

PANDEMIC RESILIENCE INDEX



2021

Written by: Fred Roeder and Maria Chaplia

A background image featuring various medical supplies on a grey surface. In the top left, there is a blue surgical mask with a white zipper-like detail. In the top right, a blister pack contains several white, oval-shaped pills. In the bottom left, a white spray bottle and a small dark brown bottle with a yellow cap are visible. In the bottom right, there are several clear glass ampoules. A dark blue rectangular box is centered on the page, containing the title and a paragraph of text.

Executive Summary

The Pandemic Resilience Index ranks 40 countries in terms of their health system's resilience to the COVID-19 and alike crises. The Index looks at the following factors: vaccination approval, its drive, and time lags that have put brakes on it, critical care bed capacity, and mass testing.

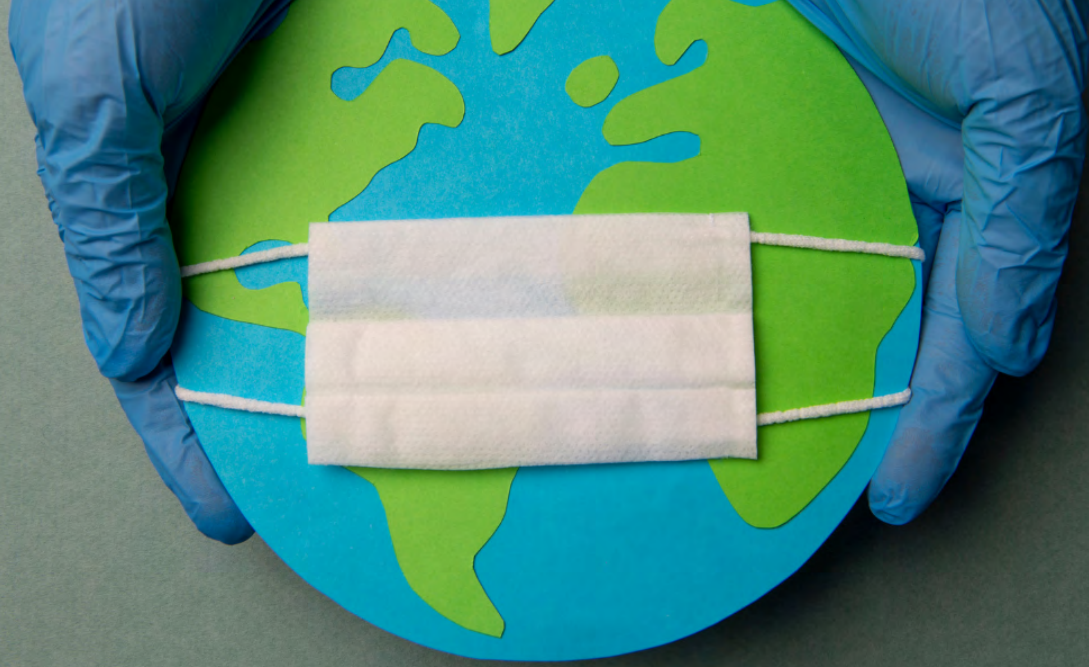
RANKING

GLOBAL RANKING OF PANDEMIC RESILIENCE

	Country	Score
HIGHEST	Israel	4241.3
	UAE	3621.2
	US	2899.45
	UK	2864.65
	Bahrain	2640.45
ABOVE AVAREGE	Slovakia	2561.5
	Luxembourg	2518.8
	Austria	2513.55
	Cyprus	2398.5
	Malta	2290.1
	Denmark	2170.5
	Germany	2144.7
	Czechia	1866.9
	Hungary	1866.25
	France	1814.45
AVAREGE	Lithuania	1799.65
	Estonia	1790.6
	Belgium	1787.25
	Canada	1778.3
	Romania	1756.65
	Bulgaria	1663.8
	Spain	1598.25
	Italy	1555.8
	Russia	1542.65
	Finland	1530.85
	Sweden	1523.5
	Croatia	1482.95
	Poland	1480.75
	Ireland	1464.45
	Portugal	1463.8
BELOW AVAREGE	Slovenia	1456.05
	Greece	1429.45
	Latvia	1364.55
	Netherlands	1234.1
	Brazil	1085.25
	India	853.82
	Australia	587.85
	New Zealand	407.1
	Ukraine	317.55
LOWEST		

EUROPEAN UNION MEMBER STATES PANDEMIC RESILIENCE

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INTRODUCTION

When the first case of COVID-19 was detected in China in December 2019, the world did not set off alarm bells right away. Along with the World Health Organisation (WHO)'s late reporting of the situation in Wuhan, it was also the prevailing global unpreparedness for a crisis of such extensive scope and, more generally, shock that drove the initial slow response. In particular, that concerns healthcare systems whose weaknesses have been dramatically exposed by COVID-19.

