FOUNDERS ADVISORS
VALUE | LIQUIDITY | GROWTH

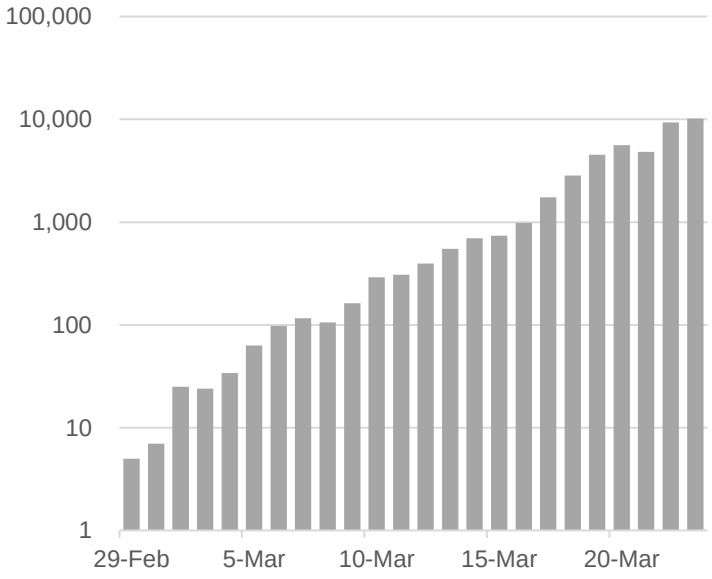
When Will the COVID-19 Clouds Break?

Like most of you, we at Founders are working to get our hands around how long the COVID-19 public health emergency might last. This is an unprecedented event in the era of globalization; thus no one can know how it might play out. That said we are paying great attention to one data point for insight into the shape of the growth curve. A flattened curve, we believe, will be the starting point for rebooting our economy.

The data point of focus is the reproduction rate, also known as R0. R0 is the expected number of cases directly generated from one case in a population where all individuals are susceptible to infection. Simply, the R0 of a virus can measure the intensity of its spread. A reproductive rate greater than 1.0 conveys the virus is still spreading and quantifies the rate of growth, and an R0 less than 1.0 means the spread is declining and will eventually die out.

Below is a chart of the US daily cases and reproductive rate. The United States has struggled to get enough tests out early, so the data is blurry until we get through the backlog of tests. However, based on the number of tests being processed now, we believe this picture will begin to become clearer later this week and into focus next week.

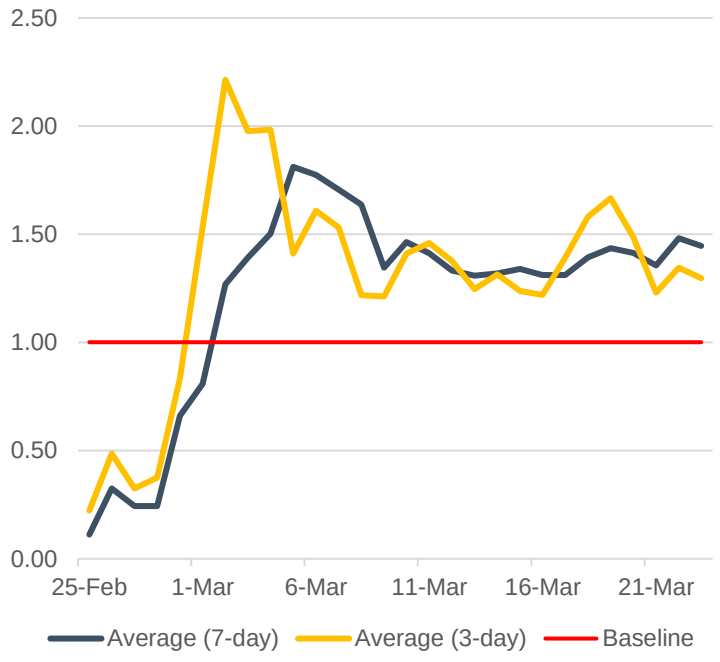
United States New Daily Cases



The data above is presented on a logarithmic scale for clarity, in order to reduce the R0, the daily case number must be less than the previous day

