From Wuhan to the World: The 2020 Coronavirus Epidemic

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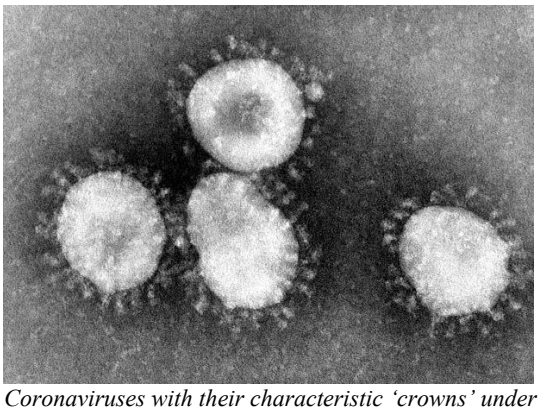
Introduction

The emergence of the Wuhan Coronavirus and the attendant epidemic have been receiving a lot of attention both due to public health concerns and fears the situation could continue to worsen and negatively impact the Chinese and Global economies. Whilst the situation remains extremely fluid, we at Edinburgh Partners thought it would be worthwhile writing a brief note to provide clients with a bit more context on the virus itself, how the epidemic appears to be shaping up versus previous outbreaks, and what the future might hold in terms of investment implications.

What is a Coronavirus?

Coronaviruses are a family of viruses that cause disease in mammals and birds and are so named due to their characteristic crown or halo of protuberances surrounding the main virus capsule when examined under a microscope. These viruses can jump between species with relative ease and are quick mutators. They cause respiratory illness in humans – anything from a common cold-type illness to more severe respiratory infections and pneumonias.



Coronaviruses with their characteristic 'crowns' under The microscope. Photo Credit: CDC Public Health Image Library / Dr. Fred Murphy

What is the State of the Current Coronavirus Outbreak?

The Coronavirus at the centre of the growing 2020 epidemic has been named by the scientists who identified it as 2019-nCoV. It is believed that the virus made the jump, possibly by way of an intermediary species, from bats to humans at an exotic wildlife market in China. There are, so far, about 8,000 known cases of the virus with the vast majority of these localised in and around Wuhan in the Hubei province in China though several cases have now been identified in other parts of China as well as 20 other countries in North America, Europe, Asia, and the Middle East.

Current map of known Coronavirus cases globally. Sources: The Center for Systems Science and Engineering (CSSE) at Johns Hopkins University

Currently, the 2019-nCoV strain has a long incubation period of 10-14 days before symptoms become evident and there is some evidence to suggest that infected individuals can pass on the virus during the incubation phase though this has yet to be confirmed. The illness seems to resemble pneumonia in most patients with fever, breathing difficulty, shortness of breath, and a cough reported most frequently. The virus has claimed about 170 lives, a 2-3% mortality rate, however so far no one outside of China has died. There is currently no vaccine or known cure.

What is Being Done to Curb the Spread of the Virus?

Following severe global criticism over the poor handling of the 2003 SARS outbreak, the Chinese government appears to be working quickly and as efficiently as possible to contain the 2019-nCoV epidemic. This includes essentially closing off much of Hubei province to the rest of China with travel bans, road closures, and the assemblage of two new triage sites to deal specifically with virus patients. Containment efforts in other parts of the country have included the cancellation of many of the festivities associated with Chinese New Year, health screening at travel ports around the country, and apportioning funds and supplies where needed as swiftly as possible. However, a persistent backlog in testing kits for the virus has created the potential for missed diagnoses and a greater opportunity for the 2019-nCoV strain to spread.

Despite China's overall impressive efforts to contain the virus, given its highly infectious nature, case numbers continue to grow swiftly and there are now over 100 known cases spread throughout the rest of the world – including cases where the individuals themselves had not recently been to Hubei province. In response to the threat, many countries are airlifting citizens out of China and subjecting them to quarantine on their home soil. Several flagship carriers such as British Airways have either suspended or restricted air travel to and from mainland China for the foreseeable future. Epidemic containment protocols have sprung into life in most countries throughout the world whether they have known cases of the virus or not. These include screening measures at travel ports, exclusion of mainland Chinese citizens from entering the country, stockpiling of medical supplies, and gathering doctors and experts to be ready to deal with emerging cases.

Aside from containment, there are other measures being taken to attempt to stop the spread of 2019-nCoV. The most important of which is the work to create a vaccine for the viral strain by companies and governmental health organisations all over the world. The early identification and publication of the unique details of strain 2019-nCoV by Chinese scientists have allowed vaccine development to begin very quickly and the main focus of development work is re-working existing genetic technology which will hopefully yield a vaccine candidate more quickly than using traditional methods. However, no vaccine candidate yet exists and clinical trials, though truncated, will undoubtedly have to be done before any vaccine can be rolled out to the general public so any hope of curbing the outbreak through pharmaceutical methods is still some distance off.

How Does 2019-nCoV Compare to Previous Coronavirus Outbreaks?

The two Coronavirus outbreaks most closely related to the 2019-nCoV epidemic are the Chinese SARS epidemic of 2003 and the MERS outbreak which has been affecting parts of the Middle East since 2012. Both outbreaks were more deadly than 2019-nCoV but affected smaller numbers of patients overall.

This could be because, perhaps counterintuitively, it tends to occur that the sicker the patient the fewer people that patient goes on to infect given that, during the infective phase, they are likely confined to their sickbed, in hospital, or have passed away. It could also be that these viruses had a shorter incubation phase, and therefore patient identification was easier, or were simply less infectious than the current 2019-nCoV virus.

