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ORIGINAL ARTICLE

The logics of COVID-19 travel restrictions between European countries

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Abstract

Objectives: The article analyzes the existence of bilateral travel restrictions between European countries during the second wave of the Sars-CoV-2 pandemic. The paper tests three sets of theoretically derived predictions, which follow epidemiological, economic, and political logics.

Method: We analyze a sample of directed bilateral travel restrictions between 27 European countries: 27.26 = 702 country dyads over a period of 6 months during the second wave of the pandemic.

Results: We find robust and relevant results for the difference in incidence rates, for income from tourism, for trust in government and public administration and for political inclusiveness.

Conclusion: Our analyses demonstrates that economic and political logics exert a strong influence on containment measures and thus stress the relevance of forming a large societal and political coalition against the pandemic.

In May 2020, stringent anti-coronavirus policies and widespread acceptance of social distancing norms brought the first wave of the Sars-CoV-2 pandemic to an end in most European countries (Hsiang et al., 2020; Plümper and Neumayer, 2020). Slowly but surely life began to normalize. Shops, restaurants, and theaters reopened, the number of people working from home declined, public events resumed, and the holiday season evolved almost as if the virus had been defeated. But this situation proved short-lived. In autumn, the number of known infections reached new peaks and slowly but surely Europe became caught, once again, in the stranglehold of the pandemic (Looi, 2020). The virus was back and along with it the political measures that had helped countries fight and end the first wave of the pandemic: hospitality, school and store closures, stay home orders, and travel restrictions.

During the first wave of the pandemic, most European countries restricted both inward and outward travel and implemented universal restrictions that precluded either all cross-border travel or, at most, kept borders open for business travelers and cross-border commuters.[1] By contrast, during the second wave, the vast majority of governments limited and regulated inward travel only, issuing at most warnings for

[1] ⟨https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/travel-during-coronavirus-pandemic_en⟩.

outgoing travel. Second-wave travel restrictions were also less rigorous: during the first wave, governments grounded planes, suspended international train connections, and closed border crossings, whereas second-wave travel restrictions by and large told incoming travelers to quarantine themselves or demanded a negative Sars-Cov-2 test either before or shortly after entry.[2]

In both waves, many governments reacted rather late to rapidly rising infection rates in other countries and the second wave sees dramatically more selectivity and heterogeneity in travel restrictions imposed than the first wave. Both stylized facts are surprising since research clearly showed that late, half-hearted, uncoordinated and too selective travel restrictions failed to prevent a very strong first wave of infections in Europe and elsewhere (Mason Meier et al., 2020; Linka et al., 2020) and, at best, slowed the spread of the virus by only a short period of time (Chinazzi et al., 2020; Saunder, 2020). By contrast, travel restrictions can be very effective in reducing incidence rates if they are implemented early and stringently enough (Linka et al., 2020).

In this article, we explain the selective and heterogeneous use of travel restrictions during the second wave of the pandemic. We examine when, and to which countries, governments in Europe did (or did not) implement travel restrictions on each other between July and December 2020. Our explanation focuses on three different logics: epidemiological, economic, and political.

The first factor influencing travel restrictions during the second wave is the relative pandemic situation in a country implementing restrictions, the regulating country (or regulator for short) and abbreviated i, and in the country upon which restrictions are placed, the target country (or target) and abbreviated j (with $i \neq j$). As we will argue, the higher the incidence rate in target country j relative to regulating country i, the more likely i implements travel restrictions for travelers from j. We also discuss Pueyo's conjecture (2020) that travel restrictions alone will do little to reduce incidence rates, but instead governments can make use of them as part and parcel of a more comprehensive bundle of policies. The economic logic for and against travel restrictions is shaped by countries' revenue from international tourism. We suggest that tourist destinations are less likely to impose travel restrictions—that is, unless the tourist season is over or countries' incidence rates rise to levels that forces them to impose a variety of restrictions, including travel restrictions, and to eventually go into lockdown. Finally, the political logic is determined by the unpopularity of travel restrictions. As a result, trust in the government and public administration, and greater inclusiveness of a government, in terms of representing a broader part of the political spectrum, increases the ease with which governments are able to impose restrictions on travelers.

We cannot empirically test our arguments in a classical monadic research design that simply looks at the number of restrictions implemented by each country. We need a dyadic approach as the epidemiological logic depends on the relative incidence rates between regulator and target. We therefore test our arguments relying on a directed country dyadic research design.

THE EPIDEMIOLOGICAL, ECONOMIC, AND POLITICAL LOGIC OF SECOND-WAVE TRAVEL RESTRICTIONS

In this section, we explain second-wave travel restrictions by drawing on arguments that combine three logics—epidemiological, economic, and political.

The epidemiological case for travel restrictions

Travel restrictions are one of the oldest measures against the spread of an infectious disease. According to historic sources, they were first used when Genoese traders brought the plague with them from the

[2] Information on travel restrictions among European countries was coded relying on a combination of government websites and national institutes for public health and disease control. See section 3 for more detail. Information can also be found on the "Re-open EU" website, the "UN Observatory on border crossing status due to COVID-19," other travel advice dedicated sources and media sources. Our travel restrictions and replication data can be accessed at ⟨https://dataverse.harvard.edu/⟩.

port city of Kaffa in the Crimea in 1347. European port populations tried to protect themselves by imposing a 40-day isolation on sailors aboard their ships before they were allowed to disembark. Throughout the centuries, the logic of travel restrictions has not changed much (Gensini, Yacoub, and Conti, 2004), they essentially remain an instrument restricting social contact between the local population and travelers arriving from regions hit by an epidemic.

At different stages of the Sars-CoV-2 pandemic, politicians implemented travel restrictions with differing intentions and with varying goals in mind. At the beginning of the first wave, governments implemented travel restrictions to cut the ties to China in general or specifically to the city of Wuhan. It is now understood that these travel restrictions came too late, and they were not rigorous enough to prevent the spread of the Sars-CoV-2 virus (Chinazzi et al., 2020). Thus, in March 2020, some governments were forced to change their strategy to a more drastic approach, applying restrictions to virtually all other countries. In April and May, these general travel restrictions culminated in border closures not just between Europe and the rest of the world but also between many European countries. As the first wave ended, intra-European travel restrictions were lifted, the European holiday season began and the virus started to spread again. During the emerging second wave, travel restrictions were less stringent and were mainly used to discourage unnecessary international travel. They were often targeted toward countries which were perceived as high-risk areas, usually countries that had an incidence rate higher than the country implementing travel restrictions, or above some predetermined threshold. They no longer aimed at preventing the spread of the virus as such they merely acted as instruments used by the slightly better off to protect themselves from travelers returning from worse off countries.

Scientific research on the effect of travel restrictions followed this evolution of travel restrictions over the year 2020. The first round of analyses studied the failed containment of the virus in China during the early days of the first wave, both in China generally and more specifically in Wuhan. The results of this research were not surprising: an early paper published in *Science* found only a moderate and temporary effect of travel bans for travelers from Wuhan, China, on the international transmission of infections (Chinazzi et al., 2020). This research concluded that these restrictions came too late and were not restrictive enough to stop the spread of the virus from its supposed origin. It should be noted, however, that these results do not prove the ineffectiveness of travel restrictions. This is one possible outcome, but not the only one. Although travel restrictions were indeed often late and had a limited effect on the spread of the virus, the effect was significantly larger in the few countries that implemented travel restrictions early enough, most notably Australia, New Zealand, Taiwan, and Japan. For example, the research of Liebig et al. (2020) and Costantino, Heslop, and MacIntyre (2020) analyze the case of Australia in detail—a country that implemented fairly strict travel restrictions at an early stage of the pandemic. Both studies find a reduction of 88 percent in imported infections between January and June 2020 (Liebig et al., 2020; Costantino, Heslop, and MacIntyre, 2020), thereby demonstrating the potential of travel restrictions when implemented timely and rigorously, while Chinazzi et al.'s study demonstrates how little travel restrictions contribute if they come too late and only selectively.