Source: Worldometer

Reproduction Rate (R0): 3 Day & 7 Day Average



Source: Worldometer

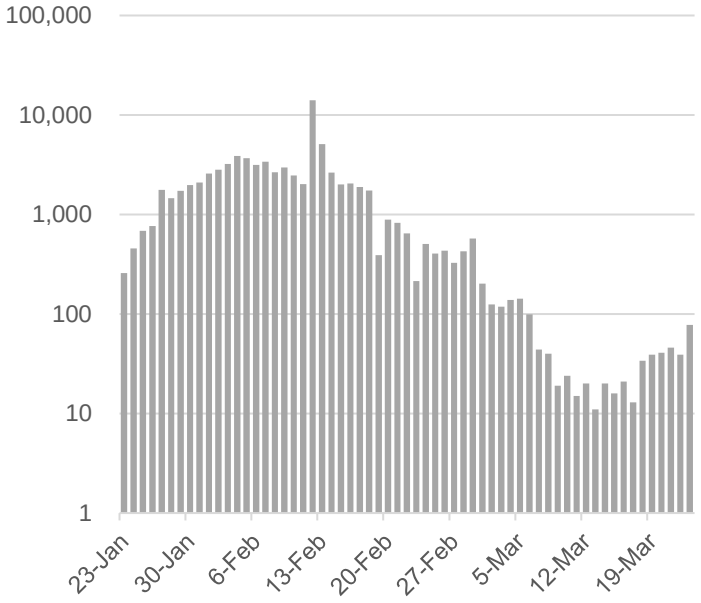
Looking for Guidance – Other Nations Offer Insight on Flattening the Curve

While the U.S. has taken meaningful steps to address the spread of COVID-19 through social distancing and quarantine, there is still the question of how long will it be until we can see the effects of the health policy measures. Given our COVID-19 infection timeline lags a few other nations, we look to China, Italy, and South Korea to see how the reproduction rate has been impacted by their efforts to limit the spread and the severity of COVID-19.

China's Quarantine Effort Results

The first confirmed case of COVID-19 arose from the Wuhan province of China. Since their initial cases and reports, Wuhan and other areas of China have put into place strict quarantines to limit the spread of COVID-19 through person to person interaction. In Wuhan and surrounding areas, a strict quarantine was implemented on January 23rd when the total case count stood at 7,700. New daily cases and reproduction rate peaked in mid-February, and since then has stabilized, hovering between 0.8 and 1.3 on a 7-day trailing average basis during the month of March.

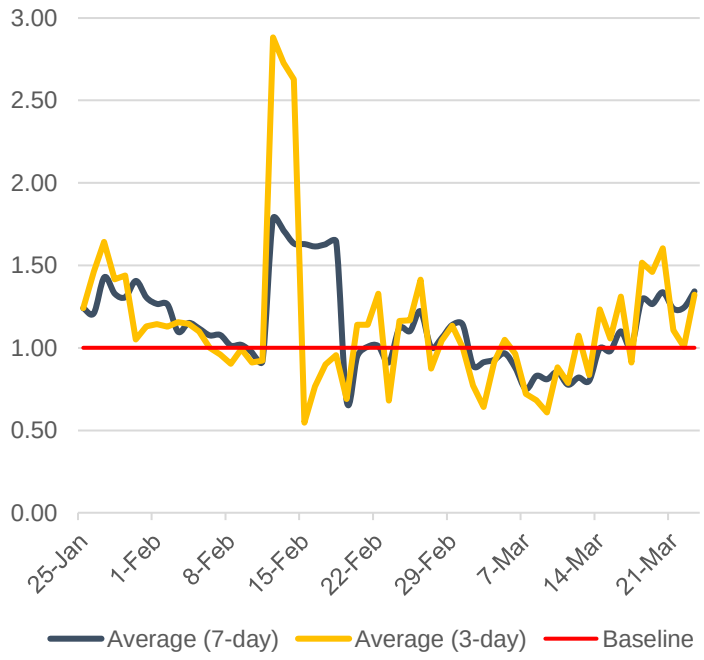
China Daily Cases



The data above is presented on a logarithmic scale for clarity, in order to reduce the R0, the daily case number must be less than the previous day

Source: Worldometer

Reproduction Rate (R0): 3 Day & 7 Day Average



Source: Worldometer

Key Takeaways - China

If you believe China is reporting accurately, their strict quarantine efforts led to a significant decrease in the reproduction rate of COVID-19. China has not reported more than 1,000 new cases per-day nationwide since February 19th, and no more than 100 new cases a day since March 6th. China has effectively "flattened the curve". While China's R0 factor is still hovering around 1, it is important to note that the daily cases have reduced to less than 1% of their peak just over 6 weeks ago and that the country has reported only 1,347 new cases in March.

