Tamara Popic, Queen Mary University of London

Alexandru Moise, European University Institute

Governments' Responses to the COVID-19 Pandemic in Eastern and Western Europe: The Role of Health, Political and Economic Factors

Manuscript (pre-proof final version) accepted for publication in *East European Politics* on 15 July 2022

Abstract

The article analyses the relationship between countries' healthcare, political and economic characteristics and their governments' COVID-19 pandemic measures in Eastern and Western Europe. We use survival analysis to test differences in timing of lockdowns, and mixed effects models to unpack the determinants of the severity of restrictions. Our results show that governments' responses during the first wave, when the pandemic was perceived primarily as a public health crisis, were correlated with health system capacities, with Eastern European countries featuring more vulnerable systems introducing strict measures early in epidemiological terms. As the pandemic unfolded into a broader crisis, political and economic considerations took primacy in shaping government responses. Socio-economically weaker countries in the East relaxed their restrictions sooner and were less likely to re-impose them compared to the West.

Keywords: COVID-19, Governments' Responses, Eastern Europe, Western Europe

Introduction

The COVID-19 pandemic has prompted a wide range of responses from governments across Europe. Aiming to contain the spread of the SARS-CoV-2 virus, governments introduced

'lockdown' measures such as school closure, travel restrictions and bans on commercial activities, and 'stay at home' orders, requiring drastic behavioural changes of their populations. However, the government responses to the pandemic have varied substantially across countries in the type and stringency of adopted measures as well as their timing, relative to the number of virus cases and deaths (Migone 2020; Boin and Lodge 2021; Plümper and Neumayer 2022). This variation has generated debate in both scholarly and policymaking circles on the reasons for the variety of the pandemic responses (Maor and Howlett 2020; Engler et al. 2021; Narlikar and Sottilotta 2021) and on the appropriate ways in which governments should respond to the future public health crisis (Boin at al. 2020).

This article analyses and compares the variety of government responses to COVID-19 pandemic in Eastern and Western Europe. Countries of Eastern Europe have been praised for being exceptionally eager to introduce strict lockdown measures and hence more successfully offset the deadly effects of the pandemic for their population compared to their Western neighbours (*The Guardian* 2020). The Eastern European particularity was also that the countries of the region introduced restrictive measures, i.e. were locking down, early relative to the number of deaths caused by the virus (Popic and Moise 2021). However, as the pandemic unfolded, most of the countries in the region changed their course, relaxing the lockdowns and shifting to less restrictive measures. The effect was, however, devastating as some of the Eastern European countries registered the world's highest COVID-19 mortality rates (*The Economist* 2021).

In order to explain the particularity of the Eastern European response to the pandemic, existing views pointed to several region-specific factors. One view suggested that this response could be attributed to the fact that the countries of the region are still young and, in some cases, fragile democracies. As this implies they lack proper democratic checks and balances, this was seen as rendering it easier for the governments to impose lockdowns (see Plümper and

Neumayer 2022). This view also argued that the public health crisis caused by COVID-19 bolstered the regions' existing authoritarian and populist tendencies, allowing some Eastern European leaders to instrumentalist the state of emergency to strengthen their grip on power (Guasti 2020). Other views suggested that the particularity of the Eastern European response to the pandemic is due to the region's economic standing, as its weaker and more vulnerable economies made leaders change their course in the second wave of the pandemic, shifting to less restrictive prevention measures in order to reduce economic costs (*The Economist* 2020; OECD 2021). Attention was also given to the specificities of the health systems in the Eastern European region. After the fall of communism, the health systems in the region were straining after decades of cuts and neglect, which rendered them unprepared and incapable of responding to pandemic pressures in a consistent manner (OECD 2020).

In this article, we contribute to this debate analysing the relationship between political, economic and healthcare system characteristics of the countries from Eastern and Western Europe and the government 'lockdown' measures introduced over the two pandemic waves. More specifically, we ask the following questions: To what extent are the East-West differences in governments' responses to the pandemic related to healthcare, political and economic differences of the countries in the two regions? Also, in how far have these differences played a role in shaping countries' responses during the first two pandemic waves?

We argue that the different perception of the crisis during the two waves of the pandemic, in particular the shift from the perception of the crisis as primarily a public health crisis to a broader socio-economic crisis, impacted policy decisions made by the governments in the two regions. In Eastern Europe, these decisions had a stronger tendency to involve policy trade-offs which implied weighting the health and health system effects of the lockdown measures against the socio-economic effects of these measures. As healthcare systems in the region have significantly lower capacities than systems in the West (Popic and Schneider 2018)

and were therefore expected to be more vulnerable in the context of public health emergency, governments opted for, in epidemiological terms, earlier lockdowns in the initial phase of the pandemic. As the pandemic dragged on, with the social, economic and political costs for many of the countries from the region being particularly high, their governments prioritized keeping the economy open and individuals employed over protecting the vulnerable health system. This implied loosening the restrictive measures, which in turn had negative effects on health outcomes. Conversely, the relatively wealthier countries of the West and with comparably less vulnerable health systems, avoided making the difficult pandemics trade-offs. They delayed their initial response opting for restrictive measures when COVID-19 infections and deaths were high but were better able to maintain the restrictions in the long term, also due to their strong capacity to compensate companies and individuals for the economic and social costs of the pandemic.

The article contributes to the following literatures. First, it adds to the literature on Eastern European experiences of the pandemic and analysis of social, political and economic differences that account for different ways of governments' reaction to the crisis in the two regions of Europe (see Guasti 2020; Buštíková and Baboš 2021; Löblová et al. 2021). More generally, the article contributes to the literature on factors explaining country variations in the context of the pandemic. In contrast to the majority of existing studies that rely on large-N analysis focusing on cross-country difference in health outcomes (e.g. Kavanagh and Singh 2020; Cepaluni et al. 2020), it analyses government response to the pandemic, a topic which has been given less comparative attention (see Greer et al. 2020). From a theoretical point of view, the article adds to the understanding of the factors that drive governments' choices in the context of crisis by considering not only the economic and political factors (see Cheibub et al. 2020; Toshkov et al. 2021; Engler et al. 2021), but also healthcare factors (see Vadlamannati et al. 2021). In addition, by analysing how in the course of the pandemic governments might

be weighting the health effects against the socio-economic effects of the restrictive measures, the article contributes to a deeper understanding of the policy trade-offs in the context of crisis and emergency threats (see Boin et al. 2009; Christensen et al. 2016, 2020).

The rest of this article proceeds as follows. The first section provides an overview of the first two pandemic waves in Eastern and Western region of Europe. The second section elaborates the theoretical framework on factors that explain countries' responses and management of the crisis, which is applied on the context of the COVID-19 pandemic and used for the formulation of the main hypotheses. The third section presents our data, methods and results. The fourth and the final section concludes with a summary of the main findings, their discussion and suggestions for future research.

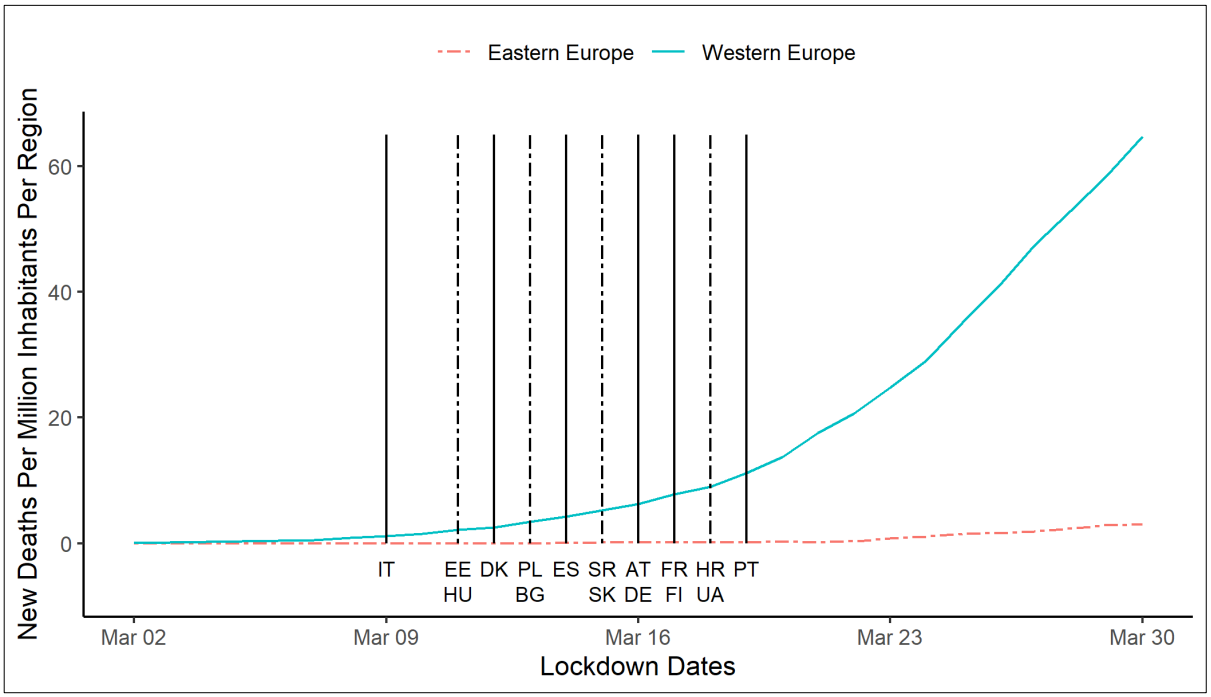
The First Two COVID-19 Waves: Eastern and Western Europe Compared