For European regions, Eckardt, Kappner, and Wolf (2020) find a moderate but stable dampening effect of border controls in regions that had a large number of cross-border commuters before the pandemic. According to their analysis, border controls reduce infections by approximately 6 percent—not enough to stop the virus but certainly not irrelevant when fatalities caused by the virus run into the tens of thousands. Perhaps most importantly, this study shows that travel restrictions do not simply shift the curve of exponential growth of cumulative incidence a little to the right, rather, travel restrictions may help governments to stabilize incidence rates at manageable levels.[3]

The effect of travel restrictions can also be studied from a different perspective, namely what happens in their absence when travel increases. Farzanegan et al. (2020) identify a statistical association between

[3] Computational models of an epidemic, that is, models that assume the existence of four subgroups in a population—susceptible, exposed, infected, recovered (SEIR)—and the transition rates and periods between them (Aron and Schwartz 1984), support these empirical findings. Computational models demonstrate that travel restrictions influence the dynamics of a pandemic for three reasons: First, they influence the number of infected and exposed people in a population. Second, they influence the number of contacts between people. And third, they reduce the mobility of individuals, thereby rendering it more difficult for the virus to spill-over from one person to another or from one population to another.

high flows of international tourism on the one hand and the number of confirmed infections and deaths linked to the COVID-19 disease. According to their analysis, "a 1 percent higher level of inbound and outbound tourism is associated with 1.2 percent and 1.4 percent higher levels of confirmed Sars-Cov-2 cases and COVID-19 deaths, respectively, controlling for other factors." Along similar lines and using a very different research design, the Robert-Koch-Institute (RKI 2020) finds that in 30–40 percent of positive cases reported to the institute in August, a country abroad was stated as the most likely place of infection. Plümper and Neumayer (2021) report a similarly large effect of the "summer school holiday" season on the incidence rates in German districts.

In sum, research on the effect of travel restrictions on incidence rates suggests that these effects depend on the timing of restrictions and on their stringency. Different analyses consistently show that travel restrictions can, but do not need to, have an effect on infection rates. If they are implemented half-heartedly and late, namely when the virus has already crossed the border, they at best gradually slow the spread of the virus. The picture changes when travel restrictions are implemented early and with sufficient rigor. In this case, they significantly reduce the transmission of the virus and enable governments and health authorities to pursue a test, trace, and isolate strategy. Thus, travel restrictions are, as Pueyo (2020) notes, not sufficient, "but they're necessary: They don't work standalone, but without using them, it's impossible to stop the virus." Travel restrictions are therefore most useful as part of a whole suite of measures that allow governments to rely on test, trace, and isolate strategies to fight the pandemic helping them to avoid an economically and socially costly lockdown.[4]

We derive the following two hypotheses: First, travel restrictions are effective when they are implemented early. "Early" and "late" refer to epidemiological time: Governments respond "early" when they implement stringent measures when incidence rates are still low, and they respond "late" when the pandemic situation is already so bad that it forces a reaction. We predict that travel restrictions are more likely to be implemented against a target country j the higher its incidence rate in relation to the incidence rate in the regulating country i. Second, travel restrictions are most effective if they are part and parcel of a suite of anti-coronavirus policies. Accordingly, travel restrictions are more likely to be implemented by countries that implement a relatively stringent set of policies for containing the spread of the virus.

The economic case against (and for) travel restrictions

Travel restrictions aim at reducing mobility. If they work as intended, they increase the cost of travelling which is associated with all sorts of economic consequences, including a significant decline in the volume of trade in goods (Startz, 2018). As a result, these restrictions are likely to affect all sectors of an economy, though not evenly. During the second wave of the pandemic in Europe, cross-country commuters and business travelers were usually exempt from even relatively soft travel restrictions, such as quarantine and compulsory testing regulations. By contrast, tourist and leisure travelers were never exempt. For this reason, the travel and tourism industry has been hit the hardest by travel restrictions (Söderlund, 2020). The United Nations World Tourism Organization (UNWTO) has suggested that revenues from international tourism in Europe almost completely collapsed during the first wave and estimated a decline of roughly 60 percent for the year 2020.[5]

We start our argumentation with the uncontroversial assumption that the economic costs of travel restrictions vary largely among countries and are being felt most in countries that depend on revenues from international tourism. In absolute terms, Spain, France, the United Kingdom, and Italy are the

[4] Governments face a choice among three main strategies for dealing with the pandemic in their country (Plümper and Neumayer, 2020): do nothing; test, trace, and isolate; and the imposition of social distancing measures typically culminating in a lockdown. Governments clearly prefer test, trace, and isolate to strict lockdown measures. In this perspective, travel restrictions stabilize the pandemic at infection rates that allow test, trace, and isolation strategies to succeed.

[5] ⟨https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2020-08/UN-Tourism-Policy-Brief-Visuals.pdf⟩. These estimates were published before the second wave affected European countries and brought travel restrictions back on the political agenda. It is therefore likely that the pandemic's impact on the European tourism industry will be larger than initially predicted by the UNWTO.

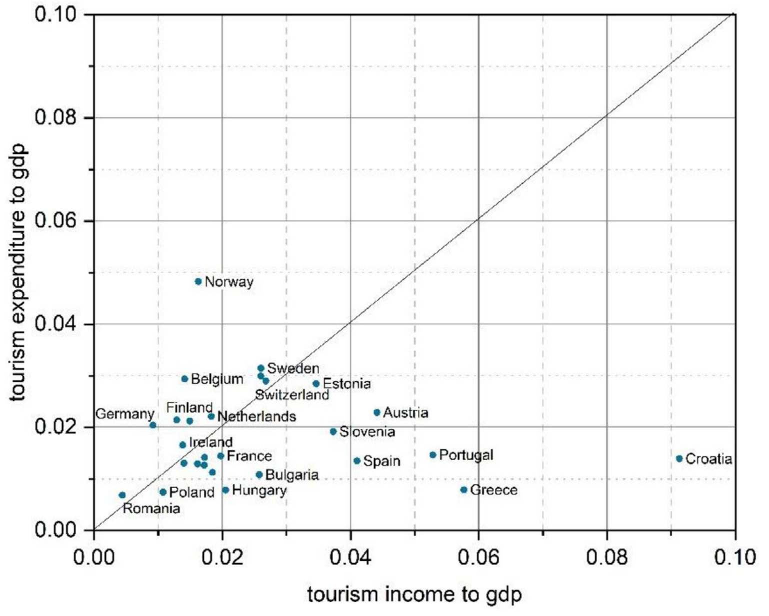

FIGURE 1 Income and expenditure from international tourism

leading tourist destinations in Europe (Travel and Council, 2019; Vaidya et al., 2020).[6] However, what matters is dependence of a country on tourism not absolute size and for our purposes we need to focus on international tourism. In Croatia, Iceland, Greece, and Malta more than 20 percent of all jobs are in the tourism sector while Croatia, Malta, Iceland, Greece, Portugal, Luxemburg, Bulgaria, Estonia, Slovenia, and Spain generate more than 5 percent of their GDP from tourism. Figure 1 displays European countries' relative position in the international tourism market, based on OECD Balance of Payments data that only count direct income from international tourism.[7] It thus biases the economic importance of the tourism sector downwards. However, indirect income from tourism tends to be strongly correlated with direct income from tourism.

On the x-axis, we display income from international tourism, which is counted under exports in the balance of payments. On the y-axis, we show expenditure on international tourism, which is counted under imports. Figure 1 reveals great variation in the relative importance of the international tourism sector to the countries in our sample. At one extreme, we have Croatia, and to a lesser extent Greece, Portugal, Austria, and Spain which depend strongly on income from international tourism. On the other extreme, we find Norway, Germany, and Belgium as net importers of tourism services.

