

ENDOWMENT MANAGEMENT

March 2020

We'd like to share our thoughts on the COVID-19 virus (commonly referred to as the coronavirus) and how we are approaching this worldwide development. Our overall view is that investors should stay focused on their investment policy through market crises. In the following sections, we summarize our views and steps long-term investors can take.

Coronavirus Update

Based on industry discussions and research from what we consider to be reliable sources, our understanding is that the COVID-19 virus outbreak has some fundamental characteristics:

- Like past virus epidemics such as SARS (Severe Acute Respiratory Syndrome) and MERS (Middle East Respiratory Syndrome), COVID-19 likely came from animal-to-human contact and evolved to human-to-human transfer. Both the SARS and MERS epidemics lasted less than one year, ending in 2003 and 2013, respectively. However, occasional isolated cases of both viruses still occur, as is typical with epidemic diseases.
- The coronavirus appears to be transmitted in ways that are similar to the flu virus the virus is spread via micro-droplets from infected people sneezing or coughing. The droplets then settle onto surfaces where they are transmitted to others' hands and then to mucus membranes by touching your eyes or nose. This makes the virus highly contagious, but precautions such as frequent hand-washing and avoiding touching your face can help.
- Although challenging to measure the denominator, the virus's mortality rate has been reported at 1-2%, which is higher than that of the flu (0.1-0.2%).
- Mortality is highest among the elderly, unlike the flu, which hits both the very young and the elderly.
- Aggressive containment measures (such as the quarantines in China) seem to work. Recent reports
 from Wuhan indicate that hospital discharges are increasing while hospital admissions are
 decreasing.
- Studies suggest that the reason flu is seasonal is because the flu virus can survive on surfaces longer
 when conditions are cold and dry rather than warm and wet. It may be that COVID-19 is also
 seasonal.
- Seasonality may buy time for the global healthcare network. If COVID-19 behaves like the Spanish
 Flu pandemic, which was detected in the spring of 1918 but only became a real pandemic in the fall,
 the spread of COVID-19 could stop in the next few weeks only to restart later in the year. Unlike in
 1918, a global healthcare network exists (albeit with still major deficiencies) and together with the
 pharmaceutical industry, may be able to develop and distribute a vaccine to blunt the impact.
- Additionally, the populace of the world is much more informed about prevention techniques, such
 as hand-washing and covering coughs, that were not commonly known or understood during the
 Spanish Flu outbreak. People today also have the ability to instantly disseminate information around
 the globe, helping prevention and containment efforts.

 Whether the impact of COVID-19 is moderate or severe, it will have an eventual end, just as all past epidemics have ended.

Past Epidemics and Stock Market Effects

• Stock markets are leading indicators. Markets can rebound quickly and strongly after these events (or when an inflection point is sensed), as the following table shows for the S&P 500 Index:

Epidemic	Month end	6-month % change of S&P	12-month % change of S&P
HIV/AIDS	June 1981	-0.3	-16.5
Pneumonic plague	September 1994	8.2	26.3
SARS	April 2003	14.59	20.76
Avian flu	June 2006	11.66	18.36
Dengue Fever	September 2006	6.36	14.29
Swine flu	April 2009	18.72	35.96
Cholera	November 2010	13.95	5.63
MERS	May 2013	10.74	17.96
Ebola	March 2014	5.34	10.44
Measles/Rubeola	December 2014	0.20	-0.73
Zika	January 2016	12.03	17.45
Measles/Rubeola	June 2019	9.82%	N/A
			-Source: Dow Jones Market Data

How "This Time Could be Different"

- COVID-19 could be more widespread and longer in duration than some past events we don't yet know. Reports indicate that the sickness is initially mild or even symptom-free and can then quickly spread. It seems safe to assume that it will eventually impact every U.S. state and every country, to some degree.
- We live in a connected world, with large populations of mobile people. It's difficult to know how many people are carrying the disease and haven't been tested.
- The outbreak could trigger unexpected political/nationalistic/protectionist responses that harm global growth or the global response effort.
- Part of the "fear factor" is the "this time it's different" mentality. However, past experiences can
 counter the fear of the unknown and should help inform one's long-term view, including the
 rationale behind existing investment policy.

Where Are We Now

- Global stocks recently had a "market correction," defined as a decline of 10% or more. For context, between 1980 and 2018, the U.S. stock market experienced 37 corrections, during which the S&P 500 fell an average of 15.6% (source: Investopedia). This averages roughly one correction per year. From experience, a correction by itself should not rattle the judgement of long-term investors.
- This is a health event but has become a financial event. Instead of being a hit on demand (prior to the start, the world had sufficient consumer and corporate demand), the outbreak is creating supply shocks with corporate suppliers and supply chains facing disruptions.
- Depending on the industry, some corporate earnings will be damaged, but there could be some beneficiaries.