The comparison of Eastern and Western Europe over the first two pandemic waves reveals striking regional difference in their pandemic experiences (Popic and Moise 2020; Reuters 2021; Löblová et al. 2021; Greer et al. 2021). During the first pandemic wave, Western Europe surpassed Eastern Europe in terms of COVID-19 related deaths, while during the second wave both regions were more similarly affected, with the East even leading the new wave of infections starting in the autumn of 2020.

These different trends can be linked to East-West differences in terms of timing of the first measures governments took to respond to the pandemic. In the first wave, countries in the two regions introduced lockdowns around the same time. However, in epidemiological terms (see Plümper and Neumayer 2022), Eastern European countries introduced restrictive measures before experiencing actual surges of deaths, or even before experiencing any deaths at all (Figure 1). Slovakia is an extreme example of this approach, as it introduced its first restrictive measures before recording any COVID-19 deaths. By comparison, Spain imposed its lockdown

when it had already registered 195 deaths. Similarly, Estonia imposed the state of emergency the day after the country's first confirmed cases, long before it registered any deaths. France, by contrast, imposed its measures once it had 150 deaths and almost 8000 confirmed cases.

Figure 1. Lockdowns and COVID-19 deaths in Eastern and Western Europe during the first pandemic wave.



Note: The figure shows the dates of the first lockdowns in the first 8 countries of each region. Lockdown dates refer to the date of declaration of states of emergency or of major restrictions on movement. Data on deaths are from Johns Hopkins (CSSE), data for lockdown dates are from the COVID-19 Health System Response Monitor (available at https://covid19healthsystem.org/mainpage.aspx). Countries: Italy (IT), Estonia (EE), Hungary (HU), Denmark (DK), Poland (PL), Bulgaria (BG), Spain (ES), Serbia (SR), Slovakia (SK), Austria (AT), Germany (DE), France (FR), Finland (FI), Croatia (HR), Ukraine (UA), Portugal (PT).

In the second wave, however, after the Eastern European governments relaxed restrictions in summer, they were much less eager to re-impose them. They kept the restrictions low or even eliminated them while the death rates in the region surpassed those in the West (see Figure C1 in the Appendix). By doing this, they 'squandered their spring gains' (Popic and Moise 2020). While during the first wave they had a latecomer advantage and experienced

slower increases in infections and deaths, in the second wave they avoided responding quickly enough and witnessed dramatic pandemic effects (see also Plümper and Neumayer 2022). A good example of how countries' pandemic standing changed from the first to the second wave due to the government's decision to loosen the measures is the Czech Republic. During the first wave, the country was praised as a huge success witnessing relatively few infections and low deaths due to its swift response, while in the second wave as the Czech authorities re-introduced stricter measure only when pandemic numbers were soaring, the country became the global leader in new COVID-19 infections and deaths (Löblová 2020).

While the East-West difference in reaction to the pandemic during the first and second wave reveals clear difference in regional patterns, it is worth noting that there are still important differences among countries within the Eastern European region. These countries differed, for example, in terms of stringency of the restrictive measures during the second wave (Popic and Moise 2020) or, more generally, in terms of capacities to compensate the most vulnerable for the economic and social costs of the pandemic (Löblová et al. 2020; Aidukaite et al. 2021). While these variations might underline within-regional differences such as the level of economic development, they still fail to explain why, for example, both relatively richer Czech Republic and poorer Romania during the second pandemic wave waited to re-introduce restrictive measures (Popic and Moise 2020). This suggests that while there is within-regional variation in pandemic responses, the regional pattern remains strong and is in need of explanation.

Crisis Response and Management: Theoretical Background and Hypotheses

Within the literature on crisis response and management, crisis is defined as "a situation in which there is a perceived threat against the core values of life-sustaining functions of a social system that requires urgent remedial action in uncertain circumstances" (Rosenthal et al. 1989: 10). According to this literature, crisis response and management occur at two levels,

operational and strategic (Boin and ’t Hart 2010). The operational level refers to decisions and behaviors which focus on offsetting the crisis effects on-the-ground. In contrast, the strategic level includes decisions made by political and administrative leaders that carry political responsibility for the crisis response and are therefore faced with challenges brought by the crisis. These decisions are associated with decision making under pressure, accountability, legitimacy and, subsequently, policy success and failure (see Boin et al. 2016).

As crisis management is considered a core responsibility of the government, a wide array of public policy literature has focused on factors determining how governments manage crises (Boin 2009; Boin and ’t Hart 2010; Boin et al. 2009, 2016; Christensen et al. 2016, 2018; McConnell and Drennan 2006). One factor that shapes how governments respond to crises is the nature of the crisis (Christensen et al. 2016; Christensen and Lægreid 2021). As underlined in the above-mentioned definition of crisis by Rosenthal and his colleagues, perception of the crisis is one of its key features. Depending on this perception and associated interpretation of the crisis, policymakers develop views about the core characteristic of the crisis - the degree of uncertainty, uniqueness, as well as the degree of transboundary features. From the management point of view, the most demanding crises are those perceived as involving a great deal of uncertainty, as unique, ambiguous, complex, and at the same time as transcending different levels, sectors, and ministerial areas (Christensen et al. 2016). Importantly, these perceptions of the crisis also influence crisis management that involves difficult dilemmas and trade-offs, which imply that policymakers have to choose among different alternatives and make judgements based on competing values (Christensen et al. 2016; see also Lindblom 1965).

Another contextual factor that shapes government responses to crises include structural and institutional capacities countries have at their disposal at the time of the crisis outbreak. These capacities relate to the existing resources, organization and infrastructure needed for the operational management of the crisis, that is, the handling of the crisis on-the-ground. For

effective emergency response these imply, among other, solicitation of different types and levels of operational resources necessary to meet the demands of the situation and deploy them in a fast and orderly fashion (Boin and ’t Hart 2010). In the context of public health emergencies, crisis management at the operational level implies that the structure and functions of national healthcare systems are important for effective healthcare delivery when facing a sudden and substantial surge in demand. These structures and functions include, among other, availability of healthcare staff, hospitals and hospital beds infrastructure, equipment, testing, laboratories and medications (Steier and Moxam 2020).

Besides structural capacities needed for operational crisis management, how countries respond to the crisis is also shaped by strategic concerns and depends on their governance capacity, as well as political and institutional legitimacy (see Boin et al. 2008; Christensen et al. 2016; Christensen and Lægreid 2021). Governance capacity relates to the countries' preparedness or analytical capacity, coordination, regulation and implementation of delivery capacity to provide effective crisis management (Lodge and Wegrich 2015; Christensen and Lægreid 2021). Political and institutional legitimacy are equally important factors of crisis management because crises carry significant political weight, putting pressure on the government to deliver, that is, effectively respond to an emergency. The legitimacy issues become particularly prominent in the context of a crisis as they concern the relationship between government authorities and citizens. Legitimacy is shaped by citizen perception of whether authorities' crisis responses are desirable and appropriate. Legitimacy affects how citizens behave toward government authorities in crisis, e.g. whether they follow their advice on how to behave in the crisis context, but also how they understand them and relate to them (see Christensen et al. 2016). The issue of legitimacy in the crisis context is further complicated by the tendency of the politicians to use crises as an opportunity to be exploited for their own electoral aims. In the context in which they are confronted with major social and economic

emergencies, politicians and their public policy choices are more closely inspected by the public eyes. This explains why both politicians in government and their critics in opposition seek to avoid blame or claim credit for their actions, while trying to consolidate and strengthen their political capital (Boin et al. 2009).