At first glance, the economic case in tourism dependent countries is one against travel restrictions since they are economically costly. However, upon closer inspection, as we will argue in this section, the economic logic is more complex as the economic effect of travel restrictions is influenced by two factors: the implementation of other anti-coronavirus measures and the incidence rate in the countries profiting from tourism. We argue that it would be misleading to assume that tourist destinations are always less likely to implement travel restrictions than the net importers of travel services. To put it differently, for countries depending on tourism, avoiding travel restrictions is the dominant strategy in fair weather. If domestic incidence rates are low, these countries avoid travel restrictions to allow an unhampered tourism season and to maximize revenues from international tourism. Thus, countries with large tourism industries—countries that traditionally generate a large resource inflow from tourism and have a sizeable labor stock

[6] ⟨https://www.atlasbig.com/en-us/countries-tourism-income⟩.

[7] ⟨https://stats.oecd.org/index.aspx?queryid=67115⟩.

employed in the tourism industry—have a higher incentive to refrain from travel restrictions when their incidence rates are comparably low and the country has no lockdown measures implemented. In this situation, tourism-dependent countries avoid obstructing tourism and even actively promote their tourist destination as particularly safe places.

If, however, the incidence rates in the countries depending on tourism are high, either in absolute or in relative terms, the logic of travel restrictions changes. With higher incidence rates, the economic advantages of unrestricted travel decline for three reasons. First, as incidence rates increase, the attractiveness of the country to foreign tourists declines, this even in the absence of other strict anti-coronavirus measures, but particularly so when they are also present: If bars and restaurants close or if tourist regions go into a lockdown, few foreign tourists would stay, let alone consider travelling to such regions. Accordingly, travel restrictions do very little additional harm to the revenues from tourism if incidence rates are high. Second, relatively moderate travel restrictions in the tourism-dependent country may prevent even higher incidence rates and, at least for a while, may prevent tourists' home countries from implementing harsher travel restrictions for returning tourists or, in the extreme case, for outgoing travelers. Third and finally, governments may expect that travel restrictions help to reduce incidence rates and therefore reduce the time until the country reaches incidence rates that allow the reopening of hotels, restaurants, and bars. Thus, for a country dependent on international tourism, travel restrictions coupled with a short and harsh lockdown in the low season appear to be the optimal policy.

In sum, we expect that countries which are heavily dependent on international tourism have more of an incentive to refrain from imposing travel restrictions, thereby keeping travel unimpeded, than countries that do not depend, or depend to a lesser extent, on income from international tourism. However, dependence on tourism does not under all circumstances reduce the political willingness to implement travel restrictions. If the holiday season is over and/or incidence rates are high, a radical anti-coronavirus policy is in the best interests of tourism-dependent countries, and this radical policy will include travel restrictions.

The political case for and against travel restrictions

From a political perspective, anti-coronavirus measures do not just aim at reducing incidence rates. Government parties also attempt to increase their political support. During the first wave of the pandemic, political factors did not exert a strong influence on the choice of restrictions (Plümper and Neumayer, 2020),[8] mainly because a surprisingly strong rally round the flag effect made incumbent parties political winners of the pandemic and silenced oppositions (Baekgaard et al., 2020; Hegewald and Schraff, 2020; Bol et al., 2020). In March, April, and May 2020, virtually all dominant parties in European governments were able to increase their political support with voters—regardless of the measures they supported or implemented in fighting the pandemic.

Still, as early as April 16, *New York Times* journalist Steven Erlanger published an article suggesting that the increase in political support for incumbent parties may not last (Erlanger, 2020). He was not wrong. During the second wave of the pandemic, containment measures have become highly contested. Some parties represented in parliaments have taken a firm stance against anti-coronavirus measures, arguing that these measures kill more people than COVID-19 or, at least, do more harm than good. In many countries, a similar radical opposition movement has emerged outside of parliaments.

[8] The most widely discussed political influence has been the question of whether governments in liberal political regimes have a structural disadvantage to react early and stringently to rapidly rising incidence rates. For example, Frey et al. (2020) have found that "more autocratic regimes have indeed introduced stricter lockdowns and have relied more on privacy-intrusive measures like contract tracing." Cheibub, Hong, and Przeworksi (2020) similarly argue that countries with fewer political constraints can implement stricter anti-coronavirus measures and implement them earlier (in epidemiological time). Yet, autocratic political authority does not necessarily lead to a quicker political response, it may also lead to neglect, ignorance, and political inactivity in response to the crisis. In any case, although interesting, we do not pursue further this line of reasoning here since, with the possible exception of Poland and Hungary, all the European countries in our sample are liberal democracies, in which political and civil liberties are similarly well protected by constitutions and a dense web of political checks and balances.

If one was to rank anti-coronavirus measures by their political unpopularity, travel restrictions would come close to the top right next to school closures, stay-home orders, and mask wearing regulations. And yet, almost all European countries implemented stringent travel restrictions during the first wave, and many European countries have implemented more targeted and selective travel restrictions during the second wave. In the remainder of this section, we will argue that, given their unpopularity, governments benefitting from greater political trust and support from across the political spectrum need to overcome fewer political barriers when imposing such restrictions.

The pandemic confronts governments simultaneously with two political problems: First, the pandemic has strong distributional effects—the probability of death increases with age and pre-existing health conditions. At the same time, the pandemic and the political measures associated with it have the same distributional consequences, albeit in the opposite direction—the probability of significant economic costs declines with age. Clearly, these redistributive consequences are likely to trigger political polarization, as they generate political tensions between those having a comparably high probability of dying from COVID-19 but suffering few if any economic losses due to anti-coronavirus measures, and those who have a low probability of dying from COVID-19 but face potentially large economic losses.

In addition, over time the pandemic has triggered a legitimization crisis of political interventions as the scientific evidence for the effectiveness and efficiency of such interventions has often remained patchy. Anti-coronavirus measures put liberal political systems under a tremendous amount of political strain because of a severe trade-off between saving lives and protecting health outcomes on the one hand, and individual liberties and economic opportunities on the other. Governments still have to find a strategy that keeps the pandemic under control but does not have either huge economic costs or leads to a reduction in civil liberties, or both.

Whether or not citizens perceive economic losses and cuts into civil liberties as temporarily acceptable depends, at least to some extent, on two factors: The first is political trust and the second is the political inclusiveness of governments. As Blair, Morse, and Tsai (2017) have demonstrated, citizens exhibiting more trust in their governments are more likely to comply with political measures and thus reduce enforcement costs. Where trust is fragile, citizens comply significantly less which makes fighting the spread of Sars-CoV-2 more costly. Indeed, the success of populist parties may serve as a good indicator for the absence of political trust (Mauk, 2020; Jiang and Ma, 2020; Hooghe, 2020)—and that ultimately the combination of populist policies and low political trust will allow the pandemic to spiral out of control and lead to high incidence and mortality rates. In other words, political trust reduces the cost of potentially unpopular political measures, such as travel restrictions, for governments and thus is likely to increase the probability that unpopular measures are able to be implemented.

Political inclusiveness of the government—the diversity of the political positions of the parties in the ruling coalition—influences the choice of unpopular political measures as a result of a very similar logic: The wider the political spectrum bridged by a coalition government, the lower the potential for political cleavages within the parliament. Everything else being equal, broader coalitions increase the perceived political support for anti-coronavirus policies and enable the governments to act earlier and more stringently. Multiparty coalition governments, particularly if drawn from different party families, result in shared political responsibility and may therefore generate a broader political and societal consensus for employing unpopular policy measures. By contrast, single party governments or governments that are only supported by one part of the political spectrum are more likely to be criticized for imposing costly anti-coronavirus measures.

RESEARCH DESIGN AND RESULTS

We coded travel restrictions for 27 European countries as imposed on each other at one point in time, typically between the 21st and 23rd day of each month, for each of the months July to December 2020.[9]

[9] It would have been prohibitively time-consuming to code travel restrictions more frequently. The choice of fixing the period to 21st to 23rd of each month is arbitrary.