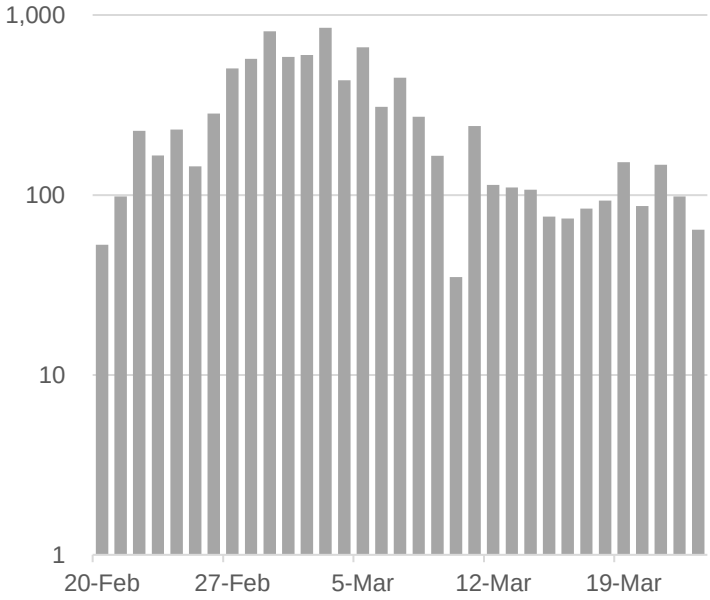
Recent Developments in China

As of Monday, March 23rd, Wuhan is easing the quarantine/ lockdown efforts, which include the ability for people to return to work and less restrictions for public transportation. The National Health Commission of China reported 0 additional domestic cases of COVID-19 with all new cases coming from people traveling back to China. Additionally, Wuhan and the Hubei province has reported 0 additional cases for 5 consecutive days.

South Korea's Rapid Response Stems COVID-19 Transmission

Before seeing an exponential increase in their daily cases of COVID-19, South Korea was able to quickly respond through mass testing, social distancing and other public health efforts. These efforts started on January 11th with the first confirmed case on January 19th. The reproduction rate in South Korea peaked in late February. Since the peak, South Korea has seen a meaningful reduction to the spread of the disease and the R0 has declined to hover at or below 1.1 over the past 10 days. It appears South Korea's efforts slowed the spread of the disease and "flattened the curve" as they have added a total of only 918 new cases in the past 10 days. Additionally, South Korea has not implemented strict quarantine or shut down cities which could provide helpful future guidance for addressing public health concerns while limiting societal and economic disruptions.

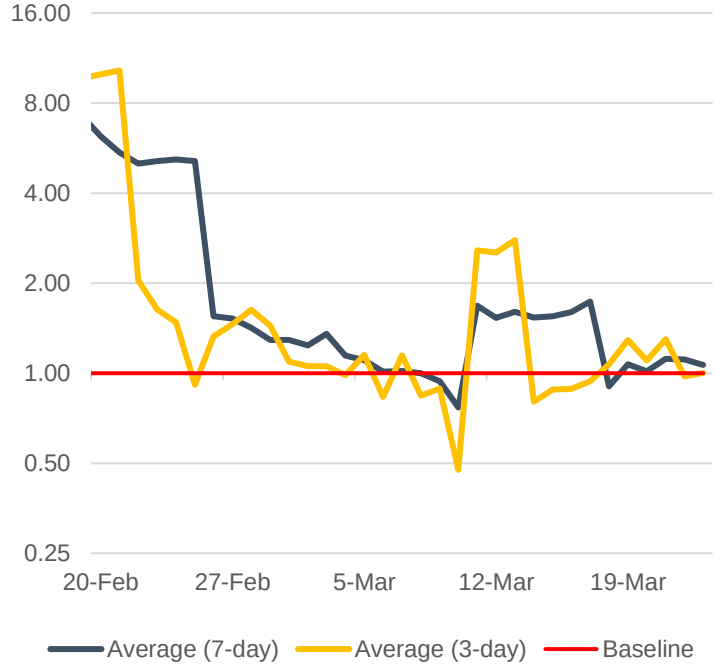
South Korea New Daily Cases



The data above is presented on a logarithmic scale for clarity, in order to reduce the R0, the daily case number must be less than the previous day