In sum, the literature on crisis management suggests that while the nature of the crisis is an important factor shaping responses to it, these responses are also shaped by contextual factors. Structural capacity, which refers to concrete infrastructure needed for the crisis response at the operational level, but also governance capacity and political legitimacy, which concerns the state's capacity to govern and manage relationships between government authorities and citizens, which can also be subject to political opportunism, shaping how countries respond to crisis situations. In what follows, we apply this theoretical framework to the context of crisis caused by the COVID-19 pandemic and develop our hypotheses.

The COVID-19 Crisis

The COVID-19 crisis was marked by a high degree of uncertainty that came from both the lack of knowledge about the causes of the pandemic and the changing environment generated by the rapid spread of the SARS-CoV-2 virus. This uncertainty was amplified by the fact that governments have been confronted with a variety of experts' views on the potential developments of the virus outbreak based on different prediction models (Berger et al. 2020). The speed with which the virus spread over and across national borders also added to this uncertainty and underlined the interdependencies and deeply transboundary character of the crisis (Boin et al. 2021).

Another specificity of the crisis caused by the COVID-19 pandemic was the changing perception of its nature. Initially, the risks posed by the SARS-CoV-2 virus were downplayed

by government's leaders in some countries (Boin and Lodge 2021).[1] This perception was however quick to change with surges in infections and deaths, which also contributed to the growing awareness of the severity of the crisis, underlining its perception of a dramatic public health crisis with a transboundary character. In addition, both citizens and governments soon realised that rather than being mainly a public health crisis, the pandemic generated a broader socio-economic crisis of an unprecedented scale (Greer et al. 2021). As governments introduced restrictive measures, these also included closures of most business and entire economic sectors triggering an economic crisis whose impacts and long-term effects were seen as being much wider and deeper than those experienced during the biggest economic crises of our times, the recent 2008-2009 Global Financial Crisis, or even the Great Depression (Roubini 2020).

Another related dimension of the crisis was the social one. The economic lockdown had immediate and dramatic consequences on the population, limiting individuals' ability to work, earn, and support their families. The crisis was particularly strong from the social point of view as it exposed existing vulnerabilities, strongly affecting the young, women, the least skilled and the poor (Shibata 2020; Kristal and Yaish 2020). In response, new welfare policies were designed and introduced in order to protect the jobs and livelihoods of these most vulnerable groups (Weible et al. 2020).

Governments' responses to the COVID-19 pandemic were the result of policymaking in the context of deep uncertainty about the severity and duration of the pandemic. They were responses to an unprecedented crisis that was initially perceived mainly as a public health crisis, but as the pandemic progressed, the interpretation of the crisis changed, fostering views

[1] The Prime Minister of the United Kingdom Boris Johnson, for example, initially downplayed the risks of the pandemics considering the lockdown policies to be out of the question (Boin and Lodge 2021). In Italy, the government also downplayed the risk of the virus (see Capano 2020), but this can be attributed to the fact that Italy was the first European country to register COVID-19 infections.

of a 'creeping mega crisis', a crisis generating huge strains not only on health system but also having considerable social and economic consequences (Boin et al. 2020). The changing perception of the crisis implied that government responses were initially guided by the structural capacities for crisis response at the operational level (see Capano 2020), but as the crisis perception changed into the one of a crisis on a much larger scale, these responses became increasingly guided by more strategic approaches and shaped by the broader socio-economic and political legitimacy concerns.

Taking a more strategic approach also meant that the governments had to make hard choices which implied trade-offs, choosing among different alternatives and making judgements based on competing values (see Narlikar and Sottilotta 2021; Boin and Lodge 2021; Boin et al. 2020, 2021). When the infections and deaths started rising, they had to make difficult choices between the decision to re-introduce lockdowns protecting the health system and saving lives of the most vulnerable and the decision to keep the businesses going in order to avoid economic and social breakdown (see Boin at al. 2021). Yet, the way in which government made their choices and responded to crisis depended on the pre-existing differences in countries' healthcare system capacities (see Winkelmann et al. 2021), socio-economic and political setups (see Maor and Howlett 2020; Cheibub et al. 2020; Eichhorst et al. 2020; Engler et al 2021; Toshkov et al. 2021).

The capacities of the health system were relevant for government response as pandemics generated a rocketing demand for health services. One way of accounting for healthcare system capacities is by considering the difference between the National Health Service (NHS) and Social Health Insurance (SHI) system types. While NHS system are financed predominantly through general taxation, the SHI system types are financed by social insurance contributions (Blank and Burau 2014; Terlizzi and Esposito 2021). This difference in the system type could be relevant for the pandemic responses as the NHS, compared to the

SHI systems, have a stronger focus on universal health provision and also as the financing of the system and actual provision of the services is under public control (Wendt et al. 2010; Terlizi 2019), we could expect the NHS systems to be better prepared in responding to the public health emergencies.

In addition, other two dimensions of healthcare service provision - monetary and real input - allow for cross-country comparison of system capacities (see Wendt et al. 2010). Monetary input reflects the financing of health services. A particularly relevant part of this input is the public healthcare financing, as it signals the degree in which health systems are prepared to protect populations from health risks based on the principle of solidarity, i.e. without making them reliant of private resources. Real input, in contrast, accounts for healthcare infrastructure and workforce, e.g. hospital beds, doctors and nurses. Systems with less infrastructure and staff are expected to have weaker capacities to respond to healthcare needs and thus be more affected by the increasing demand, which in turn could make them more restrictive and faster in their pandemic response (see Winkelmann et al. 2021). Therefore, a more general expectation is that the differences in the capacities of the health system would play a major role in shaping country responses.

Hypothesis 1: In countries with *lower health systems capacities* governments would introduce *more stringent measures* in response to the crisis, in particular during the first wave of the pandemic.

With the changing perception of the pandemic from a public health emergency to the wider socio-economic crisis, it is also reasonable to expect that government crisis responses would be linked to differences in socio-economic capacities. As the pandemic led to unprecedented economic support measures from governments across Europe (Bergsen 2020), poorer countries that were in more a vulnerable position before the pandemic, e.g. countries with lower GDP, would be less able to withstand the economic pressures. With the continuation

of the pandemic, these economically fragile countries would not be able to keep the restrictive measures in place for an extended period of time as this would risk even greater economic damage. In this context, we might also expect differences between the EU and the non-EU countries. By the end of the first wave, in the summer of 2020, the EU had established the recovery fund aimed on easing the medium and long term financial pressures on the member states (Ferrera et al. 2020). However, decisions on restrictions remained firmly in the hands of national governments, which had to consider multiple factors when imposing lockdowns. In fact, when governments used solidaristic policy responses to protect the most vulnerable parts of the population, their choices often depended on previous social policy trajectories (Aidukaite et al. 2020). Therefore, countries with lower capacities for social protection would also be more prone to loosen the restrictive measures in spite of the health threats, as they would have less resources to compensate citizens for losses and vulnerabilities generated by the crisis shocks.

Hypothesis 2: In countries with *lower economic* and *social protection capacities*, governments would introduce *less stringent measures* in response to the crisis, in particular during the second wave of the pandemic.

With the changing perception of the crisis, governance and policy capacities and more specifically, political legitimacy of the government would also shape whether and to what extent the government keeps up with the restrictive measures. Governance and policy capacity refers to the ability to galvanise the administration and society into action, and execute policy decisions effectively, which also includes having a well-paid and well-trained civil service. This implies having weaker governance capacity would make it difficult for governments to keep up with the effective response to the pandemic, and would therefore imply loosening the restrictions. In contrast, high governance capacity implies that government have broader range of policy tools at their disposal and are able to use these tools more swiftly, also because of the higher legitimacy the policy actions of such governments have in the eyes of the public

(Toshkov et al. 2020; see also Capano et al. 2020). Legitimacy of government is crucial in the context of a wider crisis, as crises strike at the core of both governance and democracy and challenge not only their capacities but also their legitimacy and representation (Christensen et al. 2016). As the pandemic continues and lockdown measures become increasingly unpopular among the large parts of the population that are bearing the economic costs, incumbent governments facing elections are expected to delay restrictions in the pre-election period. Similarly, governments with populist tendencies which are associated with fragile legitimacy (Fuchs and Klingeman 2019) and also tend to use the pandemic more strategically underestimating its effects (Löblová et al. 2021; Buštíková and Baboš 2021), would also be more prone to loosen the restrictions in spite of the pandemic surge.