- Recession risk is now higher than it was even four weeks ago. Current research suggests that if a regional or global recession were to a occur due to COVID-19, it may not be long-lasting.
- Economically, some parts of the world are more fragile than others (e.g., Europe, the Middle East, Africa) and were on lower footings prior to the event. Thus, different areas of the world may react or recover differently.
- By the nature of its governmental and financial resources, China has enormous fiscal and monetary response capabilities.
- Central bankers across the world can cut interest rates and perform other monetary stimulus
 measures to provide corporations and consumers a degree of relief. Governments can also take fiscal
 measures, whether via immediate tax credits, focused spending or special initiatives. For example,
 Hong Kong recently did "helicopter money" residents each received HK\$10,000 in relief.
- The U.S. consumer is currently employed; unemployment is below 4%, and about 70% of the U.S. economy is based on consumer spending. So long as this is the case, the U.S. economy should be resilient and could continue to grow at about 2% (give or take). Thus, it is reasonable that the U.S. could avoid a severe recession.
- Global inflation is low relative to history, and arguably could go lower in the near term with this event. U.S inflation is slightly below the Fed's target, thus giving it some room to act.
- Low inflation and low interest rates are a benefit to consumers and corporations both can refinance long-term debt.
- While viruses don't care about low interest rates and stimulus efforts, coordinated efforts can buy time for potential vaccines, healthcare responses and supply-side "fixes" for the world.

What Should Investors Do?

- Review your standing investment policy. Is the Investment Policy Statement valid through market
 crises and even panics? Have circumstances changed long-term spending goals and growth
 objectives? Investment Policy Statements are created for a long-term view and are intended to help
 take the emotion out of sharp market declines or gains.
- **Be mindful of your long-term investment horizon.** Your investment horizon is likely beyond the reasonable time span of this event. In our view, with most organizations/families having a longer than 10-year investment horizon, no policy changes are needed in response to this event.
- Don't try to time the market. It is very difficult and arguably impossible to "time" stock and bond markets.
- Maintain meaningful equity exposure. For long-term investors, being an owner (shareholder) versus a lender (bondholder) over history has proven to be the way to grow assets and meet return objectives in real terms.
 - o Food for thought... stocks after a 10% correction are arguably less risky than they were beforehand, since they have just been priced 10% lower. The investment managers we use are monitoring their markets for both risk management and attractively priced investments.
 - Many U.S. and other sovereign bond prices are at all-time highs. (For bonds, prices and yields move inversely – thus record-low bond yields equate to record-high prices.) So, these bonds are priced at the most expensive levels ever.
- Maintain private equity, private real estate and other private market assets. They provide a
 "smoother ride" with accounting/valuation lags and different types of return streams. They also can
 provide a return premium to public stocks (with good manager selection) and as private value is
 "realized."

• **Rebalance your portfolio**. Disciplined rebalancing (within policy and strategy targets) across asset classes can provide a return "free lunch" (see our letter of January 2019 on this topic or request a copy from us).

At Mangham, in addition to reviewing portfolios for rebalancing opportunities, we continue to research differentiated private and public market managers to benefit portfolios. Additionally, organizationally, we have in place business continuity and preparedness plans we are focused on, as described below.

Mangham Preparedness

- Mangham's Business Continuity Plan has been developed to provide for immediate, accurate and
 measured response to various emergency situations and to minimize the impact upon the safety and
 wellbeing of our team. We have established alternate office locations in the event of a business
 disruption. In addition, our infrastructure gives staff the ability to work from home. We periodically
 test this plan.
- In addition, preparing for the worst (but hoping for the best), we have divided the firm into two teams. If necessary, one team will be allowed to come to the office while the other will work remotely. The intention is to reduce the potential for cross-contamination.
- As part of our operational due diligence, we conduct periodic assessments of our custodians, banks, fund administrator, and underlying manager business continuity plans to ensure that they have a comprehensive plan in place.
- Overall, portfolios that have a good degree of diversification in place may be "fine" for this particular event be it through a broad mix of equities, bonds, cash and diversifying strategies, apart from only stocks. We at Mangham are keeping abreast of the situation and looking for unexpected investment opportunities and risks; however, we do not anticipate employing any large-scale, market-timing shifts. While the temptation can be great, experience indicates that markets are always forward-looking and digest new information very quickly. It's possible that as soon as good news comes out regarding the epidemic (e.g. slowing cases in China) the market will react, and any gains from having avoided some of the declines will be quickly overwhelmed by missing the rebound.

In summary, we believe that investors should stick with their stated long-term investment policies throughout this event. If you do not have an investment policy in place, we'd be happy to talk. Thoughtful, long-horizon investors typically form a written Investment Policy Statement, tailored to their specific goals and risk tolerances. For investors that seek to grow wealth in perpetuity, making an abrupt and meaningful move into cash (and missing an equity rebound) can represent a permanent impairment of capital. Conversely, riding through a market decline and participating in a subsequent rebound may be wise, even if temporarily painful. As always, please feel free to call us should you wish to discuss.

Sincerely,		
The Mano	ham Associ	ates Team

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