Although the pandemic was foreseeable, it was hardly reversible. Thanks to the fast-paced globalisation, especially in recent years, the world has reached an unprecedented level of connectedness. As a result, the virus had spread around the globe fast, and our healthcare systems had been put to an emergency test. Countries that started testing and then vaccinating as soon as possible, and who had sufficient, or close to sufficient, intensive care bed capacity, managed to better contain coronavirus. On the contrary, those that have failed, are experiencing a disaster that will forever remain a dark moment in the history of humanity. At the time of writing, India is struggling to contain the virus, and Ukraine

has vaccinated only 1.96 per cent of its population (Hannah Ritchie et al., 2021).

While most of us have spent the majority of our year in lockdowns, incredible efforts have been made by pharmaceutical companies to develop vaccines, and the anticipation of gradual return to normality coupled with bitter awareness of many more crises ahead inspired us to put together the Pandemic Resilience Index.

The Pandemic Resilience Index aims to provide an overview of global health resilience to pandemics such as coronavirus. Given that there is every reason to expect many more similar outbreaks in the future, it is crucial to reflect on our ability to envisage such threats, recognise them early on, respond without resorting to panic and rushed decision making, avoid shortages, identify and tackle regulatory barriers, and sustain the state of preparedness.

For this paper, health system resilience is defined as follows:

“Health system resilience describes the capacity of a health system to (a) proactively foresee, (b) absorb, and (c) adapt to shocks and structural changes in a way that allows it to (i) sustain

HIGHEST RESILIENCE

required operations, (ii) resume optimal performance as quickly as possible, (iii) transform its structure and functions to strengthen the system, and (possibly) (iv) reduce its vulnerability to similar shocks and structural changes in the future” (EU Expert Group on Health Systems Performance Assessment, 2020).

Research Note: We strive to improve the quality of the underlying data of this index and aim to refine its methodology moving forward. The period of data ranges between 2018 and 2021. In terms of the number of ICUs, we ask the readers to acknowledge difficulties collecting this particular dataset and, to keep in mind, that there might be a minor margin of error. However, this is unlikely to meaningfully affect the final results. Regarding the testing, we calculated the average of new daily tests based on the data provided by Our World in Data. The final dataset also includes the number of ventilators per 100 thousand people, although due to conflicting, or incomplete data, we didn't include it in the final ranking.

FINDINGS

Following the results of our research, we presented the findings for 40 countries as five levels of pandemic resilience (highest, above average, average, below average, and lowest). Please refer to the Appendix for a global ranking.

Israel and the United Arab Emirates showed an outstanding preparedness for the pandemic, and both received significantly higher scores than the US and UK that follow them down the ranking.

The European Union had mainly an average level of resilience, and Ukraine and New Zealand were ranked as least resilient.

Fast vaccination rollout is instrumental in helping the world bring an end to the pandemic, and both the speed of vaccination per se and the time it took respective governments to approve the vaccines and kick off the vaccination campaign played a significant role in our evaluation. All of these factors demonstrate the country's planning abilities, communication (in terms of population attitude to vaccines) effectiveness, and the existence of a regulatory system that was either already agile enough to uphold fast vaccine approval, or was sufficiently flexible to quickly adapt.

Israel is a clear winner when it comes to the speed of vaccinations. As of March 31st, 60.64 per cent of the population of Israel received at least one dose of vaccine which is mainly the reason why Israel heads the Pandemic Resilience Index (Hannah Ritchie et al., 2021). Israel's COVID-vaccination campaign kicked off 17 days later than that of the UK (the first country in the world to authorise Pfizer/BioNTech's COVID-19 vaccine). For comparison, it took Australia, New Zealand, and Ukraine over 80 days more than the UK to do that.

Israel, on the other hand, has neither the highest number of ICU beds per 100k people nor a very high average number of new daily COVID tests per thousand people. However, the number of ventilators available per 100k people in Israel is 40, which is much higher than, for example, Poland, Greece, Latvia, Malta, Ireland.

The United Arab Emirates comes in second mainly because of its vaccination rate. As of March 31st 2021, UAE administered



84 doses of vaccines per 100 people. Regarding the start of the vaccination, the UAE took over the EU by less than 10 days. The UK and the US (53 and 45 doses per 100 people respectively) follow the UAE. The remainder of the countries analysed, are significantly behind. At the same time, the UAE has one of the lowest numbers of ICUs, but with an average of over 8 daily new COVID tests per thousand people, it stands out on testing and is way ahead of countries such as Germany, Czech Republic, Hungary, France, Lithuania, or Italy.

