 percent, the combined effect would imply that the average country that reopened in that way saw a zero or negative change in relative electricity consumption.[12] Hence, once we incorporate trust, for the average country a fast reopening process is associated with a negligible change in relative electricity consumption – qualitatively equivalent to the benchmark results. For the gradual reopening process, the coefficients suggest that higher levels of trust are clearly associated with better outcomes, since the interaction coefficient is now positive. The indicator of trust in parliament is, on average, 3.6 percent in countries that reopened gradually. For the average country in this group, the increase in relative electricity consumption when moving from full to partial lockdown is about 8.7 percent. When moving from partial lockdown to no restrictions, the increase is of 7.6 percent, bringing the total increase in electricity consumption associated with a gradual reopening process to close to 16 percent. For this group of countries, an additional 1 percent in individuals having high trust in parliament is associated with around 2 percent higher relative electricity consumption over the course of the whole reopening process.

[11] We get qualitatively similar results when using trust in the legal system or interpersonal trust variables instead of "trust in parliament" indicator. These estimations are available from the authors.

[12] This is the result of $0.039-0.007^{*}5.9=-0.0023$.

The third column of Table 4 extends our main analysis by controlling for the effect of fear in citizens' perception of COVID-19 on economic outcomes. The coefficient on the fear variable is negative and significant, indicating that a higher perception of fear among the population negatively affects economic activity. A 1 percent increase in the "fear" of the pandemic (search frequencies) reduces the electricity consumption by about 0.02 percent. Compared to the baseline specification shown in column (1), the introduction of the fear variable reduces slightly the magnitude of the wait interaction effects without affecting their significance. All other coefficients are quantitatively similar to the coefficients in the baseline specification. Similar results are observed in regressions when we used the terms "infection" and "COVID."

One of the problems with using Google trends data is the issues of attribution (e.g., Mavragani and Ochoa 2019). What if the searches of the term "death" are not connected with perceptions but rather reflect a time trend when people use Google more frequently for all searchers? To rule-out such possibility, we use searches for "neutral" terms "piano" and "milk." We believe these terms not to be correlated with perceptions of fear. Our falsification test confirms that these terms have no significant impact on the consumption of electricity.

6. Assessing the role of press coverage

The results presented in the last specification of Table 4 show that individual perceptions of the pandemic may have a role in explaining how economic activity varies along the reopening process. Fetzer et al. (2020) show that economic anxiety driven by the COVID-19 pandemic can be detected in the increase in the volume of searches for "recession" and "stock market crash" as soon as the first cases of the disease were detected in each location. This points to the importance of diffusion of information as a factor driving individual behaviors. In fact, individual attitudes and perceptions have also been shown to depend on media coverage, for instance, on views on immigration (Benesch et al., 2019), domestic violence (Banerjee et al. 2019), fertility choices (La Ferrara et al., 2012) and voting (DellaVigna and Kaplan, 2007; Martin and Yurukoglu, 2017). The COVID-19 pandemic is no exception. Bursztyn et al. (2020) show that areas with greater exposure to TV shows that downplayed the threat of COVID-19 eventually saw a greater number of cases and deaths by the disease as viewers of such shows were less prone to adopt precautionary behaviors in the event of the pandemic. Hence there is a reason to believe that changes in media coverage may have an effect on the outcome of reopening.

To explore more this angle, we use GDELT, a data set that contains a snapshot of global news published and distributed every 15 minutes and translated from 65 languages. The GDELT database covers 98.4 percent of the global news (GDELT 2020). This data set records the main themes of each news piece, and in that way, allows us to estimate the volume of news about a given topic in a given country over time. Since news events compete for limited space in media attention, increased coverage of certain events happens at the expense of coverage of other events (Eisensee and Stromberg, 2007). Increased coverage of news related to the COVID-19 pandemic may imply a displacement of news covering other topics, and therefore indicate how much public debate is focused on the pandemic. To the extent more media attention is focused on the pandemic, it may be harder for citizens to "return to normal" slowing the economic recovery associated with the reopening process. At the same time, media coverage is a reflection of the pandemic and economic situation itself. Hence, while causality is difficult to ascertain, press coverage is likely to both shape and be influenced by the evolution of the pandemic and the economic activity.

Table 5 presents the result of this exploratory analysis based on Specification (5). Using data from GDELT, we include a daily indicator of relative frequency of different themes in the news for every country as an additional regressor. There is a strong and significant correlation between the increasing coverage by the press of themes related to "quarantine" and "pandemic" and the electricity consumption. At the same time, a higher presence of the theme "corruption" in the news might indicate a trend to the "return to normal," which is reflected in the positive and significant coefficient on this indicator. These correlations indicate that the news media can play an important role in shaping public perception and response to the current global health emergency and might affect as well as reflect the reopening trajectory.

7. Addressing endogeneity of government policies

Two main concerns about the validity of our result are the potential endogeneity of the wait period and the time-varying effects of the initial conditions on energy consumption. A government might time the start of reopening based on the economic situation in the country and select the reopening date to maximize the speed of recovery. For example, a country with a large tourism industry might want to open earlier to attract tourists. The influx of tourists stimulates the economy and attracts more tourists, accelerating the recovery. Also, as we argue in Section 5, trust in government is an important determinant of economic recovery. Governments might be sensitive to public perceptions about their efforts to fight the pandemic and to protect the economy. Then, both the timing of lifting the restrictions and the recovery trajectory might depend on the level of public trust in the government.

To control for such unobserved, time-variant factors, we replace the observed reopening wait by a simulated reopening wait using two approaches. First, we assume that the government's decision to ease the restrictions depends on the epidemiological situation and the state of the economy. The EU Council guidance about the timing of reopening borders to a non-EU country recommends starting the process when such a country observes, among other criteria, at least two weeks of downward trajectory in the number of COVID-19-infection cases (EU Council 2020). We can estimate the impact of the opening sequence and the wait under the hypothetical scenario that countries followed these recommendations in their own reopening process – that is, if they would wait until that criterion is satisfied to relax their restrictions. In this way, we "purge" the reopening decision from non-epidemiological considerations. The results of this estimation, which shifts the start of the reopening to be exactly once 14 days of the downward trajectory of cases are observed in each country and which is shown in column (1) of Table 6, demonstrate that our main conclusions hold when fixing the reopening date on epidemiological considerations and we remove, for instance, the effect of the public trust in government on the decision to open-up.[13] The gradual sequence of reopening is more beneficial for the economy compared to lifting all restrictions at once. The coefficients associated with the interaction with the reopening wait are no longer significant, and this is expected since the main channel through which it may affect economic activity -the commitment signal sent by the government to fearful consumers and investors- is annulled in this empirical exercise.