Hypothesis 3: In countries with *lower governance capacity and political legitimacy*, governments would introduce *less stringent measures*, in particular during the second wave of the pandemic.

Data and Methods

Data

Data for our dependent variable, government restrictive measures in the pandemic context, were taken from the Oxford COVID-19 government response tracker (OxCGRT 2020). The "Stringency Index" developed by the OxCGRT ranges from 0 to 100 and takes into account the nature and severity of restrictive policies, including stay-at-home orders, business closure, restrictions on public gatherings, public events, and public transport, and domestic and international travel restrictions. Table 1 shows summary statistics for the average level of stringency measures for the two regions.

Table 1. Stringency of COVID-19 measures in Eastern and Western Europe.

Region	*Mean Stringency 1st Wave*	*Mean Stringency 2nd Wave*
EE[2]	61.34	52.23
WE[3]	58.13	59.76

Source: Authors' calculation based on data from Oxford COVID-19 government response tracker (OxCGRT 2020).

With respect of our independent variables, we operationalise health system capacity by looking at health system characteristics that reflect monetary and real input of the health system, with data from the European Health for All database of the World Health Organization (WHO, 2021). To take account of monetary input we look at total per capita expenditure on healthcare, and public expenditure as share of total government expenditure. These measures capture the overall financial resources of health systems, as well as their relative importance in state budgets. To take account of real input, that is, healthcare infrastructure, we include measures for the number of hospital beds per 100 000 inhabitants and the number of acute beds. In addition, we also consider the difference between the NHS/SHI system type.[4] Table 2 shows summary statistics for health system capacity in the two regions.

Table 2. Health system capacities in Eastern and Western Europe.

Region	*Total per capita Health Expenditure*	*Public Health Expenditure as share of Total (%)*	*Beds per 100k*	*Acute Beds per 100k*
EE[5]	1340.17	12.42	611.35	497.07

[2] Eastern Europe: Bosnia and Herzegovina, Bulgaria, Croatia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Serbia, Slovakia, Slovenia, and Ukraine.
[3] Western Europe: Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.
[4] The following countries were categorized as NHS: Spain, Italy, Portugal, Greece, Denmark, Sweden, Finland, United Kingdom, Norway, Ireland, Malta, following Immergut et al. (2021).
[5] Eastern Europe: Bosnia and Herzegovina, Bulgaria, Croatia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Serbia, Slovakia, Slovenia, and Ukraine.

WE[6]	3753.2	14.78	462.69	370.92

Source: Authors' calculation based on data from the European Health for All database of the World Health Organization (WHO).

For socio-economic capacity, we consider several types of indicators. In order to capture the ability of states to suspend economic activity and compensate businesses and individuals, we use Eurostat's indicators for GDP per capita, and the quarterly change in GDP growth and unemployment.[7] In order to further capture the ability of governments to compensate actors for economic losses, we also look at welfare provisions, by using social protection expenditure per capita (Eurostat 2021). The cost of certain policies, such as business closures, rise when a larger part of the economy is comprised of production of physical goods. Economies that are more reliant on services should find it easier to switch employees to remote work. We therefore also look at the share of GDP accounted for by manufacturing. Lastly, in order to account for the differences between country's socio-economic capacities to respond to the pandemic, we considered difference between EU and non-EU countries.[8]

To operationalise governance capacity and political legitimacy, we use several indicators. Relying on the Quality of Governance dataset (Teorell et al. 2016), we look at quality of government and government effectiveness. In order to measure governance capacity during the pandemic, we refer to a country's COVID testing capacity using an indicator of tests per verified COVID case to adjust for country size and necessity of testing based on the severity

[6] Western Europe: Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

[7] We use a 3-month lag (1 quarter) for GDP and unemployment changes compared to the same period in the previous year. This allows us to avoid inverse causality, since lockdown measures have an impact on GDP. It is also more reasonable to assume that policymakers look at the most recent data available to them (latest quarter) when considering policy trade-offs. Quarterly GDP change and unemployment are not present in the static tables since they are quarterly changes.

[8] EU countries: Romania, Hungary, Czech Republic, Croatia, Slovenia, Bulgaria, Slovakia, Poland, Estonia, Latvia, Lithuania, Spain, Italy, Portugal, France, Germany, Belgium, Netherlands, Austria, Greece, Denmark, Sweden, Finland, Ireland, Malta, and Cyprus.

of the outbreak at any given time. This indicator, along with other epidemiological data, such as reported COVID-19 cases and deaths, are taken from the Johns Hopkins Centre for Systems Science and Engineering (CSSE 2020). For political legitimacy, we look at whether the country was holding elections in the months that followed any given time point. Specifically, we coded the 6-month period prior to elections in any given country as a pre-election period. We considered national parliamentary elections or presidential elections, the latter only for countries in which presidents have more than a ceremonial role.[9] As hypothesised, we expect that upcoming elections for positions relevant to policymaking, for which there is a popular vote, would lead politicians to loosen or delay restrictions. Lastly, we also look at populism in order to assess whether a higher share of votes for populist parties affects government responses, using the populism indicator from the VDEM Institute dataset (Coppedge et al. 2015).

Table 3. Economic and political capacities in Eastern and Western Europe.

Region	*Quality of Gov.*	*Gov. Effec-tiveness*	*GDP per capita*	*Social Protec-tion*	*Manufac-turing as %GDP*	*Election*	*Populist Vote*
EE	0.58	0.54	22909	2079	15.1	0.46	0.33
WE	0.84	1.38	43047	9396	12.9	0.11	0.06

Table 3 shows summary statistics for the economic and political characteristics across the two regions. As can be seen, more Eastern than Western European countries happened to hold elections during the period. On average, countries of the Eastern region also have much

[9] Among countries with presidential or semi-presidential regimes, only Portugal and Poland experienced presidential elections. The presidential elections in Greece were not consider since the Greek president is elected by parliament and has only a ceremonial role. Likewise, the Icelandic presidential elections were also not considered because of the limited, ceremonial, role of the president.

lower GDP per capita, social expenditure per capita, higher share of manufacturing as part of the economy, and lower governance capacity as measured by quality of governance and government effectiveness.

Methods

In the analysis, we employ two types of models to test the impact of the healthcare, economic and political factors on the timing and severity of pandemic restrictions. For timing, we employ survival analysis for two periods, corresponding to the first and second waves of the pandemic.[10] For the first wave, we test the timing of introduction of restrictions following the first 10 official reported COVID-19 cases. This puts countries on the same relative epidemiological timeline, giving us an indication of how quickly they reacted once it was clear that the virus was circulating domestically. For the second wave, we take advantage of the fact that the virus affected almost all European countries in a similar way in the summer and fall of 2020. As case numbers fell drastically over the summer, countries eased their restrictions. As cases started ticking up again in September and October countries reintroduced restrictions with different timing. We therefore count the number of days that pass, in the period beginning with August 2020, from a country reporting over 20 cases per million (the average case numbers in October, which indicated the start of a new severe wave) until reintroduction of severe lockdowns. For both the first and second wave we used the same definition for a lockdown, using the OxCGRT data, and taking into account the overall restriction level as well as the specific level of stay-at-home orders.[11]

[10] February to August 2020 for the first wave, and August 2020 to February 2021 for the second wave. This creates two equal periods in terms of time. We stop the analysis at the beginning of February 2020 since that is the time that countries started their mass vaccination campaigns, which likely changed the calculus for policymakers.

[11] We considered that a lockdown will be felt as severe by the population both in cases where there are many different restrictions (an above-average overall stringency score) and in cases where freedom of movement is curtailed (a high score on the stay-at-home orders sub indicator). A severe lockdown was therefore defined as either exceeding 60 on the stringency index or scoring at least 2 out 3 on the indicator for stay-at-home orders

In order to test the severity of lockdown measures, we use a mixed effects model covering time-varying and time-invariant factors that explain the severity of lockdowns. Our dependent variable here is the raw stringency score from OxCGRT. On the first level, we control for number of cases and number of reported deaths, as well as a 1 and 2-week lag for each. We also control for the amount of testing that a country has done, since the number of reported cases is sensitive to testing. The amount of testing also acts as a proxy for governance capacity, as it captures the ability of states to keep track of their outbreaks. Lastly, we also include 1 and 2-week lags for the dependent variable. On the country level, we control in each model for the level of GDP per capita and the share of the population over 65. The remaining variables are introduced one by one since we do not expect them to interfere with one another. The limited sample size on the country level is another reason for introducing variables separately.