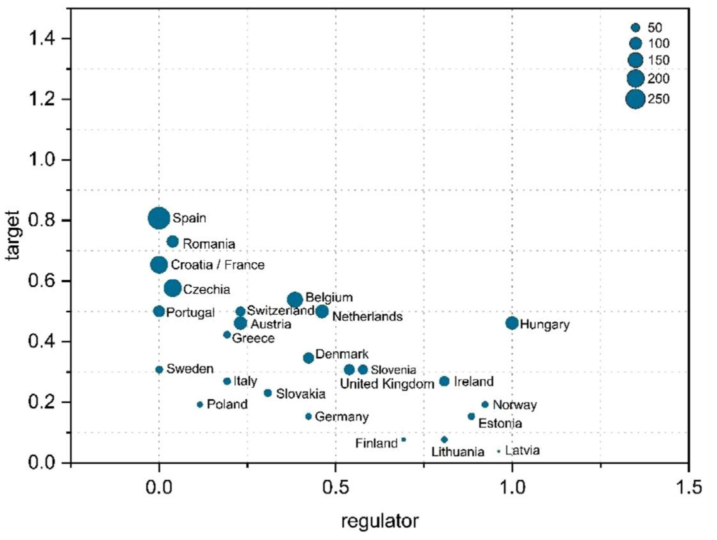

FIGURE 2 Average degree of travel restrictions imposed by regulating country (x-axis) or faced by target country (y-axis) together with two-week incidence rates in September

This gives us 27 multiplied by 26 dyads over a period of 6 months, or 4,212 dyad months as our units of analysis. Restrictions cover a range of policies, from outright travel bans, to quarantine requirements as well as the requirement to produce a recent negative Sars-Cov-2 test for entry. We also do not distinguish between national and subnational restrictions. As a result, the travel restrictions variable is a binary one coded with "1" denoting some form of travel restrictions in place by i on j, and "0" denoting the lack of such restrictions.[10] Average travel restrictions across all 27 countries rose more or less steadily from 13.2 percent of dyads in July 2020 to 73 percent of dyads in December 2020. The United Kingdom is the only target country that, due to the discovery of a new virus variant, faced travel restrictions from every other country in the sample in December 2020. Travel restrictions were assessed and data coded using a combination of government websites (typically Health, Interior, Foreign Affairs and Tourism Ministries, boarder guard agencies, and dedicated government coronavirus information websites) and national institutes for public health and disease control, such as the Robert Koch Institute in Germany, or the Statens Serum Institut in Denmark. In cases of ambiguity, data were validated using the U.K. Foreign Office travel advice, the "Re-open EU" website (an official website of the European Union detailing travel restrictions in European countries),[11] the "U.N. Observatory on border crossing status due to COVID-19,"[12] other travel advice dedicated sources[13] and media sources.

Figure 2 represents the situation in September 2020. On the x-axis, for all countries in the sample, we plot the sum of travel restrictions they impose as a regulating country i on other target countries j, divided by n, the total number of countries $j \neq i$ in the sample:

$$k_i = \frac{1}{n} \sum_{j=1}^{n} r_{ij} \tag{1}$$

where $0 \leq k_i \leq 1$ and $r_{ij} = 1$ if i has imposed restrictions on travelers from j, 0 else.

On the y-axis, for the same countries, we plot the sum of travel restrictions imposed on them as the target j of restrictions by other regulating countries i, divided by n, the total number of countries $i \neq j$ in

[10] We find qualitatively similar empirical results if we estimate the model with ordered logit on a dependent variable that is coded 0 in the absence of travel restrictions, 1 for subnational regional restrictions and 2 for restrictions affecting the entirety of the target country j.

[11] ⟨https://reopen.europa.eu/en⟩.

[12] ⟨https://wiki.unece.org/display/CTRBSBC/Observatory+on+Border+Crossings+Status+due+to+COVID-19+Home⟩.

[13] Such as ⟨https://www.schengenvisainfo.com/news/latest/ and https://travelbans.org/⟩.

the sample:

$$k_j = \frac{1}{n} \sum_{i=1}^{n} r_{ij} \qquad (2)$$

where $0 \leq k_j \leq 1$. As above, $r_{ij} = 1$ if i has implemented restrictions on j, 0 else.

For example, Hungary restricts travel from all other countries and thus has a score of 1.0 on the x-axis. At the same time, a little less than half of the countries restrict travel from Hungary, therefore the country has a score of a little shy of 0.5 on the y-axis. More generally, in the lower right corner of Figure 2, we find countries that have implemented travel restrictions on more countries than other countries have implemented travel restrictions on them, while in the upper left corner, we have countries that are more often the target of travel restrictions than they have implemented travel restrictions for travelers from other countries. If there were countries that had travel restrictions in place with all other countries in the sample, and all other countries had travel restrictions in place with the country of interest, it would be located in the upper right corner. Likewise, a country that does not use travel restrictions and is not targeted by travel restrictions by other countries would be located in the lower left corner.

Countries are represented by circles of various sizes which indicate their two-week incidence rate per 100,000 people prior to the dates for which we coded travel restrictions.

Figure 2 reveals a negative correlation between the number of travel restrictions countries implement and the number of travel restrictions they face. Countries that have more travel restrictions in place are less likely to be the target of travel restrictions implemented by other countries. Spain, for example, did not restrict the travel from other countries, but was more often the target of other countries' restrictions than any other European country. At the other extreme, Latvia restricted inflows from most other European nations but was rarely the target of travel restrictions from other countries. We also see that Hungary implements the strictest travel restrictions by closing its borders to all countries.

This pattern can to some extent be explained by the epidemiological situation in each country. As expected, countries with higher incidence rates more often become the target of travel restrictions. They are also less likely to use travel restrictions—with the notable exception of Hungary. At the same time, countries with lower incidence rates are less likely to be the target of travel restrictions. Yet, countries with relatively low incidence rate do not necessarily implement many travel restrictions. In September, Sweden, Italy, Poland, and Greece imposed significantly fewer travel restrictions than, for example, Ireland, Finland, and Latvia despite having similar incidence rates.

Figures displaying bivariate relations provide suggestive evidence but are not a substitute for multivariate regression analyses. We thus employ a logit estimator estimating separate results for each of the months with standard errors clustered on the target country j. Such clustering can account for the fact that a target country may see travel restrictions imposed on it simultaneously by several regulating countries if its incidence rate goes above a certain threshold. Some countries officially espouse that they follow essentially rule-based decision-making with respect to the state of the pandemic in foreign countries.

To test the hypotheses derived from the epidemiological, economic, and political explanations, we include the following explanatory variables. For the epidemiological explanation, we take the absolute difference in the two-week incidence rate (confirmed positive cases per 100,000 people) between target country j and regulating country i, with data taken from the website of the European Centre for Disease Prevention and Control (ECDC) as well as the containment and closure policies index from the widely used Oxford University's COVID-19 government response tracker.[14] Taking the difference in incidence rates as one of the two explanatory variables for the epidemiological logic of travel restrictions renders the potential for endogeneity concerns low. While travel restrictions aim at reducing the incidence rate in the country that implements travel restrictions, they also reduce the incidence rate in the target country since travelers can bring the virus with them in both directions. Nevertheless, there is likely to be some

[14] ⟨https://www.ecdc.europa.eu/en and https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker⟩.

small effect of travel restrictions on the difference in incidence rates, which is likely to decline because it is more likely that the virus is spread from countries with high incidence rates to countries with low incidence rates than vice versa and travel restrictions slow down this slightly asymmetric spread. In the counterfactual case with no travel restrictions and perfect mobility between countries *i* and *j* so that citizens from *i* had the same frequency and intensity of social interactions with citizens from *j* as they have with other citizens from *i*, the incidence rates of countries *i* and *j* would converge. In reality, however, the frequency and intensity of social interactions are a function of distance so that two randomly drawn citizens from *i* are much more likely to interact with each other than they are to interact with a citizen from country *j* and, of course, we argue here that a large difference in the incidence rates between *i* and *j* leads to the implementation of travel restrictions. If these restrictions are stringent and rigorously enforced, their effectiveness stabilizes the continued existence of travel restrictions as the examples of Australia and New Zealand demonstrate. In Europe, however, second-wave travel restrictions were far less stringent and were not rigorously enforced. For example, commuters were often exempt from travel restrictions and it was typically possible even for noncommuters to travel with either a negative test result and no quarantine or a quarantine period that was however hardly enforced—again, very different from the situation in Australia and New Zealand. Therefore, the effectiveness of travel restrictions within Europe tends to be low so that in the very long run our theory would predict that governments eliminate them when incidence rates of *i* and *j* sufficiently converge at either low or high levels—a prediction that is in principle covered by our empirical model since it explains not just the introduction but also the abolition of travel restrictions.