The second approach is to use as wait period the average wait duration in the neighboring countries weighted by the distance to these countries.[14] We argue that the country's government is affected by the behavior of its neighbors. If many countries started to open up, the government would be pressed, both by the population and by businesses, to also follow the trend. At the same time, the effect of neighbors opening up on the country's economy might be limited in the short run. To

[13] In this estimation we adjusted the dates of all phases of the reopening (e.g., the dummy variables that indicate a move from full to partial lockdown) according to the new reopening date.
[14] We use two definition of distance between the countries: distance between the country capitals and the population weighted distance. Both measures produce similar results.

create these weighted averages, we used as weights the distances between two given countries as measured between their respective capital cities. For any given country, closer neighboring countries will have a larger weight than those of more distant countries. Each country then is assigned the reopening wait resulting from the distance weighted average of the reopening wait of all the countries in the sample. The results of using this alternative reopening wait are presented in column (2) of Table 6 and suggest that a gradual reopening process results in a cumulative increase in electricity consumption of about 10 percentage points, which is higher than the change associated with a fast reopening (no significant effect). When interacted with the dummy variables capturing the sequencing of the lockdown reopening, the alternative reopening wait is no longer significant, just as in the results of column (1).

Overall, the specifications estimated in columns (1) and (2) of Table 6 suggest that our main results on the beneficial economic effects of gradual reopening over a fast reopening are robust to controlling for potential endogeneity in the timing of reopening, The results of reopening wait on the other hand suggest that it does not have an effect on economic recovery when it is modeled strictly on epidemiological considerations.

Another potential issue with our results is that countries that are in the worst economic situation might choose to open faster. To test the sensitivity of our results to economic conditions prior to reopening, we re-estimate equation (4), adding three interaction terms between the sequence dummies and the percentage drop of GDP in a country during the second quarter of 2020. This period is relevant to our analysis because all the reopening happened during that quarter. The results of this estimation are shown in column (3) of Table 6. Again, controlling for the depth of economic recession prior to reopening does not change the qualitative conclusions of our main estimations. A progression from the full to partial lockdown and then to reopening results in higher electricity consumption compared to the move from the full to no lockdown. The estimation also demonstrates that, compared to other trajectories, the move from the full to partial lockdown benefits the most the countries that experienced large economic declines before reopening.

8. Conclusion

This paper analyzes the reopening process of the countries in Europe and Central Asia after the first wave of the pandemic and provides evidence on the effects of different reopening trajectories, the speed, and sequencing of reopening, on economic recovery. We use high-frequency data on electricity consumption during the reopening period as a proxy indicator for the levels of economic activity.

Our analysis indicates that countries that adopted a gradual and staged reopening experienced stronger economic recovery compared to the countries that rushed into lifting the restrictive measures. The transition from the full to partial to no lockdown appears to be a more effective strategy of lifting the restrictions than a quick lifting of the restrictions from full to no lockdown. Similarly, economic activity seems to react positively to partial school reopening, compared to the full school reopening.

The timing of reopening, i.e., the wait time expressed in the number of days after the first peak of deaths before the reopening process starts, also matters. Opening before the peak of the pandemic reduces electricity consumption relative to predicted, while delaying the opening past the peak leads to faster recovery. However, when this decision is modeled to be based strictly on epidemiological considerations it has no effect on the path of economic recovery. Lastly, countries that reopen slowly by gradually lifting the stringency measures rather than lifting them faster also experience a more robust economic recovery.

We demonstrate that governance, particularly trust in government institutions, is an essential determinant of economic recovery. Our results show that a higher level of trust in government is associated with a faster recovery among countries that carried out a gradual reopening process. Incorporating trust into the analysis even increases the success of a fast reopening process, although there the relationship is more complex. The analysis also shows that fear and anxiety about the spread of the pandemic may hinder the recovery of economic activity as countries reopen. Providing the population with objective information and data about the progress of the pandemic could be an effective policy instrument in promoting faster recovery, though causality is difficult to establish.

The results of our paper have important policy implications for the second wave of the COVID-19 pandemic that is sweeping the world during fall 2020. In stark contrast with the spring, when nations were united by fear and hope of defeating the virus, now "pandemic fatigue" is setting in (WHO 2020). The growing public exhaustion and frustration lead to a tendency to risk the dangers of the virus and to neglect protective behavior. Public officials are also reluctant to introduce strict restrictions, fearing their economic impact, though they find themselves with few other options as the second wave of the pandemic worsens. As the countries start their second reopening process, our results suggest a careful, gradual, and transparent reopening process is likely to be optimal in both minimizing the health costs of the pandemic and increasing the chances of a faster recovery.

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Table 1: Descriptive statistics for the dependent and main independent variables.

Variables	Mean	Std Dev	Min	Max	Data Source
Dependent variables					
Log electricity consumption	11.868	1.499	8.950	15.530	ENTSOE
Log difference relative to counterfactual	-0.175	0.423	-3.25	0.378	Own estimation
Opening sequence dummies					
Full lockdown to no restrictions	0.213	0.410	0	1	OxCGRT
Full lockdown to partial lockdown	0.249	0.432	0	1	OxCGRT
Partial lockdown to no restrictions	0.445	0.497	0	1	OxCGRT
School reopening dummies					
Full school closure to no restrictions	0.209	0.406	0	1	OxCGRT
Full school closure to partial school opening	0.448	0.498	0	1	OxCGRT
Public event restriction removal dummies					
Full ban on public event to no restrictions	0.062	0.241	0	1	OxCGRT
Full ban on public event to partial restrictions	0.448	0.497	0	1	OxCGRT
Daily COVID-19 death rate (per 1,000,000)*	0.548	0.866	-4.964	8.641	OWID
Speed of reopening (change in stringency index)	0.245	0.350	-0.714	2.086	OxCGRT
Opening wait from the peak of the pandemic (observed)	6.799	21.803	-55	57	Own estimation
Opening wait from the peak of the pandemic (14-day decreasing cases criterion)	13.743	16.430	-20	59	Own estimation
Opening wait from the peak of the pandemic (distance weighted average from neighboring countries)	8.499	5.865	-7.10	21.48	Own estimation
Percent of individuals having high trust in parliament (score 9-10 in ESS; score 5 in LiTS)	4.488	4.194	0.32	19.43	ESS 9 / LiTS III
News coverage terms					
"Quarantine"	0.178	0.090	0.019	0.631	GDELT
"Pandemic"	0.359	0.120	0.084	0.731	GDELT
"Corruption"	0.325	0.142	0.074	0.802	GDELT
Google trends searchers for "death"	0.452	0.182	0	1	Google Trends

Note: ENTSOE is the European Network of Transmission System Operators for Electricity, OxCGRT is the Oxford Coronavirus Government Response Tracker, OWID is Our World In Data. OWID sources COVID-19 related cases and deaths from the European Centre for Disease Prevention and Control (ECDC). ESS 9 = European Social Survey, round 9, 2018. LiTS III = Life in Transition Survey round III, 2016. *Days with negative deaths correspond to retrospective updates that decrease the total number of deaths. The GDELT is the database on global new coverage. The news coverage variables are of the news frequencies normalized by the maximum frequency of coverage of a particular term for a country during the period from the date of reopening till September 30, 2020.

