Data Sources for
Estimating and Simulating a SIRD Model
of COVID-19 for Many Countries, States, and Cities

Jesús Fernández-Villaverde and Charles I. Jones

Our data are taken from the GitHub repository of Johns Hopkins University Center for Systems Science and Engineering, "Novel Coronavirus COVID-19 (2019-n-CoV) Data Repository." The JHUCSSE reports cumulative death numbers daily for countries, states, counties, and provinces throughout the world. We manipulate this data in three important ways before feeding it into the model. First, on April 15, New York City added more than 3,500 deaths to their counts, increasing the total by more than 43%. We therefore apply this same factor of proportionality (1.4325) to the deaths before April 15 to get a consistent time series for New York City. Second, The Economist, Excess Deaths reports that similar adjustments need to be made in other countries. In particular, vital statistics records in countries including Spain, Italy, England, France, and Sweden suggest that "excess deaths" relative to an average over past years exceed deaths officially attributed to COVID-19 by a large margin. We therefore increase deaths in all non-New York City locations by 33% for all dates.

For the "cities" that we report in the paper and the dashboard, there are two sources. U.S. cities are simply county data from the JHUCSSE. For example, Chicago is Cook County, Illinois, and Detroit is Wayne County, Michigan. In some cases, we include multiple counties: New York City (plus), Atlanta (Fulton and DeKalb), Los Angeles (LA and Orange), and Boston (Suffolk and Middlesex).

For international cities such as London, Paris, Madrid, and Stockholm, we have not found a single data source that reports the data. Instead, we go to key country sources and download the data directly:

- London: https://www.england.nhs.uk/statistics/statistical-work-areas/covid-19-daily-deaths/

- Madrid: https://covid19.isciii.es/

- Italian provinces: https://github.com/pcm-dpc/COVID-19

- Paris (75): https://covid.micka39.info/coronavirus-75

- Paris (Sante de France): https://www.data.gouv.fr/fr/datasets/donnees-hospitalieres-relatives-a-le

- Stockholm: https://c19.se/Sweden/Stockholm

Web interface.   Thanks to Charlie Jones for help with the css/html programming.