We capture the economic case against travel restriction by including a variable that measures the dependence of countries on international tourism in the form of direct revenue from international tourism as a percentage of GDP, as recorded in the balance of payments accounts.[15] Finally, we measure trust in government and public administration by the percentage of survey respondents in the Eurobarometer surveys undertaken in July and August 2020 who state that they "tend to trust" their national government as well as the public administration in their country.[16] To account for the inclusiveness of a government, for each country we have coded the number of different European Parliament party families represented in a country's national government using multiple publicly available sources—this variable takes on the value of one if only a single party constitutes the government or if it is a multiparty government but all parties belong to the same party family.

Appendix 2 provides summary descriptive variable statistics when all months are pooled together. The difference in incidence rates reaches a staggering maximum of approximately 1,600 cases per 100,000 people in October between Belgium as target country and Norway as regulating country. Surprisingly, Estonia in July (rather than Sweden) was the country with the least restrictive containment and closure policies, whereas the most restrictive policy was adopted by Greece in December after its international tourism season was over and it struggled with rapidly rising infection rates. Romania and Croatia are the countries that are least and most dependent on international tourism, respectively. Bulgarians tend to trust their government and public administration least, the Danes on the other hand, have the highest trust. Denmark, Greece, Hungary, Lithuania, Portugal, Romania, and the United Kingdom are all governed by single parties or multiparty governments that come from a single European parliament party family. By contrast, the governments of Belgium, Finland, Latvia, and Switzerland are relatively politically inclusive being made up of parties from four different party families.

Table 1 shows the estimation results. We find consistent support across all months for the first epidemiological hypothesis stating that a larger difference in incidence rates between target and regulating country renders it more likely that a regulating country imposes travel restrictions on a target country. The second epidemiologically based hypothesis receives support only from November onward. Travel restrictions are more likely the more stringent the containment and closure policies a government has adopted to fight the pandemic. With respect to the economic case for and against travel restrictions, we find that

15 ⟨https://ec.europa.eu/eurostat/web/tourism⟩.

16 We take the unweighted average between the two survey responses. ⟨https://ec.europa.eu/commfrontoffice/publicopinion/index.cfm/survey/getsurveydetail/instruments/standard/surveyky/2262⟩.

TABLE 1 Correlates of travel restriction imposed by country *i* on country *j*

	July	August	September	October	November	December
Difference incidence *j* to *i*	0.0621***	0.0417***	0.0119***	0.0014***	0.0035***	0.0009***
	(0.0099)	(0.0182)	(0.0011)	(0.0002)	(0.0003)	(0.0001)
Containment and closure policies	–0.0445***	–0.0051	–0.0173	0.0120	0.0449***	0.0313***
	(0.0121)	(0.0124)	(0.0104)	(0.0065)	(0.0064)	(0.0059)
Income from international tourism	–0.2880***	–0.1010	–0.2760***	–0.5070***	–0.0729***	0.2040***
	(0.0855)	(0.0867)	(0.0485)	(0.0585)	(0.0316)	(0.0165)
Trust in government and public administration	0.00358	0.0170***	0.0284***	0.0470***	0.0299***	0.0229***
	(0.0072)	(0.0050)	(0.0040)	(0.0042)	(0.0033)	(0.0022)
Inclusiveness of government	0.1810	0.5710***	0.3060***	0.7480***	0.6280***	0.5980***
	(0.1460)	(0.0965)	(0.0561)	(0.0642)	(0.0395)	(0.0668)
Constant	–0.4450	–3.2240***	–1.2830***	–3.4200***	–4.7250***	–3.9000***
	(1.2340)	(1.1420)	(0.5470)	(0.3590)	(0.5210)	(0.5260)
Observations	702	702	702	702	702	702
Pseudo *R*-squared	0.273	0.310	0.229	0.256	0.291	0.091

Note: Coefficient from logistic regression with standard errors clustered on targeted countries in parentheses.
***Statistically significant at 5 and 1 percent level, respectively.

countries more dependent on income from international tourism are less likely to impose travel restrictions in July and September to November. This effect changes direction in December; with the end of the tourism season (other than ski tourism) and facing rapidly rising second-wave infection rates, governments in countries dependent on international tourism adopt travel restrictions alongside comparably strict other anti-coronavirus measures. Lastly, other than for July, we find that countries in which a larger share of the population tend to trust the government and public administration find it easier to adopt travel restrictions, and that more inclusive governments—namely governments consisting of more parties from across the European Parliament party families—find it easier to implement such restrictions.

In order to assess the substantive impact of our explanatory variables, we have calculated average predicted counterfactual effects, where the presumed counterfactual is the observed minimum of a variable in the sample and the benchmark for the calculation of the effect against the counterfactual is the value of variables as observed in the sample for each dyad month, with all other explanatory variables also kept at their observed values.[17] Since we get different effect sizes for each variable for each month, we only report the maximum average predicted counterfactual effect. Thus defined, the difference in incidence rates between the target and regulating country exerts the strongest effect, raising the probability that a travel restriction is in place by 54.1 percentage points in November. The remaining variables have smaller and rather similar maximum effect sizes: 16.8 percentage points for the containment and closure policies in November; –18.7 percentage points for income from international tourism in October (counter-acted by an 8.7 percentage points higher probability of enacting travel restrictions in December); 20.1 percentage points for trust in government and public administration and 16.8 percentage points for the inclusiveness of government, both in October. These effect sizes imply that the epidemiological logic is the dominating explanatory factor with the combined effect sizes of the economic and political logics together only reaching slightly more than three quarters of the combined effect sizes of the variables based on the epidemiological logic. Of course, for countries such as Sweden and Hungary, the influence of political factors on the range of travel restrictions they impose is significantly larger than our average effect size estimates

[17] The presumed counterfactual is the observed monthly minimum for the time-varying difference in incidences variable.

TABLE 2 Correct and wrong predictions across all observations in sample

		Model predicts travel restrictions		
Travel restrictions		Yes	No	Correct/total
	Yes	1378	459	0.750
	No	446	1,929	0.812
	Correct/total	0.755	0.808	0.785

suggest, and in all likelihood the restrictions these countries impose are also partly determined by rather idiosyncratic factors not captured by our estimation model.

There are two ways to discuss the accuracy of our model. We could, first, ask to what extent our model correctly predicts the implementation of travel restrictions within a directed dyad? Second, we could ask to what extent do governments impose travel restrictions when they, according to our model, should not have travel restrictions in place (false negatives) or do not implement travel restrictions when they, according to our model, should use travel restrictions (false positives)? In Table 2, we display the accuracy of our predictions over the entire range of dyads and cumulated over all months. We assume that a predicted value of $\hat{y} > 0.5$ predicts the presence of travel restrictions, while a predicted value of $\hat{y} < 0.5$ predicts the absence of travel restrictions.

We find congruence between predicted and observed travel restrictions in 3,307 dyads and incongruence in 905 dyads over all periods. False positive predictions are slightly less frequent than false negative predictions. Overall, the share of congruent observations is high—with many false predictions being caused by idiosyncrasies in the regulating country. In fact, several countries deviate substantively from the predicted average behavior.