Table 2: Fixed effect and Instrumental Variable Fixed effect regressions of the change of electricity consumption and the speed of opening up.
Note: this table reports estimates from the following panel regression model:

$$DY_{c,t} = \alpha + \beta_1 FN_{c,t} + \beta_2 FP_{c,t} + \beta_3 PN_{c,t} + \pi_1 PUN_{c,t} + \pi_2 PUP_{c,t} + \pi_1 SN_{c,t} + \pi_2 SP_{c,t} ++\vartheta P_{c,t} + \delta_c + \varepsilon_{c,t}$$

Where $DY_{i,t}$ is the difference between the actual and counterfactual (predicted) log daily electricity consumption for country i on date t. $FN_{c,t}$ is a dummy variable indicating a transition from the full national lockdown to no lockdown, $FP_{c,t}$ from the full lockdown to partial lockdown, PN_{ct} and from partial to no lockdown; $SP_{c,t}$ dummy indicates the transition from complete school closure to partial school closure, $SN_{c,t}$ dummy indicates the move to a pre-COVID-19 mode of school operation. Dummies $PP_{c,t}$ and $PN_{c,t}$ denote partial and complete removal of restrictions on public events relative to a full ban on public events, $P_{i,t}$ is the 7-day moving average of daily deaths by COVID-19, expressed per million people, v is the country fixed effect. Columns 1, 2, and 4 show estimates of the panel model with ordinary least squares with fixed effects. In columns 4, $P_{i,t}$ is instrumented with the daily deaths by COVID-19 estimated by a SIR epidemiological model that assumes unmitigated spread of the disease (no NPIs in place). The coefficients on the instrument in the first stage regression are also shown in columns 4. We report the first stage F-statistic and the weak ID test, which is the Stock-Yogo weak identification test with critical values: 10% maximal IV size=16.38 15%=8.96 20%=6.66 25%=5.9363. *** indicates that the coefficient is significant at 1% level, ** - at 5% level, * - at 10% level.

	(1) FE		(2) FE		(3) FE IV		(4) FE		(5) FE IV	
	Coef.	*S. Err.*	Coef.	*S. Err.*	Coef.	*S. Err.*	Coef.	*S. Err.*	Coef.	*S. Err.*
National reopening										
Full lockdown to no restrictions	0.019**	*0.008*	0.015*	*0.008*	0.012	*0.010*	0.018**	*0.009*	0.011	*0.010*
Full lockdown to partial restrictions	0.050***	*0.006*	0.051***	*0.006*	0.055***	*0.007*	0.082***	*0.007*	0.095***	*0.011*
Partial lockdown to no restrictions	0.063***	*0.006*	0.059***	*0.006*	0.056***	*0.007*	0.076***	*0.007*	0.082***	*0.012*
Public events reopening										
Removal of restriction on public events	0.031***	*0.005*	0.033***	*0.005*	0.036***	*0.005*	0.033***	*0.005*	0.036***	*0.005*
Partial removal of restriction on public	0.028***	*0.004*	0.030***	*0.004*	0.033***	*0.005*	0.030***	*0.004*	0.033***	*0.005*
School reopening										
Full school reopening	0.007	*0.005*	0.003	*0.005*	-0.001	*0.007*	0.007	*0.005*	0.004	*0.008*
Partial school reopening	0.014***	*0.004*	0.012***	*0.004*	0.009*	*0.005*	0.014***	*0.004*	0.012**	*0.005*
Interactions with wait										
Full to no restrictions x wait							0.001***	*0.000*	0.002***	*0.000*
Full to partial restrictions x wait							-0.001	*0.001*	-0.001	*0.001*
Partial to no restrictions x wait							0.002***	*0.000*	0.002***	*0.001*
Daily death per million			-0.007***	*0.001*	-0.015	*0.010*	-0.003**	*0.002*	-0.014	*0.010*
					First stage				*First stage*	
Modeled death rate					-0.017***	*0.002*			-0.015***	*0.003*
F-test 11, 4715)					46.89***				42.29***	
Weak identification test					128.25***				115.79***	
# of observations	4,831		4,831		4,761		4,833		4,761	
# of countries	35		35		35		35		35	

Table 3: Fixed effect and Instrumental Variable Fixed effect regressions of the change of electricity consumption and the speed of opening up.

Note: this table reports estimates from the following panel regression model:

$$DY_{c,t} = \alpha + \beta_1 Speed_{c,t} + \beta_2 Speed_{c,t}^2 + \vartheta P_{c,t} + \delta_c + \varepsilon_{c,t}$$

Where $DY_{i,t}$ is the difference between the actual and counterfactual (predicted) log daily electricity consumption for country i on date t. and v is the country fixed effect. $P_{i,t}$ is the 7-day moving average of daily deaths by COVID-19, expressed per million people. Columns 1, 2, and 3 show estimates of the panel model with ordinary least squares with fixed effects. In columns 4, $P_{i,t}$ is instrumented with the daily deaths by COVID-19 estimated by a SIR epidemiological model that assumes unmitigated spread of the disease (no NPIs in place). The coefficients on the instrument in the first stage regression are also shown in columns 4. We report the first stage F-statistic and the weak ID test, which is the Stock-Yogo weak identification test with critical values: 10% maximal IV size=16.38 15%=8.96 20%=6.66 25%=5.9363. *** indicates that the coefficient is significant at 1% level, ** - at 5% level, * - at 10% level.

	(1) FE		(2) FE		(3) FE		(4) FE-IV	
	Coef.	*Std. Error*	Coef.	*Std. Error*	Coef.	*Std. Error*	Coef.	*Std. Error*
Speed of opening up	-0.036***	*0.003*	-0.049***	*0.006*	-0.046***	*0.006*	-0.038***	*0.006*
Speed of opening up (squared)			0.017***	*0.006*	0.014**	*0.006*	0.007	*0.007*
				Pandemic progression indicators				
Daily deaths per million					-0.011***	*0.001*	-0.032***	*0.007*
							First Stage Instruments	
Modeled death rate							-0.025***	*0.002*
F-test (34, 4593)							134.03***	
Weak identification test							254.83	
# of observations	4,796		4,796		4,796		4,761	
# of countries	35		35		35		35	

Table 4: Instrumental variable fixed effect regressions of the change of electricity consumption, the sequencing of reopening, trust, and fear.