In order to test the relevance of the different factors across the two time periods, we create a dichotomous variable for the second wave, for the same period as the survival analysis. In the next step, we interact each factor with our dummy in order to obtain coefficients for each wave. We also allow our wave variable to vary within a country, since we assume that effects vary over time within the same country.

Results

Over the entire period of the pandemic that we cover (from February 2020 until February 2021), countries of Eastern Europe had a considerably lower level of restrictions than the rest

from OxCGRT. We considered the former to be a reasonable cut-off point for the stringency index, given its range (0 to 100), it's mean in February 2020 (10.7) compared to March 2020 (75.6) and August 2020 (45) compared with November 2020 (65). Other cut-off points did not change the dates meaningfully, since a score of 60 is quickly preceded or followed by stay-at-home orders. The latter indicator takes value 2 or higher when individuals are not allowed to leave their homes, apart from exceptional circumstances.

of the sample. This is mainly due to the second wave of the pandemic, where Eastern Europe had a much lower average level of restrictions, its level in the first actually being higher than in the rest of the sample (see Table 1 above). This overall difference remains even when we adjust for the number of cases, deaths, and testing. In that case, the Eastern region has a 0.5 standard deviation lower stringency, or about 9 points on the index (see Table A5 in appendix). This is largely driven by the second wave of the pandemic, when Eastern European governments tended to delay restrictions and loosen them quickly.

Our survival analysis shows the stark difference in the timing of lockdowns in the two waves for the two regions. Figure 2 plots the Kaplan-Meier failures estimates (the inverse of the survival function), where failure represents a country imposing lockdown after the official case count reaches 10. Since all countries experienced lockdowns early in the first wave, these data are not censured. As we can see, countries in Eastern European region had a tendency to impose lockdowns much earlier in their pandemic timeline than the rest of the sample, with the difference being significant at the 0.05 level.

Figure 2. Survival analysis for probability of lockdown in Eastern and Western Europe during the first wave.

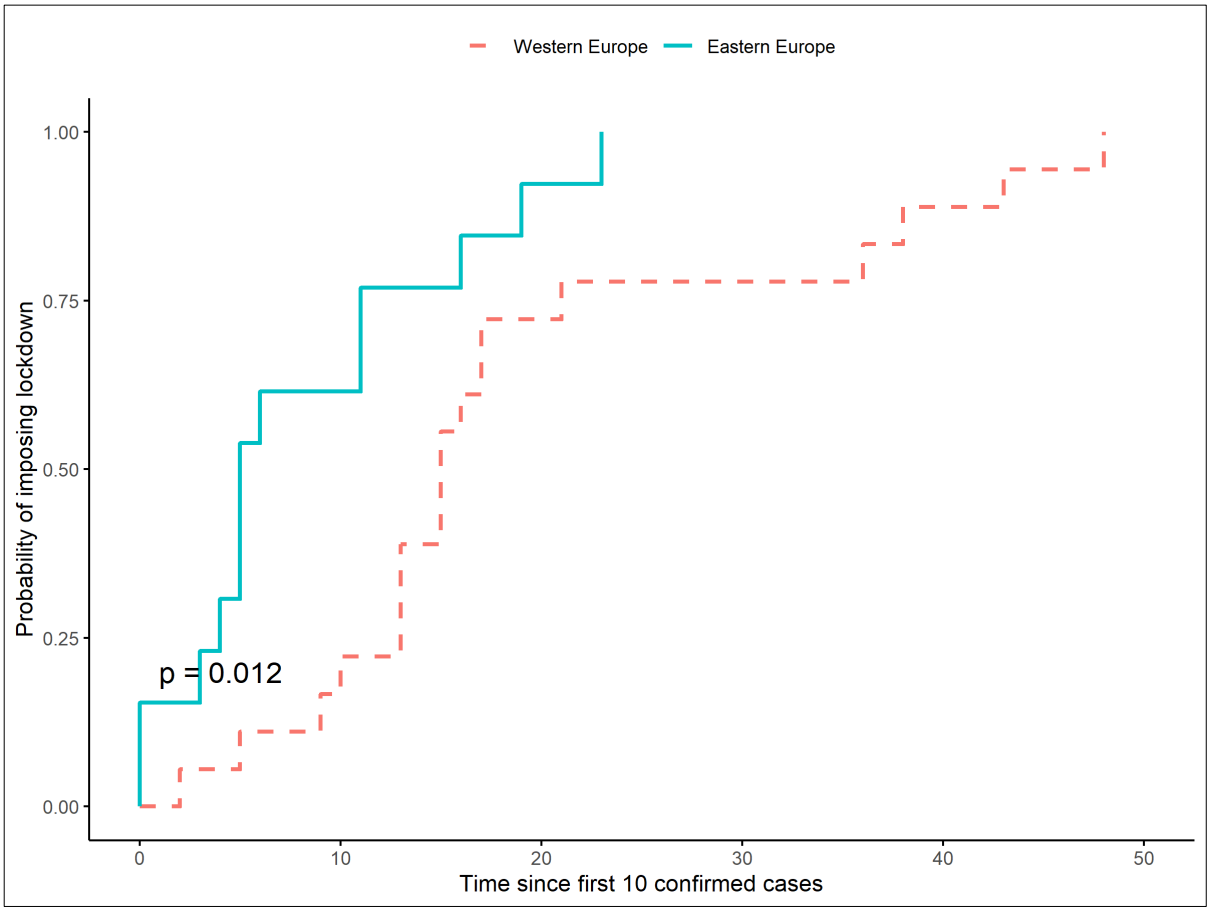


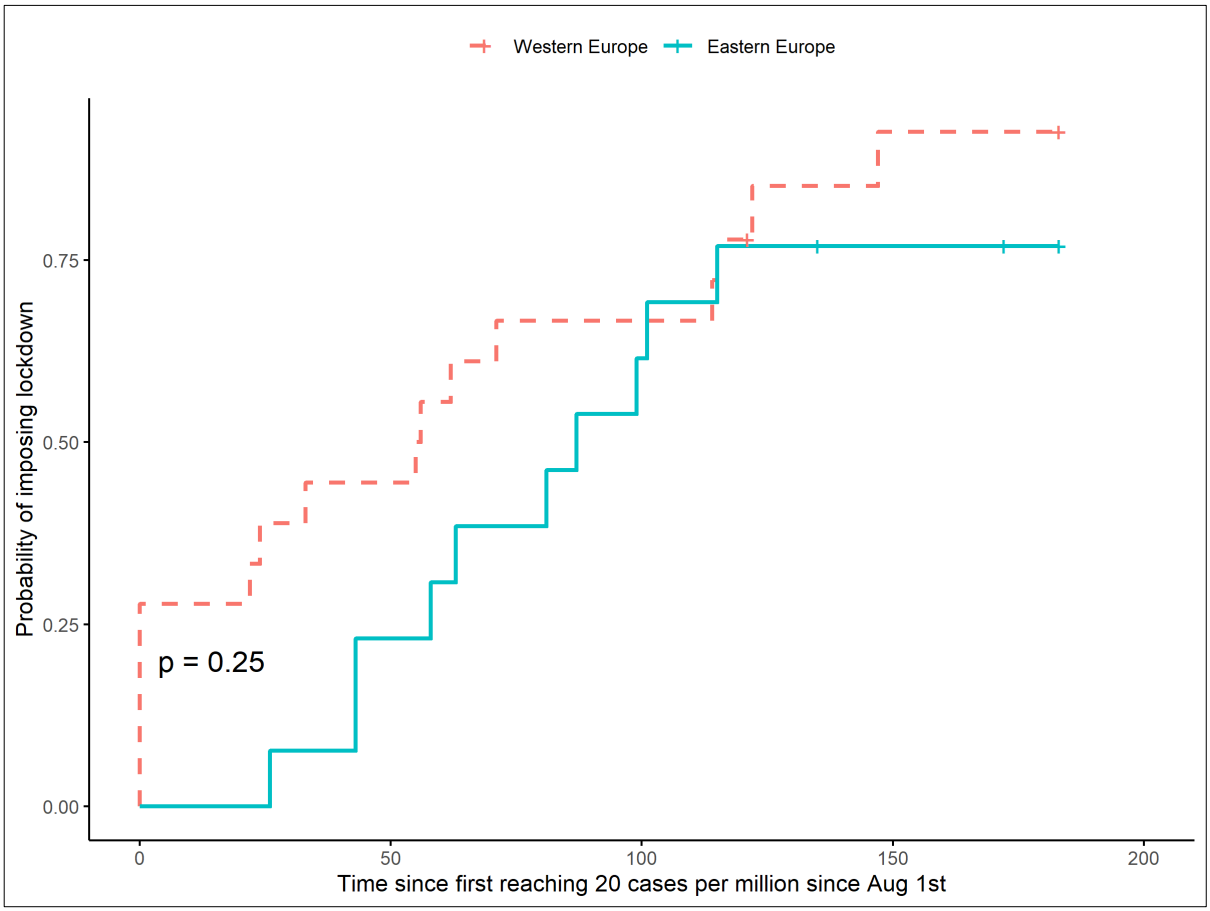
Figure 3 shows the same estimates for the second wave of the pandemic. Since not all countries experienced severe lockdowns in this period, the data are censured.[12] What can be seen is a reversal in timing, with Eastern European countries taking far longer to impose lockdowns following their increase in cases in the fall.

