



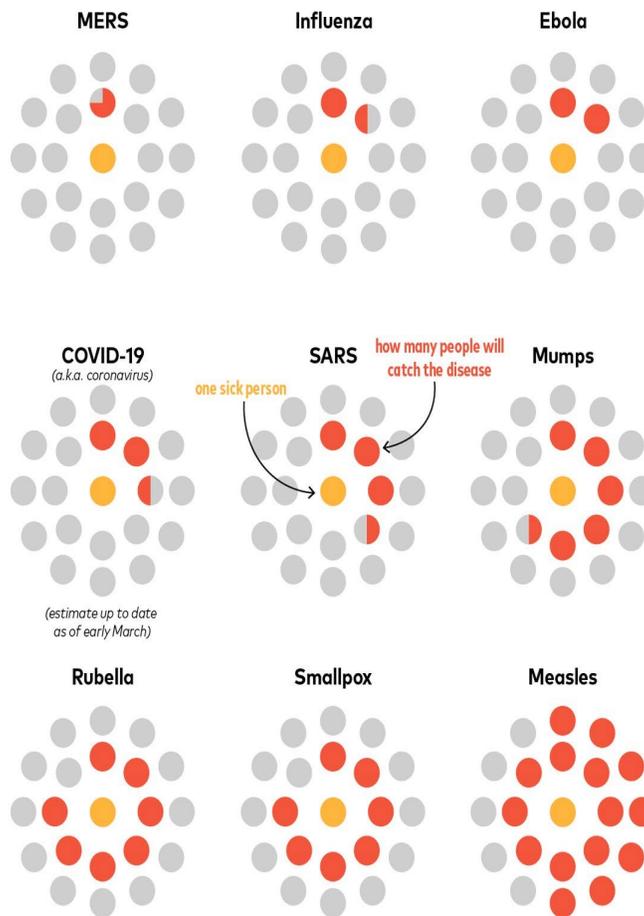
Market Commentary: COVID Timeline and Implications

October 2020

The good news is that 2020 is almost over. The bad news is that calendars are a human convention and so unfortunately, we will be waking up on January 1, 2021 with COVID intact.

Therefore, it made sense for us, especially given the recent spike, to spend some time updating our understanding and views of COVID as well as its effects on our portfolios.

The path of COVID is material to performance of the economy and financial markets. When the virus hit our shores it knocked our economy to its knees, resulting in a drop of 35% in equity markets. We have since fought back both medically and economically. The government approved a \$2.2 trillion “bailout” of the economy which is most likely a material reason (along with a valuation “snap back”, fixing of liquidity issues within fixed income markets and so on) for the pop back in equity markets. We will almost definitely receive a further economic bail-out post elections, regardless of who wins.



POP
SCI

The left image illustrates how many people are expected to catch the disease on average from each person who is infected. It assumes no mitigating activities (e.g., wearing a mask, social distancing), no vaccine, and no herd immunity. This is a constant number representing the basic reproduction rate of the disease and is known as R_0 (pronounced “r nought”). The R_0 for COVID is 2.5. For Measles it is 15. R_t meanwhile reflects the real time ($t = \text{time}$) reproduction rate of the virus. It takes into account mitigating activities. We care about both – how catchy the disease is and measuring how successful we are in maintaining low infection rates.