Source: Worldometer

Reproduction Rate (R0): 3 Day & 7 Day Average



Source: Worldometer

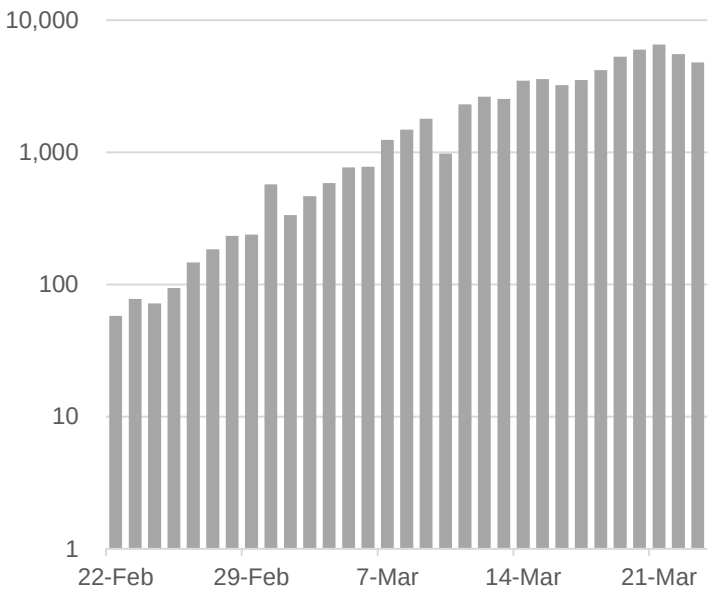
Key Takeaways – South Korea

South Korea was able to stem the growth of the disease and has had an R0 of close to or below 1.0 for most of March. South Korea's mass testing efforts receive the credit for their ability to contain the spread of the virus. This positive result may also have been assisted by public apps using cell phone location data track those that could be infected based on their interactions with at risk individuals or visiting locations where there was greater risk.

Italy a Cause for Concern?

Italy was unfortunately hit harder than other countries regarding COVID-19 and has struggled to slow the spread of the virus. This led to a strict quarantine in 11 northern provinces on February 21st, an expansion to much of northern Italy on March 8th, and finally a national quarantine on March 9th (16 days ago). We are watching Italy closely to see what impact the quarantines have had on the spread of the disease. The R0 for the last two days has been below 1.0. While very promising, this trend needs to continue for several days before declaring a flattening curve.

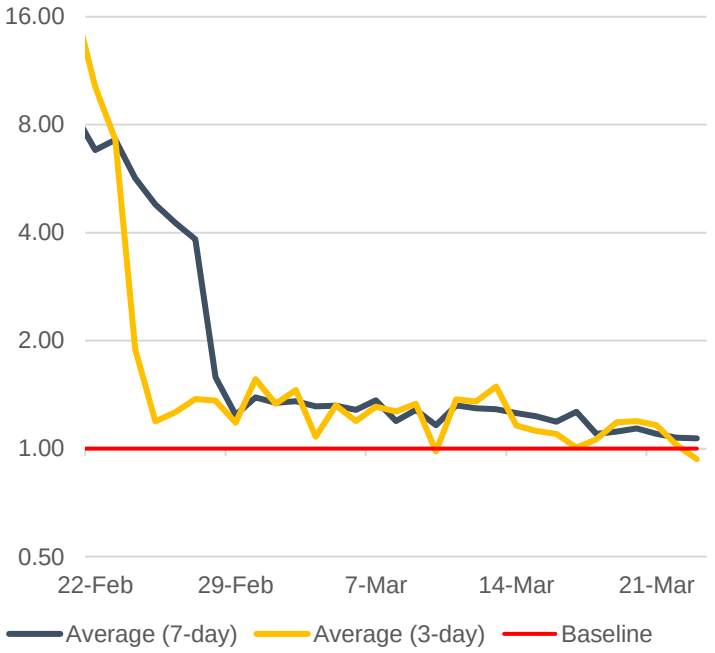
Italy New Daily Cases



The data above is presented on a logarithmic scale for clarity, in order to reduce the R0, the daily case number must be less than the previous day

Source: Worldometer

Reproduction Rate (R0): 3 Day & 7 Day Average



Source: Worldometer

When will the Curve Flatten Out?

Our hope is that based on the results experienced by China and South Korea, the US will see meaningful impact on the curve in about 15 – 21 days post the public health measures put in place in the US. This is of course nuanced depending on the both the speed of action by different states and the speed of behavior change by the general public, which is harder to measure. Our estimation is that the data will become clearer between March 30th and April 6th. We understand that a flattened curve is just the beginning. The COVID-19 public health battle will continue, and our economic activity will not all come back at once. Yet, a little sun coming through the clouds will provide some hope that we're moving in the right direction and that the drastic measures taken are making the expected impact.