



## COVID-19: Science and Economics

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Hugo Scott-Gall, co-director of research on the Global Equity team, discusses the science of the coronavirus and its global economic impact with Camilla Oxhamre Cruse, a global research analyst who has a Ph.D. in medicine and an M.Sc. in biochemistry, and Olga Bitel, our global strategist.

Camilla and Olga's comments are edited excerpts from our podcast, which you can listen to in full below. (23:48)

[https://content.blubrry.com/the\\_active\\_share/The\\_Active\\_Share\\_COVID\\_19\\_Science\\_and\\_Economics\\_Mix.mp3](https://content.blubrry.com/the_active_share/The_Active_Share_COVID_19_Science_and_Economics_Mix.mp3)

### What do we know about the coronavirus disease, and what more do we need to know?

**Camilla:** This is a new virus, but we have learned a great deal about it over the past couple of months. We know more about the mortality rate. We know more about how the virus interacts with humans—who are more and less susceptible—and that is extremely valuable knowledge when it comes to protecting those who are more vulnerable.

We still need to know how many of us have been infected and what is really driving the disease. I believe we'll learn more about this in the coming months, and that information will bring more clarity to the mortality rate. We're learning along the way.

**What are we seeing that's encouraging with regard to infection rates?**

**Camilla:** The situation is still very difficult in Europe, but it seems to be going in the right direction. Europe seems to be past the peak, with the secular rate of new cases slowing. On an even more positive note, life seems to be slowly returning to normal in China. The number of new cases in China has been close to zero for a long time now, a trend that seems sustainable.

In the United States, the situation is likely to get worse before it gets better. The number of new cases has increased significantly in recent days. This is partly because the country is catching up on testing, so it's important to watch how the number of new cases evolves over the next week or two.

**After accounting for differences between countries across demographic and societal factors, are we seeing a consistent mortality rate?**

**Camilla:** Mortality rates are a bit all over the place at the moment, but the rate is about 0.7% in the countries that have done serology testing. We should learn more about the mortality rate—and about how many of us got infected—over the next couple of months. We have probably only captured the severe, maybe moderate, cases.

We need to do serology testing to find out the true number of infected cases, and then we can calculate the exact infection and mortality rates. When we have all the numbers on the table, we will likely see varying rates across countries, reflecting factors such as differing demographics and healthcare systems.

**Is there evidence that the virus does better in colder temperatures? Should we expect it to move to the Southern Hemisphere for the winter there, and then return north, following the seasons?**

**Camilla:** The infection rate of the virus depends on two things: environmental factors and our behavior. On the environmental front, it's reasonable to think that this virus will display seasonality. We see this with other coronaviruses. It basically boils down to their composition, which makes them sensitive to environmental factors, such as temperature and humidity. However, it's unclear to what extent this particular coronavirus is affected by such factors.

The impact of the environment also depends on the viral load in society: If you have many infected people, the environmental effect will be less. That's why social distancing is such an important tool. We know—from Wuhan in China and from previous pandemics all the way back to the 14th century—that it's highly impactful in reducing the spread of a virus. The infection rate in Wuhan decreased to 0.3 from about 4.0 after one month of social distancing.

**Social distancing is working, but it's coming with substantial economic damage. What does this mean for the economic outlook?**

**Olga:** The immediate economic impact of social distancing and entire regions of the global economy shutting down is that virtually overnight we have found ourselves in what will probably be the deepest recession in modern times. The scale of the decline in economic activity is unprecedented, as is the speed. More than 90% of global gross domestic product (GDP) is affected by lockdowns currently. And with the peak in U.S. cases still to come, the economic impact could worsen in April.

From a regional standpoint, China bore the brunt of the economic impact in the first quarter, with declines in sequential and year-over-year economic activity in the order of 20% to 30%. The shutdowns began in Europe in early to mid-March, with the United States quickly following by late March. The impacts are likely to be staggered in that order, but we see both regions having annualized rates of decline in first-quarter GDP around 3% to 6%. We expect the sequential annualized rates of decline will grow very rapidly in the second quarter to around 20% to 50%.

We see the brunt of the negative impact concentrating in April and early May, followed by a gradual resumption of economic activity. Our base case assumes that the lockdown remains in place through the end of April.

#### **What happens if the economy gradually opens up later than expected?**

**Olga:** The duration of the shutdown is critical. The damage is nonlinear, so the numbers would be progressively worse if the resumption of activity were to be postponed by another month or two. At the same time, the signs in China are encouraging. We have seen the resumption of activity progressing quite nicely. Our base case is for a similar pattern of gradual resumption of activity in Europe in April, with the United States following in early to mid-May.

#### **Are governments' fiscal packages enough, and will the stimulus get to where it's needed most?**

**Olga:** Governments have implemented fiscal support packages measuring 10% to 30% of GDP, and a crucial point is that these packages will be made larger if necessary. This is an unprecedented level of support.

In Europe and the United States, the next critical parts will be how effectively these measures are being communicated to the broader public, how easily they can be implemented and operationalized, and how quickly they can be enforced and proliferated through the economy. Specifically, how easy is it for households to understand what relief they can get? How quickly can they get paychecks? And what relief can they get on their mortgages and other outstanding debt? For small businesses, it's the same idea.

#### **Where are we on the vaccine front, and what would be a likely trajectory to a successful vaccine?**

**Camilla:** The ultimate goal is to develop a vaccine for the broader population. This is a new virus without a vaccine platform ready to be tweaked. Several different candidates are in or are about to start clinical trials, but manufacturing is a huge bottleneck. Thus, we likely won't have a vaccine available for the broader population until fall 2021.

Until then, there are a number of different candidates in development to build the therapeutic drug toolset. They basically fall into three buckets: antivirals that inhibit the production of new viruses in the body; neutralized

antibodies that work directly on the virus to kill it; and existing anti-inflammatory drugs.

At the moment, everything is on the table, and over the coming months we should get a clearer picture of the therapeutic tools we can use. This a global problem with a lot at stake, and everybody is engaged. We see how global the science world is in a situation like this.

**We haven't seen such a sharp economic downturn since wartime. Will the slope of the recovery be equally sharp?**

**Olga:** This is what is being modeled right now, not just by us. We're seeing very similar patterns of recovery being hoped for and estimated. The challenge here is to separate GDP levels and sequential growth rates. The very sharp recovery we are expecting—double-digit quarter-over-quarter sequential GDP growth in the United States and Europe in the second half of 2020—will be unprecedented if it materializes.

However, we are not expecting to return to pre-crisis levels of output for at least two years. Most countries are going to record a recession this year. And the way stimulus support gets implemented will have a critical impact on whether—and how quickly—we can return to pre-crisis output levels.

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