In order to account for the fact that our results might be driven by non-EU countries, we also conducted this analysis on a restricted sample of only EU countries. The p-value for the first wave increases to slightly above the 0.1 level, which might be due to the smaller sample size. Overall our substantive interpretation remains similar, as the patterns between the two

[12] A country was censured if it had not imposed a lockdown by 01.02.2021. Censured cases are marked by crosses in Figure 2.

regions in the two waves remain clearly visible. Figures B1 and B2 in the Appendix show the results of the restricted sample.

Figure 3. Survival analysis for probability of lockdown in Eastern and Western Europe, second wave.



We now look at the results of the mixed effects models looking at the severity of restrictions over time. Tables 4, 5 and 6 show the results. Note that all variables were standardised. Coefficients can therefore be interpreted as standard deviations. All models contain time variant, and time invariant controls described above (shown in table A1 appendix). Each additional variable is interacted with our dichotomous indicator for wave. Therefore, the main coefficient on each variable can be interpreted as its effect for the first wave of the pandemic. The interaction coefficient is then interpreted as the differential effect of the second wave compared to the first.

Table 4 shows the results for health system capacity, providing support for our first hypothesis. They suggest that countries with lower health system capacity, in terms of both monetary and real input, had higher levels of restrictions. Higher public health expenditure as a share of total government expenditure, a measure of how important healthcare is in the state budget, is negatively related to stringency. A -0.021 standardised coefficient translates into an approximately 2-point difference on the stringency index, when moving from the lowest to the highest share of public expenditure. Effect sizes are similar for hospital beds. Effects are similar for total health expenditure, but do not reach statistical significance. Likewise, the interaction effects generally show that these effect sizes are smaller for the second wave, as expected, although this difference does not reach statistical significance. In addition, we ran analysis to account for whether the country having an NHS or SHI health system has an effect on the government response and the results show that the NHS indicator is statistically positively related to stringency (Tables A2, A3, and A4 in the Appendix). However, we hesitate to interpret this coefficient since there are many other factors that correlate with NHS systems. For example, countries with NHS systems are regionally clustered in the North and South of Europe, while most of Central Europe and Eastern European countries belong to the SHI system type.

Table 4. Mixed effects models for health system capacity.

Health System Capacity

	Dependent Variable: Lockdown Stringency			
	Public Health Expenditure	Total Health Expenditure	Hospital Beds	Acute Beds
Factor Effect Wave 1	**-0.021***	0.017	**-0.022***	**-0.028****
	(0.012)	(0.027)	(0.012)	(0.012)

Differential Effect Wave 2	0.001	0.007	0.010	0.007
(Factor * Wave 2)	(0.007)	(0.007)	(0.007)	(0.006)
Observations	8,312	8,312	8,266	7,711
Log Likelihood	-804.530	-804.396	-790.907	-852.511
Akaike Inf. Crit.	1,647.061	1,646.792	1,619.813	1,743.022
Bayesian Inf. Crit.	1,780.545	1,780.275	1,753.191	1,875.080
Note:				*p<0.1**p<0.05***p<0.01

Next, we look at the impact of the economic and social capacity on restrictive policies to test for our second hypothesis (Table 5). We expect to see countries that were in a more vulnerable economic position prior to the pandemic, to be more reluctant to impose lockdowns. Indeed, when we look at GDP per capita, we see that richer countries were more willing to impose stricter measures, with the effect being substantively similar for the second wave. We also look at economic capacity during the pandemic by using lags for quarterly GDP and unemployment figures (Table 5, columns 3 and 4). We see a substantive effect for both, with the effect being considerably larger for the second wave of the pandemic, as expected. On average, moving form the lowest to the highest GDP change in the second wave, was associated with a 7.6-point difference in the stringency score. Quarterly GDP and employment are important indicators for the economic pain that countries and individuals were experiencing during the pandemic. As expected, this pain had a larger impact during the second wave of the pandemic, as in this period countries experienced stronger economic pressures. We also looked at the share of GDP accounted for by manufacturing. Contrary to the expectations that economies more dependent on manufacturing would be less likely to impose lockdowns, we find no evidence for this effect.

Table 5. Mixed effects models for economic and social capacity.

Economic and Social Capacity

	Dependent Variable: Lockdown Stringency				
	GDP per capita	**Δ** Quarterly GDP (lag)	**Δ** Quarterly Employment (lag)	Manufac-turing as % GDP	Social Protection
Factor Effect Wave 1	**0.020***	**0.037*****	**0.025*****	-0.001	-0.026
	(0.011)	(0.005)	(0.007)	(0.012)	(0.025)
Differential Effect Wave 2 (Factor * Wave 2)	0.008	**0.028*****	**0.027*****	0.002	0.008
	(0.007)	(0.004)	(0.006)	(0.007)	(0.007)
Observations	8,312	7,113	7,390	8,021	8,021
Log Likelihood	-801.86	-679.000	-678.902	-745.089	-746.926
Akaike Inf. Crit.	1,639.7	1,396.00	1,395.803	1,528.178	1,531.852
Bayesian Inf. Crit.	1,766.1	1,526.52	1,527.053	1,660.985	1,664.659
Note:					*p<0.1**p<0.05***p<0.01

We also expected that measures of social protection would be more relevant during this time. Richer countries, with more generous welfare states, should have been better able to mitigate the consequences of lockdowns for businesses and individuals, by providing grants, furloughs, unemployment benefits, and other mitigating policies. However, after controlling for GDP per capita, social protection expenditure does no appear to affect lockdown measures.

Test of our third hypothesis, which considers the effect of governance capacity and political legitimacy on government response, shows only partial support. Interestingly, neither quality of government nor measures of government effectiveness seem to have impacted lockdowns in either wave. However, the results suggest relevance of political legitimacy. We expected governments who are facing re-election in the months following lockdowns to be less likely to impose stringent measures and indeed, the results show that countries experiencing

elections during the first wave were less likely to impose lockdowns (Table 6, column 1). Yet, this effect is not present for the second wave of the pandemic, which is against our hypothesis. Looking at both periods together, countries experiencing elections had fewer restrictions on average. As suggested, this might be simply for logistical reasons, as elections require individuals to move and gather socially. Incumbents may have been reluctant to enact difficult and unpopular measures just ahead of the election, despite rising case numbers. Lastly, the indicator for electoral populism also does not seem to be related to lockdown severity. This is surprising, giving the wider scepticism that populists have shown towards the pandemic. However, this is consistent with findings showing that European populists were more likely to take the pandemic seriously than similar leaders in non-European countries such as the United States, Brazil, or the Philippines (Moise et al. 2021, Zabdyr-Jamróz et al. 2021).

Table 6. Mixed effects models for governance and political legitimacy.

