

## Can you take the pulse of the economy?

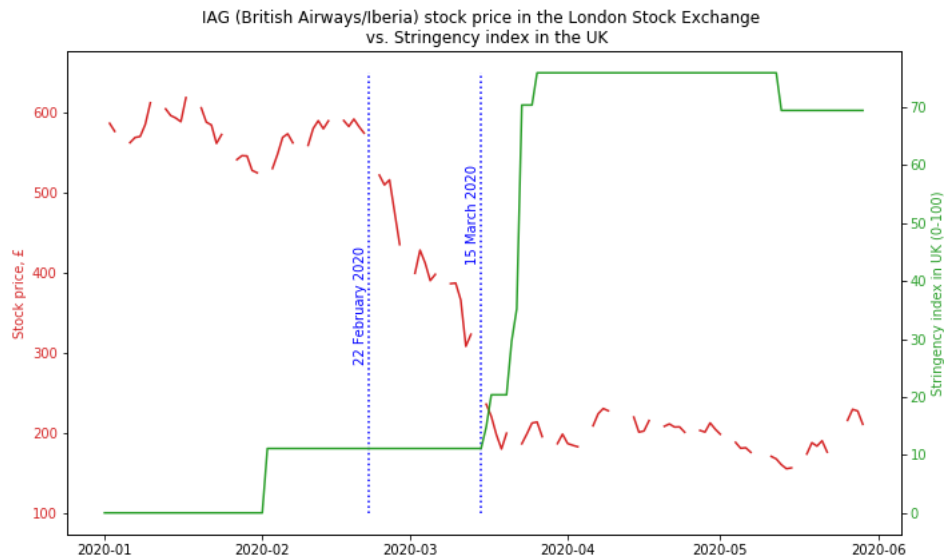
As the Covid-19 pandemic spread throughout the world, many governments had to make the difficult decision of shutting down schools, shops and many other public spaces. From then, the evolution of the pandemic determined the pace at which countries adapted their response, either by enforcing tighter restrictions or by relaxing them.

Now, governments and institutions wonder what impact these restrictions have had on the economy, and at the Emergent Alliance we'd love you to help us measure it. For that, we are asking you the following question: Can you trace the fall in production across several countries and sectors of the economy to announcements of lockdown measures? Or, in other words: How did the economy react when businesses had to close? Were some sectors (for instance accommodation, tourism, etc.) more affected than others? As a consequence of the lockdown measures also the mobility of people also changed. Is there a particular impact on the economy?

Note the importance of the word *when*. By asking the question in these terms, we want you to tell us a story of cause and effect: *when A happened, then B followed*. In our case, our A event would be the announcement of lockdown measures by governments, whilst B would be an economic reaction. We know by experience that this is a tough question, as there is a lot of data out there, many different explanations in the news and it is hard to make sense out of everything. The selection of data that we provide is aimed at narrowing the scope of the question and give you an idea of what we expect you to work with. In the selection of datasets for this challenge you will find:

- Daily series of stock prices of publicly traded companies in different sectors of the economy such as air travel, tour operators, etc., and stock indices (i.e. aggregates of the stock prices of the most important companies of a country).
- Yearly, quarterly and monthly series of industrial production indices for several OECD countries.
- Daily series of the prices of some commodities such as gold, aluminium or brent oil.
- A stringency index collated by the University of Oxford that measures the severity of lockdown in different countries based on several indicators such as economic severity of lockdown, public health measures, etc.
- Google mobility data, which show the changed mobility of people as a consequence of the lockdown measures and might have another impact onto the economy. The daily time series data shows how visits to places, such as grocery stores and parks, are changing in each geographic region, compared to a baseline.

The image below is an example of what the data looks like. In there, we can see the stock price of the IAG conglomerate (which includes airlines such as British Airways and Iberia) and the stringency index for the UK. As you may have noticed, government actions (green) seem to follow stock prices (red), whereas what we are asking is the reverse. Tricky one, right?



You are welcome to use other datasets as well, we are open to hear what you have to say with your own tools!

Good luck!

Author and Tutor:

Álvaro Corrales Cano

Our team:

We are a team of data scientists from IBM's [Data Science & AI Elite Team](#), IBM's Cloud Pak Acceleration Team, and Rolls-Royce's [R2 Data Labs](#) working on *Regional Risk-Pulse Index: forecasting and simulation* within [Emergent Alliance](#). Have a look at our [challenge statement](#)!