Covid-19 Comparables

Patrick Dolinger

21/03/2020

## “Flattening the Curve”

Thanks to socialisation by the press, the concept of flattening the curve has now become common vernacular. The results shown below with data gathered 21 March 2020, reflects the extreme curve Italians are having to deal with as they move forward. The plots contain a line of best fit and reflects the numbers based on per 100k residents of the country. Canada, the United States, and the United Kingdom are also included for comparison.

### Assumptions and / or Observations

* We assume Italy represents an extreme scenario (at least to current date)
* Plotting with line of fit was chosen to show when a decline will occur in new cases and deaths
* Observations illustrate how Canada is approximately two weeks “lag” in Covid-19 comparison to Italy

## Curve Example

Before looking at the number for the target countries for this report, let’s look at the distribution of confirmed cases and deaths in China. China is now on the backside of “curve”. These graphs will give you an estimate of the duration of the Covid-19 virus from initial infections to minimal daily infections.

## `geom\_smooth()` using method = 'loess' and formula 'y ~ x'

ggplotly(pc2)

## `geom\_smooth()` using method = 'loess' and formula 'y ~ x'

### Italy as Comparable

These two charts show Italy as the comparible to Canada, the United States, and the United Kingdom. Visually is easy to see that all of the countries, including Italy are still on an initial climb in the curve.

*Further analysis as to estimating true existing infections vs confirmed need to be done as not everyone exposed is tested.*

ggplotly(p1)

## `geom\_smooth()` using method = 'loess' and formula 'y ~ x'

ggplotly(p2)

## `geom\_smooth()` using method = 'loess' and formula 'y ~ x'

### Without Italy

This will reduce the scale and give a better comparison for Canada, the United States, and the United Kingdom and the involvement for each currently. This gives a better visualisation as to how Canada is doing in comparison. The assumption made here is the earlier isolation measures went into effect, the slower the rise in transmissions. This has been the goal of the strategy of scientists when they refer to “flattening the curve”.

ggplotly(p3)

## `geom\_smooth()` using method = 'loess' and formula 'y ~ x'

ggplotly(p4)

## `geom\_smooth()` using method = 'loess' and formula 'y ~ x'