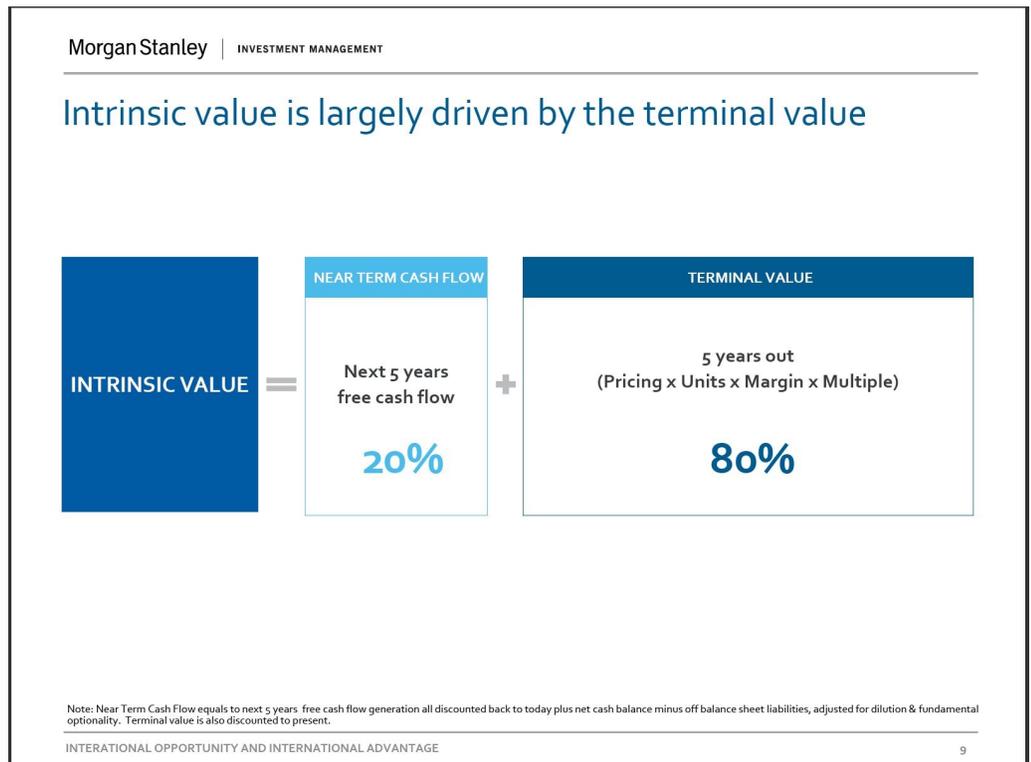
In the medical arena, we have made material gains in care and seemingly continue to make strong headway in both therapeutics and vaccines. We also know what to do to slow the virus.

I live in New York City, which is considered a “fast city” and given our reliance on social media and the like, patience does not seem to be a virtue any longer - or something we do well. However, our job at Fountainhead is to be really patient given we are managing to retirement or next generation, which is typically measured in decades. Furthermore, our job is to be analytical and remove noise from the equation. In the very mature asset management industry, there is simply a ton of noise given their desire to sell us, and you, investment strategies. Following is our attempt to make sense of the path of COVID along with some of what we are following.

In our February Market Commentary we provided context to company valuations which was further advanced in our Explorations from the first quarter. The skinny is that as long as we believe a company will remain a going concern post COVID, then the vast majority of valuation comes from future value, defined as Terminal Value in the below graphic:

The big question then is how long COVID will have a negative effect on general growth - for example, a dearth of cash / earnings can cripple a company in other ways or, at the least, push out anticipated growth which would have a ripple effect and affect terminal value.

Additionally, it is hard to gather from general media where we are on both therapeutics and vaccines. This is, of course, exacerbated by social media, the goal of which is capturing user attention. That goal is misaligned with user objectives of obtaining useful and accurate information. (Perhaps regular media outlets just want to capture attention as well, but algorithms do not have morals and are simply way more efficient at keeping us transfixed to our screens...)





The Virus - Perceived Positives and Negatives Based on Our Understanding

COVID is a virus. Other examples of a virus are Chicken Pox, Measles and the Flu.

Positives

- Vaccine highly likely
- Therapeutics and care will continue to increase
- High likelihood that virus becomes less lethal on its own
- R_0 of 2.5 (note first graphic) can be lowered by social distancing, masks and other efforts (e.g., vaccines) - which hopefully results in a R_t of less than 1
- R_0 has a direct correlation with herd immunity, meaning we need less of the population to take the vaccine and/or have had the virus

Negatives

- Issues of trust in taking a vaccine
- Fully effective therapeutics unlikely
- It is still relatively lethal with only an estimated 10% of the US having had it
- Unfortunate politicization and simple exhaustion have stopped us from acting as a cohesive, efficient community in taking this pandemic on
- Note first bullet

Vaccine Timeline and Safety

My children will have taken close to 20 vaccines by the time they enter college. There is a segment of our community (I am generously and optimistically defining the US as a community) that is unable to take a vaccine due to health complications. Like masks, taking a vaccine does not only help one's self, it also helps others. Due to unfortunate misinformation, a larger portion of our community as compared to the recent past is not taking the measles vaccine which has reintroduced this terrible and extremely contagious disease into pockets of this country.