Note: this table reports estimates from the following panel regression model:

$$DY_{c,t} = \alpha + \beta_1 FN_{c,t} + \beta_2 FN_{c,t} \times Wait_c + \beta_3 FP_{c,t} + \beta_4 FP_{c,t} \times Wait_c + \beta_5 PN_{c,t} + \beta_6 PN_{c,t} \times Wait_c + \pi_1 PUN_{c,t} + \pi_2 PUP_{c,t} + \pi_1 SN_{c,t} + \pi_2 SP_{c,t} + \gamma_1 FN_{c,t} \times Trust_c + \gamma_2 FP_{c,t} \times Trust_c + \gamma_3 PN_{c,t} \times Trust_c + \tau Fear_{c,t} + \vartheta P_{c,t} + \delta_c + \varepsilon_{c,t}$$

Where $DY_{i,t}$ is the difference between the actual and counterfactual (predicted) log daily electricity consumption for country i on date t. $FN_{c,t}$ is a dummy variable indicating a transition from the full national lockdown to no lockdown, $FP_{c,t}$ from the full lockdown to partial lockdown, PN_{ct} and from partial to no lockdown; $SP_{c,t}$ dummy indicates the transition from complete school closure to partial school closure, $SN_{c,t}$ dummy indicates the move to pre-COVID-19 mode of school operation. Dummies $PP_{c,t}$ and $PN_{c,t}$ denote partial and complete removal of restrictions on public events relative to full ban on public events, $Wait_c$ is a variable measuring the number of days between the first peak of daily deaths by COVID-19 during April-May and the day when the reopening process started in country c, $Trust_c$ is a variable indicating the level of trust in country c, measured as the percent of individuals that report having high trust (score of 9 or 10 in the European Social Survey or score of 5 in the Life in Transition Survey) in the country's parliament, $Fear_{c,t}$ is a variable measuring the normalized volume of Google searches for the word "death" in country c on day t, $P_{i,t}$ is the 7-day moving average of daily deaths by COVID-19, expressed per million people, v is the country fixed effect. $P_{i,t}$ is instrumented with the daily deaths by COVID-19 estimated by a SIR epidemiological model that assumes unmitigated spread of the disease (no NPIs in place). The coefficients on the instrument in the first stage regression are also shown in columns 1-3. We report the first stage F-statistic and the weak ID test, which is the Stock-Yogo weak identification test with critical values: 10% maximal IV size=16.38 15%=8.96 20%=6.66 25%=5.9363. *** indicates that the coefficient is significant at 1% level, ** - at 5% level, * - at 10% level

	(1) FE IV		(2) FE IV		(3) FE IV	
	Coef.	*S. Err.*	Coef.	*S. Err.*	Coef.	*S. Err.*
National reopening						
Full lockdown to no restrictions	0.011	*0.010*	0.039**	*0.012*	0.010	*0.010*
Full lockdown to partial restrictions	0.095***	*0.011*	0.037***	*0.013*	0.093***	*0.011*
Partial lockdown to no restrictions	0.082***	*0.012*	0.044***	*0.014*	0.079***	*0.012*
Public events reopening						
Removal of restriction on public events	0.036***	*0.005*	0.035***	*0.005*	0.037***	*0.005*
Partial removal of restriction on public	0.033***	*0.005*	0.033***	*0.005*	0.033***	*0.004*
School reopening						
Full school reopening	0.004	*0.008*	0.007	*0.008*	0.002	*0.008*
Partial school reopening	0.012**	*0.005*	0.014**	*0.009*	0.011**	*0.005*
Interactions with wait						
Full to no restrictions x reopening wait	0.002***	*0.000*	0.002***	*0.001*	0.001***	*0.000*
Full to partial restrictions x reopening wait	-0.001	*0.001*	-0.004	*0.001*	-0.001	*0.001*
Partial to no restrictions x reopening wait	0.002***	*0.001*	0.002***	*0.001*	0.002***	*0.001*
Interactions with trust in parliament						
Full to no restrictions x share high trust			-0.007**	*0.003*		
Full to partial restrictions x share high trust			0.014***	*0.002*		
Partial to no restrictions x share high trust			0.009***	*0.001*		
Normalized Google searches for "Death"					-0.023***	*0.000*
Daily death per million	-0.014	*0.010*	-0.015	*0.014*	-0.030**	*0.013*
	First stage		*First stage*		*First stage*	
Modeled death rate	-0.015***	*0.001*	-0.015***	*0.001*	-0.016***	*0.002*
F-test	42.29***		55.30***		40.37***	
Weak identification test	115.79***		103.53***		118.50***	
# of observations	4,761		4,608		4,761	
# of countries	35		34		35	

Table 5: Instrumental variable fixed effect regressions of the change of electricity consumption, the sequencing of reopening, trust, and fear.

Note: this table reports estimates from the following panel regression model:

$$DY_{c,t} = \alpha + \beta_1 FN_{c,t} + \beta_2 FN_{c,t} \times Wait_c + \beta_3 FP_{c,t} + \beta_4 FP_{c,t} \times Wait_c + \beta_5 PN_{c,t} + \beta_6 PN_{c,t} \times Wait_c + \pi_1 PUN_{c,t} + \pi_2 PUP_{c,t} + \pi_1 SN_{c,t} + \pi_2 SP_{c,t} + + \tau GDELT_{c,t} + \vartheta P_{c,t} + \delta_c + \varepsilon_{c,t}$$

Where $DY_{i,t}$ is the difference between the actual and counterfactual (predicted) log daily electricity consumption for country *i* on date *t*. $FN_{c,t}$ is a dummy variable indicating a transition from the full national lockdown to no lockdown, $FP_{c,t}$ from the full lockdown to partial lockdown, PN_{ct} and from partial to no lockdown; $SP_{c,t}$ dummy indicates the transition from complete school closure to partial school closure, $SN_{c,t}$ dummy indicates the move to pre-COVID-19 mode of school operation. Dummies $PP_{c,t}$ and $PN_{c,t}$ denote partial and complete removal of restrictions on public events relative to full ban on public events, $Wait_c$ is a variable measuring the number of days between the first peak of daily deaths by COVID-19 during April-May and the day when the reopening process started in country *c*, $GDELT_{c,t}$ is a variable measuring the daily frequency of news coverage of the particular term in country *c* on day *t*, $P_{i,t}$ is the 7-day moving average of daily deaths by COVID-19, expressed per million people, *v* is the country fixed effect. $P_{i,t}$ is instrumented with the daily deaths by COVID-19 estimated by a SIR epidemiological model that assumes unmitigated spread of the disease (no NPIs in place). The coefficients on the instrument in the first stage regression are also shown in columns 1-3. We report the first stage F-statistic and the weak ID test, which is the Stock-Yogo weak identification test with critical values: 10% maximal IV size=16.38 15%=8.96 20%=6.66 25%=5.9363. *** indicates that the coefficient is significant at 1% level, ** - at 5% level, * - at 10% level