Figure 3 displays the accuracy of model predictions as well as false negatives and false positives for the regulating countries in our sample. False positive predictions—or instances where governments have implemented too few travel restrictions—are shown in dark blue on the left side of the figure. On the right side, we display false negatives predictions in dark blue—countries that have implemented too many travel restrictions relative to our model predictions. The vertical line within the light blue category of correctly classified dyads separates correctly predicted absence of dyadic travel restrictions (left) from correctly predicted presence of dyadic travel restrictions (right). As Figure 3 shows, countries that implement too few travel restrictions relative to our model predictions include Sweden, Poland, Switzerland, and France—all with at least 30 percentage points fewer restrictions than predicted. Countries imposing too many travel restrictions relative to our model predictions include Hungary, Slovenia, the United Kingdom, and Lithuania—with at least 30 percentage points more restrictions than predicted by our model. We suppose that these findings result from ideological differences in the political strategy toward fighting the pandemic. For example, Sweden has relied on a noninterventionist policy for most of 2020, a strategy that cannot easily be explained by structural factors. Figure 3 also shows that Croatia is nearly perfectly predicted by our model. The country has only one false positive and no false negative: The government did not restrict travelers from Spain in August when it already should have according to our model.

Figure 4 provides the same information for target countries. In general, our model generates more balanced predictions for target countries. The countries with the highest number of false positive predictions were Spain and Belgium—on average, governments waited too long to implement restrictions for travelers from these two countries or did not implement travel restrictions at all. Perhaps more interestingly, the list of countries with the highest number of false negatives—actual travel restrictions when the model predicts none—is topped by Bulgaria and Sweden. As the figure demonstrates, the model does not predict the best predicted target countries as accurately as the best predicted regulating countries, with Finland, Latvia, and Lithuania being the most accurately predicted countries overall.

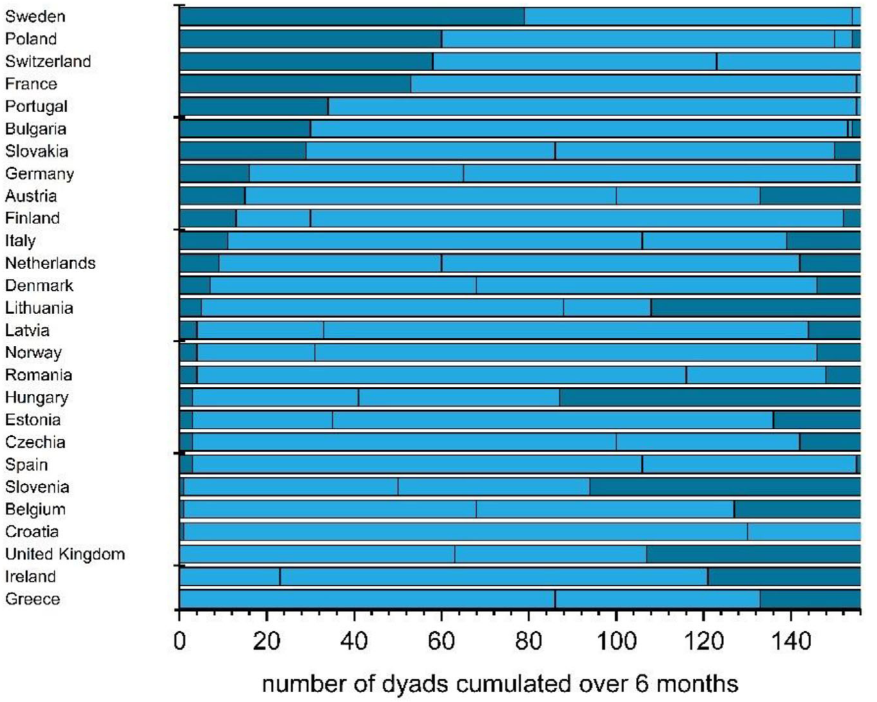

FIGURE 3 Correct (dark blue) and false (light blue) predictions for regulating countries

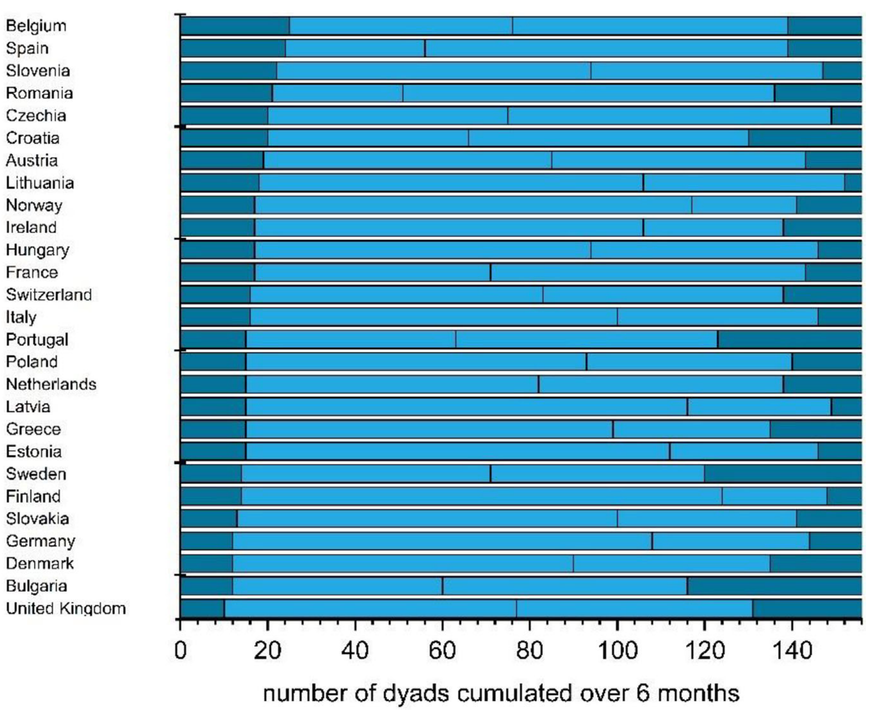

FIGURE 4 Correct (dark blue) and false (light blue) predictions for target countries

CONCLUSION

During Europe's second wave, travel restrictions were considerably less general and less restrictive than during the first wave. With rare exceptions, such as restrictions on travelers from the United Kingdom after the variant of the virus was discovered just before Christmas 2020, second-wave travel restrictions fell short of border closures. This type of restriction effectively only increased the transaction costs of holiday-makers and thus reduced the number of international holiday travels in the summer, autumn, and winter of 2020.

Travel restrictions can be an effective policy instrument for countries with relatively low incidence rates to prevent or minimize or at least delay the import of the virus from countries with relatively high incidence rates. They are also more likely to be implemented if they form part of wider stringent anti-coronavirus measures. But purely epidemiological explanations of travel restrictions remain incomplete as our analysis of travel restrictions among European countries over the period July to December 2020 has shown. We have shown that economic and political logics also impact on travel restrictions, albeit their substantive importance is smaller than the epidemiological logic.

Perhaps most interesting results of our analysis concern how the logics of travel restrictions change over time. As the second wave hit Europe with brute force, the differences in infection incidence became less relevant for travel restrictions over time as most countries experienced very high infection rates. Interestingly, tourist dependent countries went from being statistically significantly *less* likely to implement travel restrictions during the holiday season to becoming *more* likely to impose such restrictions when the season was over in December and their infection rates rose steeply. Countries with a large tourism industry tend to keep their borders open during the tourist season. However, when incidence rates become relatively high and the tourist season is over, these countries tend to implement relatively strict anti-coronavirus policies including travel restrictions. We believe that the strategy used by these international tourist destinations makes sense given the economic incentives for the government in these countries.