There is currently concern being voiced that given the speed, politicization and general newness of the disease and vaccine that a significant portion of the population will refuse to take it. This is perhaps enhanced in instances where the vaccine delivery mechanism has not been tested prior like in the case of Moderna's candidate (note graphic below). Furthermore, it is easy to see misinformation campaigns latching on to the fact that (1) not all vaccines are fully effective (e.g., the flu vaccine), (2) sometimes people become sick when vaccinated and (3) if not enough people take the vaccine others will still get it (in which case the claim will be it is ineffective) further diminishing our hopes of getting past this pandemic.





The terminal graphic on pg. 2 is from Morgan Stanley, the next piece of data is from JP Morgan. In our independent seat we have the luxury of pulling information from just about everyone in the asset management industry. We take as much advantage of this for your (and our) benefit. Michael Cembalest has put out amazing research from the beginning, available at: <https://www.jpmorgan.com/securities/insights/coronavirus-research>.

As can be noted on right, the first four types of vaccine approaches have been used prior. In all cases, the expectation (at least in the US) is that these vaccines will be tested rigorously prior to administering them to the general public.

| Type | Method of provoking antibody response to SARS-CoV-2 | Drug companies | Existing licensed vaccines |
|------|---|--------------------------------------|---|
| 1 | A live but weakened coronavirus that will infect cells and cause them to make viral proteins | Codagenix | Measles, yellow fever, mumps, smallpox, polio |
| 2 | Coronavirus proteins themselves, produced industrially in outside cell cultures, which will be recognized as foreign matter by the immune system | GlaxoSmithKline/Sanofi, Novavax* | Tetanus, pertussis, flu, shingles |
| 3 | A "killed" coronavirus that will get recognized as foreign matter by the immune system | Sinovac/Dynavax, SinoPharm | Polio (dev countries) |
| 4 | A different virus (human or ape adenovirus, measles, etc) that is engineered to include genetic components coding for the SARS-CoV-2 spike proteins, which causes the body to then produce them | CanSino, Oxford, J&J**, Merck/Themis | Ebola |
| 5*** | DNA or RNA that will be taken up by cells and will cause them to make coronavirus proteins | Moderna, Inovio, BioNTech/Pfizer | |

Expectations are for a vaccine to be ready in the first quarter of 2021. We already have the last mile ready - doctor's offices, drug stores and the like already administer vaccines. The other impediment is manufacturing and delivery. It is likely that we will have more than one vaccine which may assist in the manufacturing and distribution in an expedited manner. However, it is hard to see how we are done prior to the middle of 2021 at the earliest.

Two other sites we find helpful in understanding progress are:

- <https://covid19.trackvaccines.org/vaccines/>
- <https://www.covid-19vaccinetracker.org/>

Ultimately, on the positive side, we do expect another bail-out of the economy, material gains in care and therapeutics, and a vaccine in "short order." But that still means a rather bleak winter in the best-case scenario with a disease/ epidemic that is not even one year old. All of which means there are still a number of unknowns. We will continue to attempt to unravel the effects both short term and long term of both the virus and our steps to counteract it.

Stay safe.

IMPORTANT DISCLOSURE: The information contained in this report is informational and intended solely to provide educational content that we find relevant and interesting to clients of Fountainhead. All shared thought represents our opinions and is based on sources we believe to be reliable. Therefore, nothing in this letter should be construed as investment advice; we provide advice on an individualized basis only after understanding your own circumstances and needs.