Methods Appendix

To select three adequate time series, we constructed 14-day long time series of reported COVID-19 cases for all countries and over the entire time period. 14 days capture meaningful dynamics of infections while not being too long. Subsequently, we kept only time series in which more than zero cases were reported each day. We performed a linear regression on them and only kept time series with a positive slope since an increase of cases will require an *ad hoc* evaluation for mitigation measures opposed to a decrease. To select time series with low, medium and high number, we divided the remaining time series by quantile. Using the sum over the reported cases per time series, we calculated the 25%, 50%, and 75% quantile and picked the ones closest to those quantiles.

Using the three selected time series, we simulated delayed reporting. A delay was simulated by removing all reported cases from the delay period and adding them to the next successful reporting day. We looked at reporting delays from one to six days. For example, a country reported the following case numbers [10,14,22,15,7] from day one to day five. Assuming a two-day delay, the following reported cases [10,14,22,15,7] would turn into [0,0,24,0,0,37]. Cases from the first two-day delay period are reported on the third day (10+14=24). Cases from the third and fourth day are added to the fifth (22+15=37). The cases of the fifth day (7 cases) will appear on day seven. Finally, we calculated the relative difference of the real case counts and the ones caused by the delay per day and for each time series.