	(1) FE IV		(2) FE IV		(3) FE IV	
	Coef.	*S. Err.*	Coef.	*S. Err.*	Coef.	*S. Err.*
National reopening						
Full lockdown to no restrictions	-0.005	*0.009*	-0.008	*0.009*	0.011	*0.010*
Full lockdown to partial restrictions	0.076***	*0.010*	0.055***	*0.009*	0.097***	*0.011*
Partial lockdown to no restrictions	0.061***	*0.010*	0.037***	*0.009*	0.086***	*0.012*
Public events reopening						
Removal of restriction on public events	0.021***	*0.006*	0.025***	*0.006*	0.036***	*0.005*
Partial removal of restriction on public	0.027***	*0.005*	0.022***	*0.005*	0.032***	*0.004*
School reopening						
Full school reopening	-0.008	*0.007*	-0.032***	*0.006*	0.006	*0.008*
Partial school reopening	0.003	*0.005*	-0.007*	*0.005*	0.013**	*0.005*
Interactions with wait						
Full to no restrictions x reopening wait	0.002***	*0.000*	0.002***	*0.000*	0.002***	*0.000*
Full to partial restrictions x reopening wait	0.001	*0.001*	0.001*	*0.001*	-0.001	*0.001*
Partial to no restrictions x reopening wait	0.003***	*0.001*	0.002**	*0.001*	0.003***	*0.001*
Country news coverage						
Quarantine	-0.218***	*0.035*				
Pandemics			-0.261***	*0.038*		
Corruption					0.080***	*0.031*
Daily death per million	-0.007	*0.011*	-0.019**	*0.010*	-0.009	*0.009*
	First stage		*First stage*		*First stage*	
Modeled death rate	-0.014***	*0.002*	-0.016***	*0.002*	-0.017***	*0.002*
F-test (12, 4714)	51.04***		38.92***		39.49***	
Weak identification test	101.84***		119.16***		144.51***	
# of observations	4,761		4,761		4,761	
# of countries	35		35		35	

Table 6: Sensitivity analysis and addressing endogeneity. Instrumental variable fixed effect regressions of the change of electricity consumption, the sequencing of reopening, trust, and fear.

Note: this table reports estimates from the following panel regression model:

$$DY_{c,t} = \alpha + \beta_1 FN_{c,t} + \beta_2 FN_{c,t} \times Wait_c + \beta_3 FP_{c,t} + \beta_4 FP_{c,t} \times Wait_c + \beta_5 PN_{c,t} + \beta_6 PN_{c,t} \times Wait_c + \pi_1 PUN_{c,t} + \pi_2 PUP_{c,t} + \pi_1 SN_{c,t} + \pi_2 SP_{c,t} + \gamma_1 FN_{c,t} \times Loss_c + \gamma_2 FP_{c,t} \times Loss_c + \gamma_3 PN_{c,t} \times Loss_c + \vartheta P_{c,t} + \delta_c + \varepsilon_{c,t}$$

Where $DY_{i,t}$ is the difference between the actual and counterfactual (predicted) log daily electricity consumption for country i on date t. $FN_{c,t}$ is a dummy variable indicating a transition from the full national lockdown to no lockdown, $FP_{c,t}$ from the full lockdown to partial lockdown, PN_{ct} and from partial to no lockdown; $SP_{c,t}$ dummy indicates the transition from complete school closure to partial school closure, $SN_{c,t}$ dummy indicates the move to pre-COVID-19 mode of school operation. Dummies $PP_{c,t}$ and $PN_{c,t}$ denote partial and complete removal of restrictions on public events relative to full ban on public events, $Wait_c$ is a variable measuring the number of days between the first peak of daily deaths by COVID-19 during April-May and the day when the reopening process started in country c, $Loss_c$ is a variable indicating the percent loss of GDP in the second quarter of 2020 in country c, $P_{i,t}$ is the 7-day moving average of daily deaths by COVID-19, expressed per million people, v is the country fixed effect. $P_{i,t}$ is instrumented with the daily deaths by COVID-19 estimated by a SIR epidemiological model that assumes unmitigated spread of the disease (no NPIs in place). The drop in the number of observations in estimation (1) are related to moving the start of reopening dates forward. For example, reopening date in Russia under 14 days epidemiological guidance scenario is 52 days after the date when the country actually opened up. The coefficients on the instrument in the first stage regression are also shown in columns 1-3. We report the first stage F-statistic and the weak ID test, which is the Stock-Yogo weak identification test with critical values: 10% maximal IV size=16.38 15%=8.96 20%=6.66 25%=5.9363. *** indicates that the coefficient is significant at 1% level, ** - at 5% level, * - at 10% level

	(1) FE IV		(2) FE IV		(3) FE IV	
	Coef.	*S. Err.*	Coef.	*S. Err.*	Coef.	*S. Err.*
National reopening						
Full lockdown to no restrictions	0.025	*0.015*	0.028	*0.024*	-0.101***	*0.033*
Full lockdown to partial restrictions	0.061***	*0.008*	0.053***	*0.007*	0.064***	*0.024*
Partial lockdown to no restrictions	0.054***	*0.008*	0.053***	*0.009*	0.021	*0.024*
Public events reopening						
Removal of restriction on public events	0.033***	*0.005*	0.036***	*0.005*	0.039***	*0.005*
Partial removal of restriction on public	0.034***	*0.005*	0.033***	*0.004*	0.032***	*0.005*
School reopening						
Full school reopening	-0.013**	*0.007*	-0.000	*0.007*	0.007	*0.008*
Partial school reopening	0.002	*0.005*	0.009*	*0.005*	0.014***	*0.005*
Interactions with wait	*14 days criterion*		*Distance weighted*			
Full to no restrictions x reopening wait	-0.000	*0.000*	0.001	*0.001*		
Full to partial restrictions x reopening wait	-0.003	*0.002*	-0.003	*0.003*		
Partial to no restrictions x reopening wait	-0.001	*0.000*	0.001	*0.002*		
Interactions with loss of GDP in Q2 2020						
Full to no restrictions x loss					-0.001	*0.002*
Full to partial restrictions x loss					0.009***	*0.003*
Partial to no restrictions x loss					0.003	*0.002*
Daily death per million	-0.018***	*0.007*	-0.015	*0.011*	-0.010	*0.010*
	First stage		*First stage*		*First stage*	
Modeled death rate	-0.015***	*0.001*	-0.014***	*0.001*	-0.022***	*0.002*
F-test	35.22***		39.27***		26.17***	
Weak identification test	109.74***		112.06***		207.34***	
# of observations	4,197		4,761		4,761	
# of countries	35		35		35	