We also find evidence for the politization of anti-coronavirus policies during the pandemic's second wave in Europe. Such policies have become increasingly unpopular and politically contested. We have operationalized the ease with which governments are able to impose restrictions on travelers with two variables: The degree to which the population tends to trust the government and public administration, and the inclusiveness of the government defined as the number of parties forming the government with a different ideological stance—operationalized through the number of parties from different European Parliament party families in the government. If these factors are high, the government faces lower opposition to the implementation of unpopular anti-coronavirus measures, including travel restrictions. We find corroborating evidence for these hypotheses, suggesting that governments with less political authority find it more difficult to implement travel restrictions whenever they are useful in fighting the pandemic. The importance of trust in government and public administration as well as political inclusiveness of governments on the likelihood of imposing travel restrictions peaked in October but has always been statistically significant and substantively important from August onward.

From a normative perspective, our results stress the importance of forming a large societal and political coalition against Sars-Cov-2. The virus not only flourishes with close social interactions, it also does significantly better in countries where the political response to the pandemic becomes a major issue of political contention and in which opposition to anti-coronavirus measures is highjacked by political actors that utilize the unpopularity of some measures as opportunistic instruments to gain political leverage and, ultimately, vote shares.

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APPENDIX 1
LIST OF COUNTRIES IN SAMPLE

Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, and United Kingdom.

APPENDIX 2
SUMMARY DESCRIPTIVE VARIABLE STATISTICS

Variable	Observation	Mean	SD	Min	Max
Travel restrictions	4212	0.44	0.50	0	1
Difference incidence *j* to *i*	4212	0	325.90	–1600.38	1600.38
Containment and closure policies	4212	53.07	11.90	25	78.85
Income from international tourism	4212	2.60	1.83	0.40	9.10
Trust in government and public administration	4212	48.98	14.70	25.5	79
Inclusiveness of government	4212	2.30	1.01	1	4

APPENDIX 3
DATA SOURCES

Country	Source	URL
Austria	The Official Travel Portal	⟨https://www.austria.info/en/service-and-facts/coronavirus-information/entry-regulations⟩
	Federal Ministry Republic of Austria; Climate Action, Environment, Energy, Mobility, Innovation and Technology	⟨https://www.bmk.gv.at/en/service/entry-requirements.html⟩
Belgium	Kingdom of Belgium Foreign Affairs, Foreign Trade and Development Cooperation	⟨https://diplomatie.belgium.be/en⟩
	Federal Public Service (FPS) Health, Food Chain Safety and Environment	⟨https://www.info-coronavirus.be/en/travels/⟩
	Media	⟨https://www.brusselstimes.com/news/belgium-all-news/170900/over-70-of-high-risk-patients-in-belgium-vaccinated-first-dose-covid-19-coronavirus-bruvax-qvax-taskforce/⟩

(Continues)

Country	Source	URL
Bulgaria	Ministry of Tourism of the Republic of Bulgaria	⟨https://bulgariatravel.org/en/useful/practical-information-for-tourists-covid-19/⟩
	Ministry of Tourism of the Republic of Bulgaria	⟨https://www.tourism.government.bg/en/kategorii/covid-19⟩
	COVID-19 Unified Information Portal - Orders of state bodies, The Minister of Health	⟨https://coronavirus.bg/bg/166⟩
	Media	⟨https://sofiaglobe.com/2020/07/15/covid-19-bulgaria-drops-14-day-quarantine-requirement-for-arrivals-from-uk/⟩
		⟨https://www.traveloffpath.com/bulgaria-reopens-for-tourism-heres-who-can-visit/⟩
Croatia	Government of the Republic of Croatia - Official government website for accurate and verified information on Coronavirus	⟨https://www.koronavirus.hr/en⟩
	Ministry of the Interior of the Republic of Croatia	⟨https://mup.gov.hr/uzg-covid/english/286212⟩
	Croatia Airlines	⟨https://m.croatiaairlines.com/Important-notice/Important-information-about-COVID-19/Information-about-COVID-19/⟩
Cyprus	The Official Portal of Cyprus Tourism	⟨https://www.visitcyprus.com/index.php/en/cyprus-covid19-travel-protocol⟩
	Republic of Cyprus Ministry of Health	⟨https://www.pio.gov.cy/coronavirus/eng/categories/en-fly⟩
	Cyprus Flight Pass	⟨https://cyprusflightpass.gov.cy/⟩
	Hermes Airports	⟨https://www.hermesairports.com/covid-19/travelling-to-cyprus⟩
	Republic of Cyprus Ministry of Foreign Affairs	⟨https://mfa.gov.cy/advice/2020/12/21/travel-advice-covid19-uk/⟩
Czech Republic	Ministry of the Interior of the Czech Republic	⟨https://www.mvcr.cz/mvcren/article/coronavirus-information-of-moi.aspx⟩
	Ministry of Health of the Czech Republic	⟨https://koronavirus.mzcr.cz/en/list-of-countries-according-to-the-level-of-risk/⟩
		⟨https://koronavirus.mzcr.cz/en/extraordinary-and-protective-measures-of-the-ministry-of-health⟩
Denmark	Danish Police-Politi	⟨https://politi.dk/en/coronavirus-in-denmark/travelling-in-or-out-of-denmark/is-my-country-open-or-banned⟩
	Statens Serum Institut (Danish Public Health Institute)	⟨https://en.ssi.dk/⟩
	National Communications Partnership COVID-19 (various Danish Government Ministries)	⟨https://en.coronasmitte.dk/⟩
	Ministry of Justice	⟨https://www.justitsministeriet.dk/pressemeddelelse/danmark-indfoerer-skaerpede-indrejserestriktioner-for-udlaendinge-med-bopael-i-storbritannien/⟩
	Ministry of Health	⟨https://sum.dk/nyheder/2020/december/gaa-i-selvisolation-hvis-du-har-vaeret-i-storbritannien⟩

(Continues)

Country	Source	URL
Estonia	Republic of Estonia Ministry of Foreign Affairs	⟨https://vm.ee/en/information-countries-and-self-isolation-requirements-passengers⟩
	Estonian Government	⟨https://www.kriis.ee/en/travelling-estonia-foreigners⟩
Finland	Finnish Government	⟨https://valtioneuvosto.fi/en/entry-restrictions⟩
	Finnish Border Guard	⟨https://raja.fi/en/guidelines-for-border-traffic-during-pandemic⟩
	Finnish Institute for Health and Welfare	⟨https://thl.fi/en/web/infectious-diseases-and-vaccinations/what-s-new/coronavirus-covid-19-latest-updates/travel-and-the-coronavirus-pandemic/traffic-light-model-to-help-in-the-assessment-of-risks-associated-with-foreign-travel⟩
France	Ministry of Europe and Foreign Affairs	⟨https://www.diplomatie.gouv.fr/en/coming-to-france/coronavirus-advice-for-foreign-nationals-in-france/⟩
	French Embassy in London	⟨https://uk.ambafrance.org/⟩
Germany	Federal Foreign Office	⟨https://www.auswaertiges-amt.de/en/einreiseundaufenthalt/coronavirus⟩
	Robert Koch Institut (Public Biomedical Institution)	⟨https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Transport/Archiv_Risikogebiete/EN-Tab.html⟩
	Federal Health Ministry	⟨https://www.bundesgesundheitsministerium.de/service/gesetze-und-verordnungen/guv-19-lp/coronaschv.html⟩
Greece	Hellenic Republic General Secretariat for Civil Protection	⟨https://travel.gov.gr/#/⟩
	Hellenic Republic Ministry of Tourism	⟨https://greecehealthfirst.gr/⟩
Hungary	About Hungary (Government News Website)	⟨https://abouthungary.hu/⟩
	Budapest Airport	⟨https://www.bud.hu/en/covid_19/information_on_entering_and_leaving_hungary⟩
	Hungary Today (English-language news portal)	⟨https://hungarytoday.hu/⟩
	Other Media	⟨https://www.schoenherr.eu/publications/publication-detail/hungary-covid-19-travel-restrictions-are-back/⟩
		⟨https://dailynewshungary.com/lets-make-it-clear-how-foreign-citizens-can-come-to-hungary/⟩
Ireland	Department of Foreign Affairs	⟨https://www.dfa.ie/travel/⟩
	Department of the Taoiseach - Government of Ireland	⟨https://www.gov.ie/en/publication/b4020-travelling-to-ireland-during-the-covid-19-pandemic/⟩