SARS affected 8,100 individuals with a mortality rate of just under 10%; MERS has so far infected 2,500 people and killed 34% of them. Both SARS and MERS have an incubation period of about five days which is approximately half that of the 2019-nCoV strain and there was no evidence that either of these two strains could be transmitted during this pre-symptomatic phase.

Despite the best efforts of governments and scientists to contain the outbreak, the 2019-nCoV virus is spreading very quickly and there are already thousands of people infected who have the potential to go on and infect many thousands more people. It should be noted that the larger the epidemic, the greater the chance that the 2019-nCoV has to mutate. This is because the virus inserts itself into the cells of infected individuals where copies of the virus are made and then expelled to infect more people. The more people infected and the more times a virus is replicated, the greater the chance of a mutation happening and affecting the way the virus behaves.

Common mutations include increased strength of the virus, increased infectivity, and increased lethality. As mentioned above with relation to SARS and MERS, an increase in lethality or strength of the virus could slow the spread of the virus but this cannot be counted upon. Obviously, a more infectious or more virulent virus means a potentially larger impact on governmental budgets, economic output, and, most importantly, the health of the general public.

However, it should be noted that mutations can work both ways. Whilst public health measures like disease surveillance, quick patient identification, and good tracing of other individuals in contact with a patient are in large part thought to have brought the SARS outbreak under control, there is some evidence to suggest that by the end of the outbreak SARS had mutated to become slightly less infectious and virulent than the original virus. Even a subtle mutation like this can have a significant effect on both curbing the spread of the virus and decreasing mortality rates.

What Does the Future Hold?

Whilst we fully expect the number of new cases to both continue to increase swiftly over the coming weeks and spread geographically, one potentially positive aspect of this particular Coronavirus outbreak is that the first cases were discovered in late December and patient numbers began ramping in late January. This is relatively late in the traditional 'flu season' for China and much of the rest of the world which runs from October to March with a peak in cases most often seen in February. Within the next few months, the weather will start to warm as we in the Northern hemisphere move towards Spring which should bring a significant slowing in the number of new cases. This is due to the method many cold and flu viruses use for transmission – floating through the air in droplets released from the respiratory tracts of infected individuals. The cold weather and concomitant drier air help these droplets stay in the air longer, thereby increasing their chances of contacting an uninfected individual. In warmer weather, the droplets encasing the virus pick up water in humid air, increase in mass, and fall as they become too heavy to remain airborne.

Given that a vaccine for the virus is still months, and potentially years away, and the effect of governmental and corporate attempts to rein in the outbreak are still unknown, it may be that the changing of the seasons is the greatest chance for successfully slowing the epidemic that exists. We may simply have to wait it out and hope the virus does not mutate in any significantly detrimental way.

What are the Investment Implications of the 2019-nCoV Outbreak?

Given the increasing number of sick individuals, the drastically reduced New Year celebrations, and the tight controls on movement in many parts of the country, there is a real chance that the 2019-nCoV could negatively impact the Chinese economy in the short term and curtail the emerging recovery in the region. If the outbreak continues at pace and patient numbers grown, an increasing sick workforce could create supply shortages in components for several industries such as semiconductors, technology, autos, etc. If the outbreak impacts countries outside of China in a meaningful way, the effects on supply chains and the macroeconomic environment will likely be more severe. Whilst this may cause ructions in the market in the short-term, it may provide opportunities to purchase good quality industrial or cyclical names at depressed long-term valuations.

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ADDENDUM 31 JANUARY 2020: Last night the World Health Organisation (WHO) declared the 2019-nCoV outbreak a Public Health Emergency of International Concern. The announcement came on the heels of news that worldwide cases of the virus had risen to nearly 10,000, with 213 deaths and the first cases of human-to-human spread of the virus outside of China were confirmed. The WHO declares Public Health Emergencies when there is "an extraordinary event which is determined to constitute a public health risk to other states through the international spread of disease" and has done so five times in the recent past: swine flu in 2009; Polio in 2014; Zika in 2016; and Ebola in 2014 and 2019. The declaration of a Public Health Emergency compels nations to participate in a coordinated international response to the virus outbreak through surveillance to monitor the spread of disease, prompt patient identification, thorough monitoring of individuals with whom suspected or confirmed patients had contact, and compulsory reporting of 2019-nCoV cases and data to the WHO. At this time, nations may also voluntarily restrict trade and travel; this is as much to contain the outbreaks within the countries already affected as it is an attempt to curb the spread to other countries – especially those low- or-middle income nations which may be ill-equipped to handle an outbreak of this magnitude. The declaration of the Public Health Emergency means that there is the possibility of a higher impact on international trade and travel until such time as the outbreak is contained.

About the Author

Lauran Halpin MSc, BA: Lauran Joined EP in November 2013 from Baillie Gifford with 7 years of investment experience. Lauran Joined Baillie Gifford in September 2007 as a graduate trainee, where she undertook a three year rotational programme spent analysing European and North American Equities as well as Corporate Bonds. In June 2010, she was made Baillie Gifford's global Healthcare analyst. Whilst at Baillie Gifford, she managed the Glenfinlas Global Healthcare fund. The fund was an unconstrained, global best ideas in Healthcare fund.
Lauran has an MSc. in Ecological Economics from University of Edinburgh 2005 and BS. in Biology from Davidson College (North Carolina, USA) 2003.

Lauran is responsible for researching the global Healthcare and Automotive sectors and assisting in the management of client portfolios.

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