Governance capacity and political legitimacy

	Lockdown Stringency				
	Quality of Government	Government Effectiveness	Election	Populism	Tests Per Case
Factor Effect Wave 1	0.010	-0.030	**-0.012*****	-0.003	**-0.417*****
	(0.023)	(0.021)	(0.004)	(0.012)	(0.109)
Differential Effect Wave 2	-0.001	-0.001	**0.012*****	0.003	**-0.014****
	(0.007)	(0.006)	(0.004)	(0.006)	(0.006)
Observations	7,730	8,016	8,312	8,016	8,312
Log Likelihood	-820.039	-850.456	-799.809	-851.940	-607.681
Akaike Inf. Crit.	1,678.078	1,738.911	1,637.617	1,741.880	1,257.362
Bayesian Inf. Crit.	1,810.183	1,871.706	1,771.101	1,874.675	1,404.897

Note: $^{*}p<0.1^{**}p<0.05^{***}p<0.01$

We also looked at governance capacity related to the pandemic, proxied through the number of tests per confirmed COVID case. Proper testing is important not only for containment and contact tracing, but also for the ability to have a proper picture of the state of infections in order to respond adequately with policy. As expected, the number of tests performed per case is strongly negatively related to the severity of lockdowns.[13] Proper testing and contact tracing can act as preventive measures, slowing the spread of the disease before it gets out of control, therefore lessening the need for the blunter tool of a lockdown. The fact that testing is still strongly predictive even after controlling for the number of cases and deaths (and several lags), suggests that testing is also capturing other dimensions that are likely related to governance capacity more directly related to the pandemic. The interaction effect tells us that testing has a slightly stronger negative effect in the second wave of the pandemic.

Lastly, given that some countries in our analysis are not EU member states, we ran an analysis that accounts for whether the country is an EU member state. After accounting for other factors, being part of the EU does not seem to be predictive of stringency, although this might be due to the small number of non-EU countries in our sample (Tables A2, A3, and A4 in the Appendix). In addition, we conducted the analysis on the subset of EU member states. Our results do not change substantively as most coefficients maintain their size and significance. This gives us confidence that our results are not driven by non-EU member states.

Conclusion

[13] See model 5 in Table 3, which allows for the effect of testing to vary within countries, across time. For the other models, testing was used only as a control variable, as a fixed effect.

This article analysed the differences between Eastern and Western Europe in the timing and severity of lockdowns introduced in response to the COVID-19 pandemics. A strong regional pattern emerged during the first wave, where Eastern European countries had a tendency to locked down faster in epidemiological terms than countries in the West. However, as the pandemic evolved, the Eastern countries loosened their restrictions and delayed reinstating them even as successive surges of the virus brought their health systems to the brink of collapse. Motivated by this puzzling difference between the two regions, the article focused on explaining the country differences in the pandemic response linking these to the variations in their health system, economic and political factors.

We find that countries with stronger health systems, that were more economically vulnerable, and that experienced elections, were more likely to defer restrictions. This partly accounts for the East-West regional differences that we observe. More importantly, the relative importance of health factors in the first wave of the pandemic, and the relative importance of economic factors in the second wave, explain much of the temporal variation that we see between the two regions. In comparison with Western European countries, countries in Eastern Europe on average locked down faster and tighter in the beginning, amid the great uncertainty at the start of the pandemic, fearing that their weaker health systems could not withstand the infections. As the pandemic moved on, electoral and economic considerations trumped fears over vulnerability of health systems, and Eastern European countries took a looser approach. This suggests that policy-makers make different trade-offs based on their perception of their system's ability to weather a crisis, as well as the long term political and economic costs associated with certain policies.

While our results provide useful insights into factors that explain differences in government responses to the pandemic crisis across regions, they are not without limitations. One inherent limitation is a regional generalization and dichotomous view of countries as

belonging to an Eastern or Western region. By grouping countries together, we necessarily brush over important differences in decision-making as well as between their health, welfare and economic systems. In terms of health system capacities for example, countries such as Slovenia or Slovakia are relatively close in their spending to Southern countries such as Malta or Greece. Nonetheless, we have shown that there are distinctive East-West regional patterns in response to the pandemic in terms of epidemiological timelines, as well as cross regional differences in factors we found to responsible for the variation in governments' responses, such as public healthcare spending and GDP levels, suggesting that regional comparisons are still worthwhile.

Another limitation is linked to the issue of data availability. While we used data on healthcare and socio-economic indicators that preceded the pandemic as proxies of country's capacities in the crisis context, a more accurate picture of these capacities could be provided using data on the actual countries' capacities in the crisis context by, for example, using data on oxygen tanks and respirators. Yet, good quality cross-country comparative data of this type are still not available.

Following the crisis management literature and its terms of their policy implications, our findings point to the need to treat different periods of a crisis with caution. They show that in the context of the COVID-19 crisis, it is important to separate the initial phase where decisions were based on the perception of the crisis as mainly public health emergency, from subsequent phases of the pandemic which made it a much more multifaceted phenomenon. As evolving conditions and knowledge of the crisis change the calculus for decision makers and bring into play policy trade-offs, these implied choosing among different alternatives and making judgements based on competing values (see Christensen et al. 2016; see also Lindblom 1965). Likely, the later periods of the pandemic will also need to be treated with caution,

especially as the advent of vaccines yet again changes the cost-benefit calculations for governments, thus providing new avenues for future research.

References

Aidukaite, Jolanta, Steven Saxonberg, Dorota Szelewa, and Dorottya Szikra (2021). "Social policy in the face of a global pandemic: Policy responses to the COVID-19 crisis in Central and Eastern Europe." *Social Policy & Administration* 55(2): 358-373.

Berger, Loïc, Nicolas Berger, Valentina Bosetti, Itzhak Gilboa, Lars Peter Hansen, Christopher Jarvis, Massimo Marinacci, and Richard Smith (2020). "Uncertainty and decision-making during a crisis: How to make policy decisions in the COVID-19 context?." *University of Chicago, Becker Friedman Institute for Economics Working Paper* 2020-95.

Bergsen, Pepijn (2020). "A new political economy for Europe post-COVID-19." *European View* 19(2)

Blank, Robert H. and Viola Burau (2014). *Comparative Health Policy*. Palgrave Macmillan.

Boin, Arjen and Martin Lodge (2021). "Responding to the COVID-19 crisis: a principled or pragmatist approach?." *Journal of European Public Policy*, 28(8):1131-1152.

Boin, Arjen, Martin Lodge and Marte Luesink (2020). "Learning from the COVID-19 crisis: an initial analysis of national responses." *Policy Design and Practice*, 3(3): 189-204.

Boin, Arjen, Paul 't Hart and Allan McConnell (2009). "Crisis exploitation: political and policy impacts of framing contests". *Journal of European Public Policy*, 16(1):81-106.

Boin, Arjen, and Paul 't Hart (2010). "Organising for effective emergency management: Lessons from research." *Australian Journal of Public Administration* 69(4): 357-371.

Boin, Arjen, Eric Stern and Bengt Sundelius (2016). *The politics of crisis management: Public leadership under pressure*. Cambridge University Press.

Buštíková, Lenka, and Pavol Baboš (2020). "Best in Covid: Populists in the time of pandemic." *Politics and Governance* 8(4): 496-508.

Capano, Giliberto (2020). "Policy design and state capacity in the COVID-19 emergency in Italy: if you are not prepared for the (un) expected, you can be only what you already are". *Policy and Society*, 39(3): 326-344.

Capano, Giliberto, Michael Howlett, Darryl S.L. Jarvis, M. Ramesh, and Nihit Goyal (2020). "Mobilizing policy (in) capacity to fight COVID-19: Understanding variations in state responses." *Policy and Society* 39(3): 285-308.

Cepaluni, Gabriel, Michael Dorsch, and Réka Branyiczki (2020) "Political regimes and deaths in the early stages of the COVID-19 pandemic." *Journal of Public Finance and Public Choice*, 37(1): 27-53.

Chater, Nick (2020). "Facing up to the uncertainties of COVID-19." *Nature Human Behaviour* 4(5): 439-439.

Cheibub, Jose A., Ji Yeon Jean Hong, and Adam Przeworski (2020). "Rights and deaths: Government reactions to the pandemic." *Available at SSRN 3645410*.

Christensen, Tom, Per Lægreid, and Lise H. Rykkja (2016). "Organizing for crisis management: Building governance capacity and legitimacy." *Public Administration Review* 76(6): 887-897.

Christensen, Tom and Per Lægreid (2020). "Balancing governance capacity and legitimacy: how the Norwegian government handled the COVID-19 crisis as a high performer." *Public Administration Review* 80(5): 774-779.

Coppedge, Michael, John Gerring, Staffan I. Lindberg, Sven-Erik Skaaning, Jan Teorell, David Altman, Michael Bernhard, Steven M. Fish, Adam Glynn. and Allen Hicken (2015). V-Dem Dataset v5. *Varieties of Democracy (V-Dem) Project*.

Eichhorst, Werner, Paul Marx, and Ulf Rinne (2020). "Manoeuvring through the crisis: Labour market and social policies during the COVID-19 pandemic." *Intereconomics* 55(6): 375-380.