Appendix

Appendix 1. Definition of NPI sequencing dummies

The main source for information on the implementation of NPIs is the data set compiled by the Coronavirus Government Response Tracker of the Blavatnik School of Government at Oxford University (https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker). We use the version of the data set published on October 1, 2020. The following criteria were used to define the four NPIs:

a) Partial lockdown:
   1) Indicator C2 ("workplace restrictions") takes a value of 2 ("require closing for some category of workers") or 3 ("require closing all-but-essential workplaces") and C2_Flag takes a value of 0 ("Targeted")
      Or
   2) Indicator C7 ("restrictions on internal movements") takes a value of 1 ("recommend movement restriction"), and C2 takes a value of 2 ("require closing for some category of workers")

b) Full lockdown:
   1) Indicator C2 ("workplace restrictions") takes a value of 2 ("require closing for some category of workers") or 3 ("require closing all-but-essential workplaces") and C2_Flag takes a value of 1 ("General")
      Or
   2) Indicator C7 ("restrictions on internal movements") takes a value of 2 ("movement restricted") and C2 takes a value of 2 ("require closing for some category of workers")

c) Restrictions on public events:
   1) Cancelation: Indicator C3 takes a value of 2 ("require canceling")
   2) Partial restrictions: Indicator C3 takes a value of 1 ("recommend canceling")
   3) No restrictions: Indicator C3 takes a value of 0 ("no measures")

d) School closure:
   1) Cancelation: Indicator C1 takes a value of 3 ("require the closing of all levels") or 2 ("require closing some levels") and C1_Flag takes a value of 1 ("General")
   2) Partial closure: Indicator C1 takes a value of 2 ("require closing some levels") and C1_Flag takes a value of 1 ("General")
   3) Limited or no restrictions: Indicator C1 takes a value of 1 ("recommend closing") or 0 ("no measures") and C1_Flag takes a value of 1 ("General")

For countries not included in the Oxford Government Response Tracker, we used alternative sources, including news reports for full and partial lockdown measures and the World Bank Education COVID-19 Dashboard (https://www.worldbank.org/en/data/interactive/2020/03/24/world-bank-education-and-covid-19) for school closures.

Given the above definitions of NPIs, the dummy variables characterizing the sequencing of the reopening process are defined in the following way:

Full and partial lockdown dummies

- Full lockdown to no restrictions: takes a value of 1 on every day when neither a full lockdown nor a partial lockdown are in place and at no point in any of the previous days was a partial lockdown in place.
- Full lockdown to partial lockdown: takes a value of 1 on every day when a partial lockdown is in place and at some point in any of the previous days was a full lockdown in place.
- Partial lockdown to no restrictions: takes a value of 1 on every day when neither a full lockdown nor a partial lockdown are in place and at some point in any of the previous days was a partial lockdown in place.

Public events reopening

- Removal of restrictions of public events: takes a value of 1 on every day when no restrictions to public events are in place.
- Partial removal of restrictions on public events: takes a value of 1 on every day when a partial restrictions to public events are in place.

Schools reopening

- Full school reopening: takes a value of 1 on every day when limited or no school closures are in place.
- Partial school reopening: takes a value of 1 on every day when partial school closures are in place.

Figure A1 – Changes in the stringency and 7-days smoothed stringency index and the speed of reopening by number of days since the start of reopening for Austria

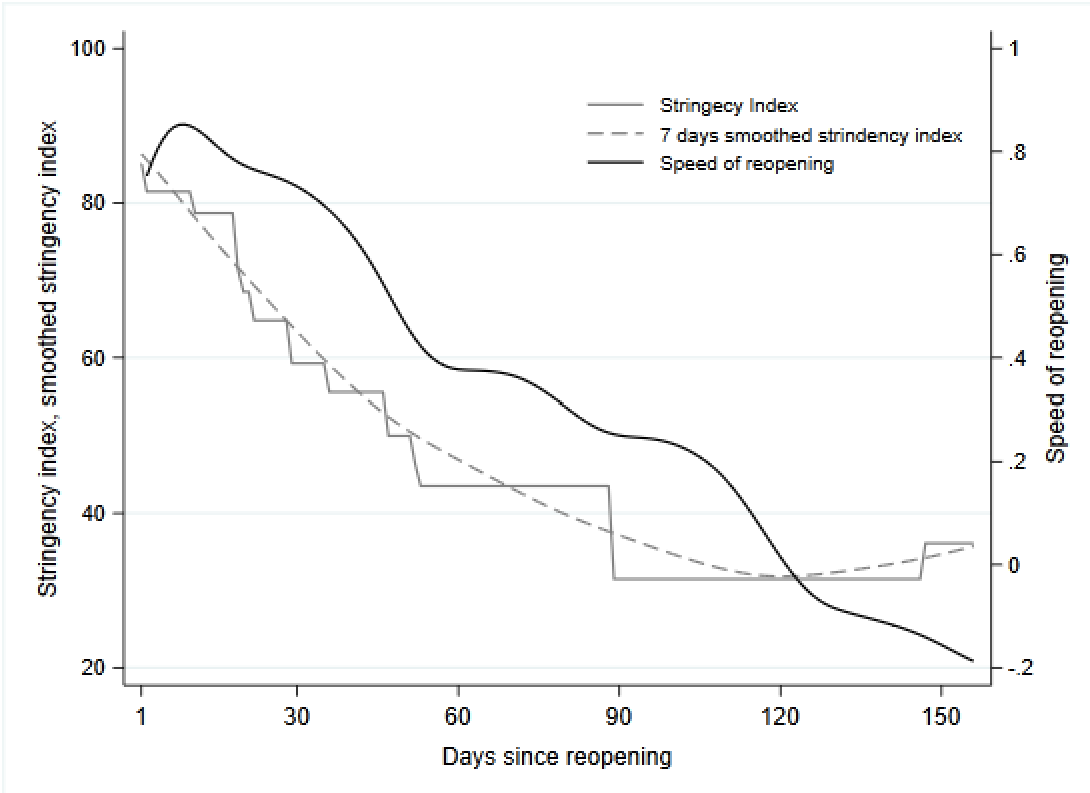

Figure A2 – First peak of the pandemic, reopening trajectory, and reopening wait for Belgium