ABOVE-AVERAGE RESILIENCE

Although the UK and the US are substantially behind Israel and the UAE, they were slightly better prepared than Bahrain and some of the EU member states.

The United Kingdom undoubtedly leads European and global vaccination efforts, but the number of ICUs and ventilators available in the UK before the pandemic is average for Europe which only partly explains why the country was severely

hit by the pandemic. For comparison, the United States has some of the highest numbers of these, but it still suffered shocking death rates.

Health resilience is only one of the factors among other variables that have to be considered when it comes to death rates. As stressed by the OECD experts, “higher COVID-19 and/or excess death rates do not necessarily equate to less effective government responses to the virus. Some countries may be more susceptible to COVID-19 due to inherent factors that go beyond policy makers’ responses to the virus” (OECD, 2020). The age-structure of a population and other public health factors play into the severity of cases but are not being assessed by this index.

On testing, the US has been behind the UK, UAE, and Israel. The US Food and Drug Administration (FDA)’s red tape is what hindered the testing efforts in the crucial first weeks of the coronavirus crisis. Clinical labs couldn’t start testing unless they received emergency use authorisation (EUA). Even after the validation of the tests was complete, labs were not able to start testing. The procedure was relaxed as late as February 28th, 2020 (Khazan, 2020).



AVERAGE RESILIENCE

Most EU countries had average levels of resilience except Slovakia, Luxembourg, Austria, Cyprus, Malta, Denmark, and Germany, whose preparation was above average.

Slovakia, for example, stood out because of testing. In November 2020, the country tested two-thirds of its population, and its average daily tests score is highest among all 40 countries, with Cyprus going second (Agence France-Presse in Bratislava, 2020). Germany, on the other hand, has the highest number of ICU beds per 100k people, with Austria and Luxembourg being not far behind, compared to other EU member states.

There is a noticeable variation in terms of the number of critical care beds in the EU. While France and Lithuania have 16.3 and 15.6 per 100 thousand people, Ireland has only 5 and Portugal - 4 per 100 thousand people. The test capacity is more or less the same, with Slovakia, Luxembourg, Cyprus, and Denmark

being clear outliers. Please refer to the Appendix for the level of resilience among the EU member states.

Romania, Bulgaria, Poland, Hungary, and the Netherlands were remarkably behind on testing than the rest of the European Union. The Netherlands had the lowest resilience among EU member states.

In terms of ventilators, according to the data that we have, Italy, Belgium, and France - all severely hit by COVID - had a much lower number of those (between 7 and 8 per 100 thousand people) compared to Germany, Bulgaria, and Lithuania. However, as was stressed earlier, health system resilience is only one of the factors that contributed to high mortality, and Spain, on the contrary, had 29 ventilators per 100k people.

Despite the initial confusion, EU countries managed to pull themselves together and boost their hospital capacity relatively fast. The military in Estonia, France, Hungary, Italy, Romania, Slovenia and Spain were deployed to create field hospitals. General-purpose and other clinical wards were also converted into ICU wards. In Germany, the government incentivised



hospitals to increase and maintain critical care beds through financial bonuses (OECD, 2020).

Once the EU Commission started acting and member states realised that the pandemic was a global problem and that they couldn't isolate themselves from each other - through export bans of masks protective equipment, among others - they started working together. Transfer of patients between countries was one such example of successful cooperation.

However, the vaccination rate is where the EU truly lacks behind Israel, UAE, and the UK. Only 16 per cent of the EU population have received a dose of vaccine, which is only a third of Israel's rate. The EU's procurement bureaucracy slowed down the vaccine rollout. Failure to plan forward and negotiate fast and effectively with vaccine producers resulted in supply and distribution problems.

Russia's relatively high ranking - as average resilience - is mainly due to the early start of its vaccination campaign (only 3 days after the UK). The number of intensive care beds in Russia is also high, but since the data was obtained from the

government website, there is a worry that it is not completely transparent. As we have seen in the case of one of our recent indexes - [European Railway Stations Index 2021](#) - the data and reality often do not match when it comes to Russia.

BELOW AVERAGE RESILIENCE

Brazil, India, and Australia had below-average levels of resilience. Out of all 40 countries analysed, Brazil's vaccination rate is the lowest, although it started vaccinating earlier than New Zealand, Australia, and Ukraine. None of the below-average resilience countries tested enough, but Brazil had some of the highest numbers of critical care beds.