Engler, Sarah, Palmo Brunner, Romane Loviat, Tarik Abou-Chadi, Lucas Leemann, Andreas Glaser and Daniel Kübler (2020). "Democracy in times of the pandemic: explaining the variation of COVID-19 policies across European democracies." *West European Politics*, 1-22.

Eurostat (2021). *European Commission, Eurostat Database*. Available at http://ec.europa.eu/eurostat/data/database. Last accessed 05.08.2021.

Ferrera, Maurizio, Joan Miró and Stefano Ronchi (2021). "Walking the road together? EU polity maintenance during the COVID-19 crisis." *West European Politics*, 2021, 44(5-6): 1329-1352.

Fuchs, Dieter and Hans-Dieter Klingemann (2019). "Globalization, populism and legitimacy in contemporary democracy." In Ursula van Beek (ed.) *Democracy under Threat*, Palgrave Macmillan, Cham, pp. 3-21.

Greer, Scott L., Elizabeth J. King, Elize Massard da Fonseca and Andre Peralta-Santos (2020). "The comparative politics of COVID-19: The need to understand government responses." *Global Public Health* 15(9): 1413-1416.

Greer, Scott , Elisabeth King, Elise F. da Fonseca and AndresPeralta-Santos (2021). *Coronavirus Politics: The Comparative Politics and Policy of COVID-19*. University of Michigan Press.

Guasti, Petra (2020). "The impact of the Covid-19 pandemic in Central and Eastern Europe: The rise of autocracy and democratic resilience." *Democratic Theory*, *7*(2), 47-60.

Immergut, E. M., Anderson, K. M., Devitt, C., & Popic, T. (2021). *Health Politics in Europe: A Handbook*. Oxford University Press.

Lindblom , Charles E. (1965). *The Intelligence of Democracy: Decision Making through Mutual Adjustment*. New York : Free Press.

Löblová, Olga (2020). "Coronavirus: What went wrong in the Czech Republic". The Conversation. Available at: https://theconversation.com/coronavirus-what-went-wrong-in-the-czech-republic-149505, accessed on 20 April 2022.

Kavanagh, Matthew M. and Renu Singh (2020). "Democracy, capacity, and coercion in pandemic response: COVID-19 in comparative political perspective." *Journal of Health Politics, Policy and Law* 45(6): 997-1012.

Kristal, Tali and Meir Yaish (2020). "Does the coronavirus pandemic level the gender inequality curve?(It doesn't)." *Research in Social Stratification and Mobility* 68: 100520.

CSSE (2020) Johns Hopkins Centre for Systems Science and Engineering, available at https://github.com/CSSEGISandData/COVID-19

Löblová, Olga, Julia Rone, and Endre Borbáth (2021). "Focus on Czechia, Hungary, and Bulgaria." In (eds.) Greer, S. L., King, E., Massard da Fonseca, E. and Peralta-Santos, A. *Coronavirus Politics: The Comparative Politics and Policy of COVID-19*. University of Michigan Press.

Maor, Moshe and Michael Howlett (2020). "Explaining variations in state COVID-19 responses: psychological, institutional, and strategic factors in governance and public policymaking." *Policy Design and Practice*, 3(3): 228-241.

McConnell, Allan, and Lynn Drennan (2006). "Mission impossible? Planning and preparing for crisis." *Journal of Contingencies and Crisis Management* 14(2): 59-70.

Moise Alexandru D., Gabor Scheiring, and Olga Löblová (2021). "Populist Radical Right and Health in Hungary". In *Populist Radical Right and Health: National Policies and Global Trends*, eds. Michelle Falkenbach and Scott L. Greer, Springer.

Narlikar, Amrita and Cecilia Emma Sottilotta (2021). "Pandemic Narratives and Policy Responses: West European Governments and COVID-19." *Journal of European Public Policy*, 28(8):1238-1257.

OECD (2021) https://www.oecd-ilibrary.org/docserver/85e4b6a1-en.pdf?expires=1621504576&id=id&accname=guest&checksum=DC7FBC802599CBE0EE16FB08917ED25C

OECD (2020) https://www.oecd.org/coronavirus/policy-responses/covid-19-crisis-response-in-south-east-european-economies-c1aacb5a/

OxCGRT (2020) Oxford COVID-19 government response tracker. Available at: https://www.bsg.ox.ac.uk/research/research-projects/covid-19-government-response-tracker

Plümper, Thomas and Neumayer, Eric (2022). "Lockdown policies and the dynamics of the first wave of the Sars-CoV-2 pandemic in Europe". *Journal of European Public Policy*, 29(3): 321-341.

Popic, Tamara and Alexandru D. Moise (2020). "Coronavirus: why is eastern Europe's second wave so much worse than its first?" *The Conversation*.

Reuters 2021. "Excess Deaths: Europe's COVID-19 Divide". https://graphics.reuters.com /HEALTH-CORONAVIRUS/DEATHS/jznvnmanrpl/.

Rosenthal, Uriel, Michael T. Charles and Paul 't Hart (1989). *Coping with Crises: The Management of Disasters, Riots and Terrorism*. Springfield, IL: Charles Thomas.

Roubini, Nuriel (2020). "Coronavirus pandemic has delivered the fastest, deepest economic shock in history." *The Guardian*, *25* March 2020.

Terlizzi, Andrea (2019). *Health System Decentralization and Recentralization*. Springer International Publishing.

Terlizzi, Andrea, and Giovanni Esposito (2021). "New Public Management Reform ideas and the remaking of the Italian and Danish health systems." *Territory, Politics, Governance* (2021): 1-20.

Shibata, Ippei (2020). *The Distributional Impact of Recessions: The Global Financial Crisis and the Pandemic Recession*. International Monetary Fund.

Steier, Joerg, and John Moxham (2020). "The load and capacity model of healthcare delivery: considerations for the crisis management of the COVID-19 pandemic." *Journal of Thoracic Disease* 12(6): 3022-3030.

Teorell, Jan, Stefan Dahlberg, Sören Holmberg, Bo Rothstein, Anna Khomenko and Richard Svensson (2016). *QoG Standard Dataset 2016*.

The Guardian (2020). "Why has Eastern Europe suffered less from coronavirus than the West". https://www.theguardian.com/world/2020/may/05/why-has-eastern-europe-suffered-less-from-coronavirus-than-the-west

The Economist (2020). "Eastern Europe's Covid-19 Recession Could Match its post-communist one". https://www.economist.com/europe/2020/05/28/eastern-europes-covid-19-recession-could-match-its-post-communist-one.

Toshkov, Dimiter, Brendan Carroll and Kutsal Yesilkagit (2021). "Government capacity, societal trust or party preferences: what accounts for the variety of national policy responses to the COVID-19 pandemic in Europe?". *Journal of European Public Policy*, 1-20.

Vadlamannati, Krishna C., Arusha Cooray and Indra de Soysa (2021). "Health-system equity, egalitarian democracy and COVID-19 outcomes: An empirical analysis". *Scandinavian Journal o Public Health*, 49(1): 104-113.

Weible, Christopher M., Daniel Nohrstedt, Paul Cairney, David P. Carter, Deserai A. Crow, Anna P. Durnová, Tanya Heikkila, Karin Ingold, Allan McConnell and Diane Stone (2020). "COVID-19 and the policy sciences: initial reactions and perspectives." *Policy sciences* 53(2): 225-241.

Wendt, Claus, Jürgen Kohl, Monika Mischke, and Michaela Pfeifer (2010). "How do Europeans perceive their healthcare system? Patterns of satisfaction and preference for state involvement in the field of healthcare." *European Sociological Review* 26: 177-192.

WHO 2021, World Health Organization European Health for All Database, available at: https://gateway.euro.who.int/en/datasets/european-health-for-all-database/

Winkelmann, Juliane, Erin Webb, Gemma A. Williams, Cristina Hernandez Quevedo, Claudia B. Maier, and Dimitra Panteli (2021). "European countries' responses in ensuring sufficient physical infrastructure and workforce capacity during the first COVID-19 wave." *Health Policy*.

World Bank **(**2020). The Global Economic Outlook During the COVID-19 Pandemic: A Changed World.

Zabdyr-Jamróz Michał, Olga Löblová, Alexandru D. Moise and Iwona Kowalska-Bobko (2021) "Is the Polish 'Law and Justice' (PiS) a Typical Populist Radical Right Party? A Health Policy Perspective", in *Populist Radical Right and Health: National Policies and Global Trends,* eds. Michelle Falkenbach and Scott L. Greer, Springer.