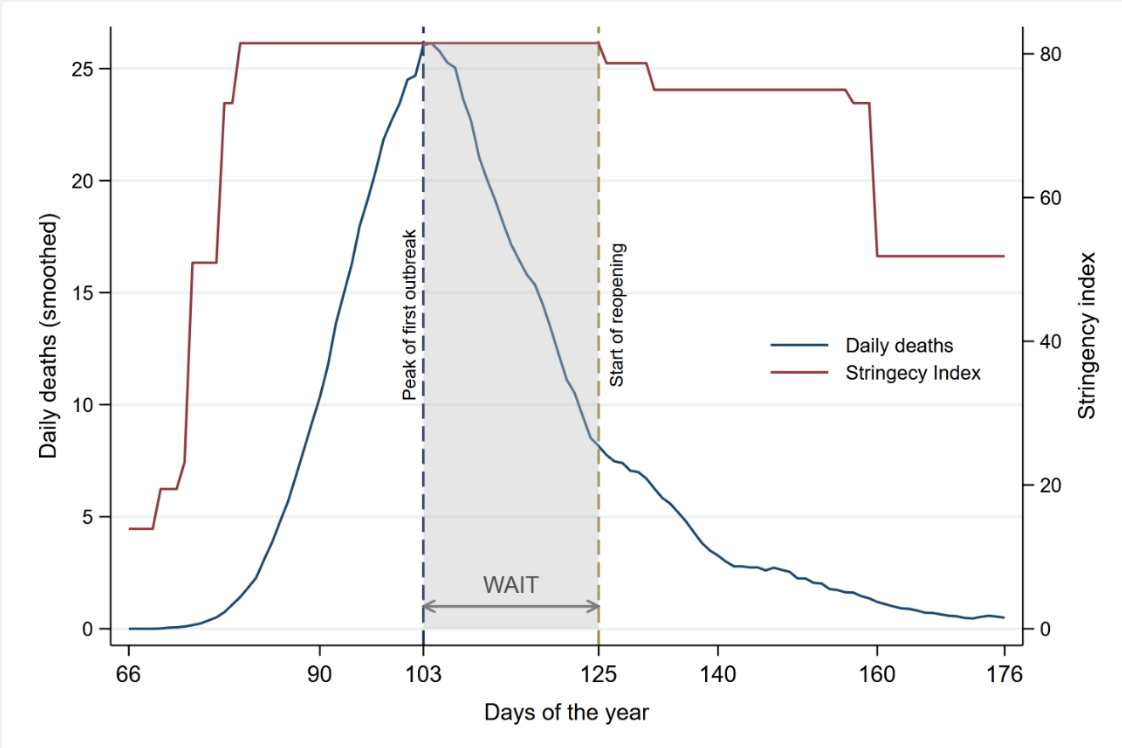

Table A.1: Descriptive statistics by country.

Country	Daily deaths at first peak (per million)	Wait (days)	Stringency index				Speed (per day)
			At reopening	Reopening +10 days	Reopening +30 days	Reopening +60 days	
Albania	0.55	42	89.81	86.11	67.59	59.26	0.36
Armenia	2.41						
Austria	2.40	3	85.19	78.70	59.26	43.52	0.30
Azerbaijan	0.18	-27	97.22	87.96	77.78	96.30	0.12
Belarus	0.54	-29	19.44	13.89	13.89	13.89	0.02
Belgium	24.63	21	81.48	75.00	75.00	48.15	0.20
Bosnia and	1.65	-19	92.59	90.74	71.30	51.85	0.38
Bulgaria	0.53	-16	73.15	62.96	44.44	36.11	0.21
Croatia	0.84	7	96.30	89.81	53.70	32.41	0.42
Cyprus	1.14	34	94.44	92.59	76.85	50.00	0.29
Czech Republic	0.97	-13	82.41	74.07	57.41	41.67	0.23
Denmark	2.81	6	72.22	68.52	65.74	57.41	0.13
Estonia	2.05	18	77.78	75.00	50.00	37.96	0.39
Finland	2.50	-9	60.19	57.41	50.93	41.67	0.17
France	16.87	31	87.96	74.07	66.67	41.20	0.23
Georgia	0.11	-18	100.00	96.30	86.11	57.41	0.23
Germany	2.78	12	76.85	64.35	59.72	63.43	0.16
Greece	0.49	29	84.26	68.52	54.63	46.30	0.16
Hungary	1.39	10	76.85	62.96	62.96	52.78	0.18
Iceland	1.67	27	53.70	46.30	36.11	33.33	0.14
Ireland	14.23	22	90.74	83.33	72.22	38.89	0.15
Italy	13.59	31	93.52	62.96	44.44	55.56	0.18
Kazakhstan	0.07	25	89.35	83.80	77.31	74.07	0.02
Kosovo	0.67						
Kyrgyz Republic	0.09	24	92.13	85.65	79.17	76.39	0.14
Latvia	0.61	14	65.74	57.41	46.30	46.30	0.12
Lithuania	0.89	-3	87.04	81.48	75.00	52.78	0.40
Luxembourg	7.07	8	79.63	70.37	56.48	37.96	0.22
Malta	0.97						
Moldova	1.81	-42	87.04	84.26	80.56	80.56	0.22
Montenegro	0.68						
Netherlands	8.96	32	79.63	68.52	62.96	39.81	0.19
North Macedonia	1.65						
Norway	1.53	5	79.63	64.81	54.63	34.26	0.25
Poland	0.75	25	83.33	53.70	50.93	39.81	0.47
Portugal	3.14	20	87.96	75.00	71.30	72.69	0.16
Romania	1.46	8	87.04	75.00	57.41	42.59	0.28
Russian Federation	1.14	-55	87.04	85.19	85.19	74.54	0.30
Serbia	0.90	2	100.00	96.30	51.85	24.07	0.34
Slovak Republic	0.31	-8	87.04	73.15	73.15	44.44	0.27
Slovenia	1.92	8	89.81	75.00	42.13	33.33	0.32
Spain	18.57	30	85.19	83.33	66.67	39.35	0.22
Sweden	9.79	57	46.30	38.89	38.89	37.04	0.04
Switzerland	5.40	18	73.15	69.44	65.74	37.04	0.19
Tajikistan	0.31	41	73.15	70.37	56.48	38.89	0.45
Turkey	1.45	-3	77.78	75.93	75.93	63.89	0.07
Turkmenistan							
Ukraine	0.41	3	88.89	72.69	64.35	37.96	0.16
United Kingdom	13.88	27	79.63	71.30	73.15	64.35	0.10
Uzbekistan	0.02	13	96.30	86.11	76.39	64.35	0.16
Average	**3.65**	**11.2**	**81.57**	**72.94**	**62.02**	**48.99**	**0.22**

Note: The first peak of the pandemic is defined as the day with the highest value of daily deaths (7-day moving average) during March-May 2020. Wait is defined as the number of days between the date of the first peak and the reopening day. Reopening day is defined as the day when the stringency index first decreases after reaching its maximum value. Speed is expressed in daily units of the stringency index.