We comment on India's resilience with caution because, as the rest of the world is slowly coming out of the pandemic, the country is currently struggling to get a grip of the virus. Its resilience, as shown by our ranking, is low, and only combined with other variables, such as the new COVID-strain, or government lack of response, could explain why the disaster burst out.

LOWEST RESILIENCE

New Zealand and Ukraine demonstrated the lowest resilience, with Ukraine being the worst prepared country in the world. In the case of New Zealand, its lag can be explained by its location and strict border closures. As a result of very few cases, its health system did not quite face the emergency test of the same gravity.

That was not the case for Ukraine though. As a post-Soviet state trying to make its way into the EU, Ukraine has failed to uphold effective healthcare system reform. Combined with corruption, regulatory barriers to vaccine approvals, and inefficient management, Ukraine had not only failed to recognise the rising rates of the infection early on and act on it, but also to quickly adapt its health system to the needs of the day.

Ukraine's COVID recovery is also hindered by the population's opposition to vaccines. As of December 2020, only 21 per cent of Ukrainians are willing to get a jab while 40 per cent are against it, according to a survey conducted by the National Kharkiv Institute of Sociological Research.

The case of Ukraine is peculiar because, given the findings, one would expect to see an India-like scenario, but it has pulled through. That can partly be due to extremely low testing rates, and, as a result, it is hard to assess the true scope of the pandemic in Ukraine.

CONCLUSION

COVID-19 is, unfortunately, only one of the many health crises of our era. Although there are many factors at play that impact

the damage done by diseases, health resilience plays a crucial role in predicting and mitigating the consequences. We hope that our Index will add to the growing research on the pandemic to help the world be better prepared for future outbreaks.

BEYOND THE INDEX

We also sought to include China, but due to the lack of transparency of the Chinese government, we were unable to find the relevant data, except the number of ICUs per 100 thousand people which is 3.6, and is below Ukraine and India (Phua et al., 2020).

METHODOLOGY

Countries were assigned a specific level of resilience based on how wide the gap was between their score and that of the country further down the list. For example, Germany (lowest in the above-average) scored significantly higher than Czech Republic (highest in the average section). Similarly, Brazil performed notably worse than the Netherlands (lowest in the average).

We assigned equal importance to the vaccination rate and intensive care beds capacity, while testing was given the greatest weight. Countries such as Korea have demonstrated that extensive testing was instrumental in stopping the pandemic. Korea, for instance, put in place drive-through centres together with a network of 96 public and private laboratories.

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ABOUT THE AUTHORS:



Fred Roeder
Managing Director

Fred Roeder (@FredCyrusRoeder) is a German Health Economist and Managing Director of the Consumer Choice Center. He has been consulting governments, non-profits, and the private sector on economic reforms in two dozen countries with a strong focus on emerging markets and post-communist countries. Besides healthcare, his research areas are transportation, telecommunication, and digital technologies. He is a board member of several technology companies in Europe and North America and on advisory boards of several nonprofits and for-profit corporations.



Maria Chaplia
Research Manager

Maria Chaplia (@mchapliaa) is a trained lawyer and economist and Research Manager at the Consumer Choice Center. Maria mainly works in the field of trade, lifestyle regulations, and platform economy. In the past, Maria also worked as a lawyer at the advisory council to the current Ukrainian President Zelensky. Her research and writing have been featured in The Daily Mail, The Independent, Financial Times, Der Spiegel, Huffington Post, Conservative Home, CapX, Spiked, Euractiv, The Parliament Magazine, Cato Institute, the Institute of Economic Affairs, and more. Check out Maria's website to learn more about her work: mariachaplia.com

ABOUT US:



Consumer advocacy group and awarded Think Tank supporting lifestyle freedom, innovation, privacy, science, and consumer choice. The main policy areas we focus on are digital, mobility, lifestyle & consumer goods, and health & science.

The CCC empowers consumers to raise their voice in media, the Internet, and on the streets and facilitates activism towards a more empowered consumer. We represent consumers in over 100 countries across the globe. We monitor closely regulatory trends in Washington, Brussels, Geneva and other hotspots of regulation and inform and activate consumers to fight for #ConsumerChoice.

Acknowledgments:

We would like to thank Alexandre Dabrundashvili for helping us gather the data for this Index.

APPENDIX

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CONSUMER CHOICE CENTER

info@consumerchoicecenter.org
www.consumerchoicecenter.org

700 12th St N.W Suite 700 PMB 94982
Washington, DC 20005