(Continues)

Country	Source	URL
Italy	Ministry of Foreign Affairs and International Cooperation	⟨https://www.esteri.it/mae/en/ministero/normativaonline/decreto-iorestoacasa-domande-frequenti/focus-cittadini-italiani-in-rientro-dall-estero-e-cittadini-stranieri-in-italia.html⟩
		⟨http://www.viaggiaresicuri.it/approfondimenti-insights/saluteinviaggio⟩
	Ministry of Health	⟨https://www.salute.gov.it/portale/nuovocoronavirus/dettaglioContenutiNuovoCoronavirus.jsp?lingua=english%26id=5412%26area=nuovoCoronavirus%26menu=vuoto⟩
	Italian Embassy London	⟨https://amblondra.esteri.it/ambasciata_londra/en/ambasciata/ufficio-stampa/news⟩
Latvia	Center for Disease Prevention and Control (SPKC) (Public Health Institute)	⟨https://www.spkc.gov.lv/lv/valstu-saslimstibas-raditaji-ar-covid-19-0⟩
	Ministry of Foreign Arrairs of the Republic of Latvia	⟨https://www.mfa.gov.lv/en/consular-information/news/66019-emergency-situation-in-latvia-to-restrict-the-spread-of-covid-19⟩
	State Chancellery	⟨https://covid19.gov.lv/en/covid-19/safety-measures/self-isolation⟩
	Investment and Development Agency of Latvia (LIAA)	⟨https://www.latvia.travel/en/article/covid-19-and-travelling-latvia⟩
Lithuania	Government of the Republic of Lithuania	⟨https://koronastop.lrv.lt/en/#news⟩
	Ministry of Health - National Public Health Center	⟨https://nvsc.lrv.lt/en/information-on-covid-19/for-arrivals-from-abroad⟩
Netherlands	Government of the Netherlands	⟨https://www.government.nl/topics/coronavirus-covid-19/visiting-the-netherlands-from-abroad⟩
Norway	Norwegian Institute of Public Health	⟨https://www.fhi.no/en/op/novel-coronavirus-facts-advice/facts-and-general-advice/travel-advice-COVID19/⟩
	Ministry of Foreign Affairs	⟨https://www.regjeringen.no/en/topics/foreign-affairs/reiseinformasjon/travel_coronavirus/id2691821/?expand=factbox2723656⟩
	Ministry of Health and Care Services	⟨https://www.regjeringen.no/en/whatsnew/news-and-press-releases/id2006120/⟩
Poland	Website of the Republic of Poland	⟨https://www.gov.pl/web/coronavirus/travel⟩
	Polish Tourism Organisation	⟨https://www.poland.travel/en⟩
	Media	⟨https://www.polishnews.co.uk/the-flight-ban-to-sweden-and-portugal-was-extended-until-july-28/⟩
		⟨https://notesfrompoland.com/2020/09/01/poland-bans-flights-with-spain-in-new-no-go-list/⟩

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Country	Source	URL
Portugal	Visit Portugal (Portugal Tourism)	⟨https://www.visitportugal.com/en/content/covid-19-measures-implemented-portugal⟩
Romania	National Center for Surveillance and Control of Communicable Diseases	⟨https://www.cnscbt.ro/index.php/liste-zone-afectate-covid-19⟩
	Romanian Border Police	⟨https://www.politiadefrontiera.ro/en/main/n-covid19-98/⟩
	Code for Romania in Partnership with Government of Romania through the Authority for the Digitization of Romania and the Department for Emergency Situations	⟨https://stirioficiale.ro/informatii⟩
Slovak Republic	Ministry of Foreign and European Affairs of the Slovak Republic	⟨https://www.mzv.sk/web/en/covid-19⟩
	Ministry of Investments, Regional Development and Informatization of the Slovak Republic	⟨https://korona.gov.sk/en/travelling-to-slovakia-and-covid19/⟩
	IOM Migration Information Centre	⟨https://www.mic.iom.sk/en/news/637-covid-19-measures.html⟩
	Public Health Office of the Slovak Republic	⟨https://www.uvzsr.sk/index.php?option=com_content%26view=article%26id=4390:uvz-sr-do-zoznamu-menej-rizikovych-krajin-pribudne-veka-britania%26catid=250:koronavirus-2019-ncov%26Itemid=153⟩
Slovenia	Ministry of the Interior	⟨https://www.gov.si/en/topics/coronavirus-disease-covid-19/border-crossing/⟩
	Police - Ministry of the Interior	⟨https://www.policija.si/eng/newsroom/news-archive⟩
Spain	Institute of Tourism	⟨https://www.spain.info/en/discover-spain/practical-information-tourists-covid-19-travel-spain/⟩
	Ministry of Health	⟨https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov/spth.htm⟩
Sweden	Emergency Information from Swedish Authorities	⟨https://www.krisinformation.se/en/hazards-and-risks/disasters-and-incidents/2020/official-information-on-the-new-coronavirus/visiting-sweden-during-the-covid-19-pandemic⟩
	Government Offices of Sweden	⟨https://www.government.se/⟩
	The Swedish Police	⟨https://polisen.se/en/the-swedish-police/the-coronavirus-and-the-swedish-police/travel-to-and-from-sweden/entry-ban-to-sweden-from-uk-and-denmark/⟩
	Public Health Agency of Sweden	⟨https://www.folkhalsomyndigheten.se/the-public-health-agency-of-sweden/communicable-disease-control/covid-19/if-you-are-planning-to-travel/recommendations-for-those-travelling-or-who-have-travelled-to-sweden-from-the-united-kingdom/⟩

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Country	Source	URL
Switzerland	Federal Office of Public Health FOPH	⟨https://www.bag.admin.ch/bag/en/home/krankheiten/ausbrueche-epidemien-pandemien/aktuelle-ausbrueche-epidemien/novel-cov/empfehlungen-fuer-reisende/quarantaene-einreisende.html⟩
	State Secretariat for Migration	⟨https://www.sem.admin.ch/sem/it/home/sem/aktuell/einreiseverbot-uk-za.html⟩
	Federal Department of Foreign Affairs FDFA	⟨https://www.eda.admin.ch/eda/en/fdfa/fdfa/aktuell/newsuebersicht/2020/01/corona-virus.html⟩
United Kingdom	GOV.UK (UK Government information)	⟨https://www.gov.uk/browse/abroad/travel-abroad⟩
	Media	⟨https://www.bbc.com/news/uk-54108049⟩
EU	European Centre for Disease Prevention and Control (ECDC)	⟨https://www.ecdc.europa.eu/en/covid-19/situation-updates/weekly-maps-coordinated-restriction-free-movement⟩
General/ Validation	GOV.UK (UK Government information)	⟨https://www.gov.uk/foreign-travel-advice⟩
	Re-open EU (EU travel portal)	⟨https://reopen.europa.eu/en/⟩
	Travelbans.org	⟨https://travelbans.org/⟩
	United Nations Economic Commission for Europe - Observatory on Border Crossings Status due to COVID-19	⟨https://wiki.unece.org/display/CTRBSBC/Observatory+on+Border+Crossings+Status+due+to+COVID-19+Home⟩
	Schengen Visa Info	⟨https://www.schengenvisainfo.com/news/⟩
	Travel Off Path	⟨https://www.traveloffpath.com/⟩
	Timeout	⟨https://www.timeout.com/news/flights-are-now-banned-between-the-uk-and-these-countries-in-europe-and-beyond-122320⟩
	FlightStats	⟨https://www.flightstats.com/v2⟩