Table A.2: Sequencing of lockdown measures

Country	Partial lockdown	Full lockdown	Exit to partial lockdown	Exit from partial or full lockdown
Albania		11-Mar	18-May	1-Jun
Armenia		24-Mar	4-May	
Austria	13-Mar	16-Mar		18-May
Azerbaijan	23-Mar	31-Mar	18-May	
Belarus				
Belgium		14-Mar	11-May	8-Jun
Bosnia and Herzegovina		17-Mar	11-May	21-May
Bulgaria		18-Mar		6-May
Croatia	14-Mar	20-Mar	11-May	25-May
Cyprus		16-Mar	16-Apr	
Czech Republic		13-Mar		27-Apr
Denmark		18-Mar	15-Apr	30-Jun
Estonia		27-Mar		15-May
Finland		16-Mar	28-Mar	29-May
France		17-Mar	11-May	2-Jun
Georgia	14-Mar	21-Mar	23-May	15-Jun
Germany		22-Mar		6-May
Greece	21-Mar	23-Mar	5-May	30-May
Hungary	16-Mar	27-Mar	4-May	19-Jun
Iceland		16-Mar		4-May
Ireland		27-Mar	18-May	26-Jun
Italy	8-Mar	10-Mar	4-May	2-Jun
Kazakhstan	19-Mar	30-Mar	18-May	16-Jun
Kosovo	24-Mar	31-Mar	4-May	1-Jun
Kyrgyz Republic	22-Mar	25-Mar	12-May	
Latvia		24-Mar		12-May
Lithuania		16-Mar	27-Apr	17-Jun
Luxembourg	15-Mar	16-Mar		11-May
Moldova		24-Mar	16-May	
Montenegro		30-Mar	4-May	1-Jun
Netherlands		15-Mar	11-May	30-Jun
North Macedonia		18-Mar	8-May	29-Jun
Norway	16-Mar	18-Mar		11-May
Poland		14-Mar	4-May	30-May
Portugal		19-Mar	4-May	25-Jun
Romania	21-Mar	25-Mar	15-May	1-Jun
Russian Federation	17-Mar	30-Mar	12-May	
Serbia	18-Mar	21-Mar	21-Apr	17-May
Slovak Republic	12-Mar	16-Mar	22-Apr	3-Jun
Slovenia		20-Mar		18-May
Spain		14-Mar	4-May	8-Jun
Sweden				
Switzerland		17-Mar	27-Apr	6-Jun
Tajikistan		25-Apr		12-May
Turkey	18-Mar			1-Jun
Turkmenistan		24-Mar		
Ukraine		17-Mar	11-May	19-Jun
United Kingdom		21-Mar	13-May	
Uzbekistan		24-Mar	8-May	

Note: this table indicates the dates associated with the relaxation of the first set of lockdown measures (work and mobility restrictions) established during April-May 2020. It does not include the dates associated with the re-imposition of such measures ("second lockdown" measures)

Table A.3: Sequencing of public event and school restrictions

Country	Public events			School system		
	Cancelation	Partial removal of restrictions	Full removal of restrictions	Closure	Partial reopening	Full reopening
Albania	9-Mar			9-Mar	18-May	
Armenia	16-Mar			13-Mar	20-May	
Austria	11-Mar	10-Jul		16-Mar	4-May	18-May
Azerbaijan	14-Mar			3-Mar	15-Sep	
Belarus				4-Apr		20-Apr
Belgium	14-Mar	30-Sep		14-Mar		5-Jun
Bosnia and	10-Mar			11-Mar	31-Aug	
Bulgaria	13-Mar	30-May		5-Mar	21-May	
Croatia	10-Mar	26-May	5-Jun	14-Mar	11-May	
Cyprus	10-Mar			13-Mar	21-May	
Czech Republic	11-Mar	25-May		11-Mar	20-Apr	
Denmark	16-Mar			13-Mar	15-Apr	1-Aug
Estonia	12-Mar	1-Jun	27-Jun	16-Mar		15-May
Finland	12-Mar	15-Jun		16-Mar		14-May
France	13-Mar	11-Jul		16-Mar	11-May	
Georgia	1-Mar	10-Jul		2-Mar	15-Sep	
Germany	10-Mar			18-Mar	4-May	7-Jul
Greece	29-Feb		15-Jun	10-Mar	11-May	1-Jun
Hungary	11-Mar	19-Jun		11-Mar	4-May	19-Jun
Iceland	16-Mar	7-Sep		16-Mar		4-May
Ireland	12-Mar		26-Jun	13-Mar	26-Jun	21-Sep
Italy	23-Feb			4-Mar		14-Sep
Kazakhstan	12-Mar			16-Mar	1-Jun	
Kosovo	12-Mar	1-Jun		12-Mar	1-Jun	
Kyrgyz Republic	12-Mar			16-Mar	1-Sep	
Latvia	13-Mar	10-Jun	17-Aug	13-Mar		21-Sep
Lithuania	12-Mar	1-Jun	17-Jun	13-Mar	18-May	
Luxembourg	13-Mar	25-May	16-Jul	16-Mar	11-May	25-May
Moldova	10-Mar	24-Sep		11-Mar	1-Sep	
Montenegro	13-Mar	1-Jun		13-Mar		
Netherlands	10-Mar		1-Jul	15-Mar	11-May	15-Jun
North Macedonia	13-Mar	29-Jun		10-Mar		
Norway	12-Mar		2-Jun	12-Mar	20-Apr	11-May
Poland	10-Mar	30-May	9-Jul	12-Mar	25-May	18-Sep
Portugal	19-Mar			16-Mar	18-May	25-Aug
Romania	8-Mar	17-Jun		11-Mar	15-Jun	
Russian Federation	10-Mar			28-Mar	23-Jun	
Serbia	15-Mar	6-Jun		16-Mar	17-May	1-Sep
Slovak Republic	10-Mar		3-Jun	16-Mar	1-Jun	25-Aug
Slovenia	19-Mar			16-Mar	18-May	3-Jun
Spain	10-Mar			14-Mar		
Sweden	12-Mar					
Switzerland	25-Feb	10-Oct		13-Mar	11-May	6-Jun
Tajikistan	18-Apr			25-Apr		17-Aug
Turkey	16-Mar	21-Jul		16-Mar	21-Sep	
Turkmenistan	24-Mar		20-Apr	24-Mar		7-Apr
Ukraine	12-Mar		22-Jun	12-Mar	25-May	
United Kingdom	21-Mar			21-Mar	1-Jun	
Uzbekistan	16-Mar			16-Mar	15-Jun	

Note: this table indicates the dates associated with the relaxation of the first set of public event restrictions and school closures established during April-May 2020. It does not include the dates associated with the re-imposition of such measures ("second lockdown" measures)