

# Investor Quarterly

## Our Big Little Short

### A Black Swan Event, Record Volatility & Global Asset Price Collapse

Although the 1957-58 pandemic is the closest historical analog to the events that occurred this quarter, three separate but related shocks — an unprecedented global equity sell-off, an oil price war, and a liquidity crisis in bond markets — created a “black swan” event. This forced central banks, govt policy makers and companies to enact unprecedented measures to contain the damage of Covid-19.

### Rockingstone Performance

We were fortunate to have shorted the market in size on February 21st, in addition to select asset sales (ANTM, DIS, ETM, LYFT, RRR). These actions led to superior relative outperformance (-7.9%) in 1Q20. Our historical annualized returns include: 1-yr (+1.5%), 3-yr (+5.5%), 5-yr (+7.4%), 10-yr (+9.3%).

### 1Q20 in Review

Most markets moved steadily upward through the first half of the first quarter until late February when worries over SARS-CoV-2 led to a collapse in global risk assets. Even gold, which is typically a safe haven, ultimately succumbed to liquidation as investors fled to cash and cash equivalents.

### Planning for a 6 to 12-month Slog

Based on our analysis of past novel pandemics, specifically the Equine Flu of 1872-73 and the Asian Flu of 1957-58, our current expectation is for a “W-shaped” recovery as we expect several “waves” of the virus to impede a rapid return to normalcy; hence we expect markets to be range-bound at best.

### S&P500 Forecast & Other Key Indicators

Our new forecasts include: EPS (2020/2021: \$125/\$160), S&P500 (2020 year end = 2,850), GDP (2020/2021: -10.5%/+8.4%), Gold (\$1,850), Oil (\$20), 10-yr US Bond Yield (0.8%), Inflation (-0.7%), 5-yr expected CAGR (US Large Cap +7.6%, Developed +4.4%, Emerging +10.8%).



### About Us

Rockingstone Advisors LLC is a boutique asset management and corporate advisory firm co-managed by Brandt Sakakeeny and Eric Katzman, CFA.

As an SEC-registered investment advisor, we provide multi-asset investment strategies to individuals, families and small institutions through separate accounts.

Our investment strategies attempt to capitalize on pricing inefficiencies across broad asset classes and then across individual securities, with a strong emphasis on fundamental research and analysis.

Thank you for your interest. You can find more information (and some interesting articles) at:

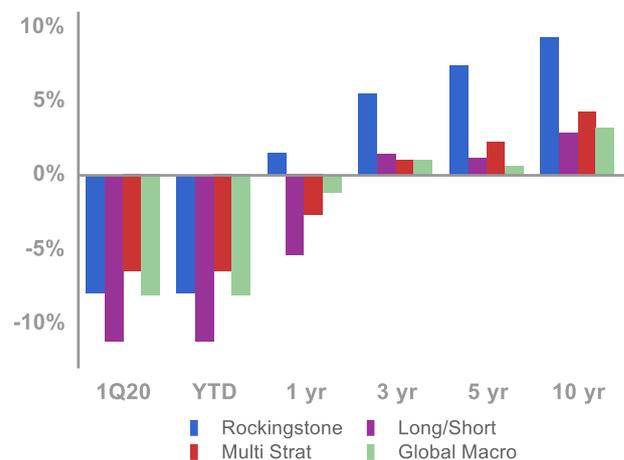
[www.rockingstoneadvisors.com](http://www.rockingstoneadvisors.com)

Figure 1: 1Q20 Asset Class Performance<sup>i</sup>



Source: FactSet

Figure 2: Rockingstone: 1Q20 & Historical Annualized Returns<sup>ii</sup>



Source: Rockingstone Advisors, Morningstar, DJ Credit Suisse Indices

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# A Quarter Like No Other

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## Anatomy of a sell-off

After a muted start, what made the first quarter so treacherous for investors was that there were really three crises in one: a collapse in global equity prices, a demand shock and price war among the world's largest oil producing countries and a liquidity crisis in the bond market exacerbated by a massive shortage of US dollars overseas. All three were inter-related, but the dynamics in each asset class helped to force down prices in other asset classes in a vicious cycle of accelerating declines unprecedented in its speed and severity.

Correlations always rise during periods of stress, but the moves across global financial markets were so swift and brutal that there was no place for investors to hide. When the economic impact of SARS-CoV-2 became clear, all stocks, but especially industries such as travel, leisure and industrials were sold irrespective of price. Oil, which generally had been over-supplied for the past few years relative to demand and whose price had been trending lower through the quarter, fell precipitously on news that Saudi Arabia was initiating a price war with the intention of bankrupting higher cost producers (US shale, Russia).

Because energy is capital intensive to produce, it accounts for a disproportionate share of debt outstanding, especially high yield debt (for example, energy represents about 3% of the S&P 500 but more than 10% of high yield debt outstanding). Unfortunately, leveraged balance sheets are a characteristic shared by several of the industries most exposed to the demand shock created by SARS-CoV-2: airlines, hotels, cruise ships, rental car companies, casinos, and sports arenas, among others.

As bonds for these industries were liquidated at any price, that liquidation moved rapidly from the high yield market to the investment grade market, then to asset-backed securities (bonds securitized by credit cards, mortgages and auto loans) and then to municipal bonds. The liquidation in bonds was so violent that pricing models designed to value bonds produced wildly different net asset values for ETFs and mutual funds holding similar bonds.

Because debt is senior to equity (meaning if a company defaults and fails to pay its interest, bond holders get paid ahead of equity holders in a liquidation or bankruptcy), equity prices often take their lead from bond prices. As bond prices fell dramatically, equity prices had to fall accordingly. Meanwhile, companies drew down their entire credit lines; REPO rates, already under stress from a chronic shortage of US dollars overseas (estimated at \$12.8 trillion) rose rapidly, and the currency markets were in disarray in a mad dash for US dollar liquidity.

This destructive cycle continued until the Federal Reserve announced a series of measures, each more aggressive than the next, to restore liquidity and proper functioning of the markets. While the Fed's early actions (Fed funds rate cut) were initially met with skepticism by investors, the amount of fire power aimed at the crisis continued to grow until it was impossible to ignore. The Fed's quick actions, combined with a huge stimulus/relief plan out of Congress, seemed to provide the confidence necessary to stabilize global bond and currency markets, which then in turn stabilized global equity markets. However, global energy markets continue to be in disarray.

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## Portfolio positioning: how Rockingstone managed through the crisis

We were fully invested during the first several weeks of 2020. At that time, we were generally constructive on the equity markets as economic activity accelerated and trade fears diminished, enabling our clients to participate in the market's appreciation. Nevertheless, as February progressed, we became increasingly wary of ongoing events surrounding the SARS-Cov-2 virus outbreak and what it could mean for humanity and economies across the globe. We viewed China's draconian response to contain the spread as unlikely to be replicated in the US and other democracies across Europe. We spent some additional time researching the implications of the virus, speaking with infectious disease experts, and ultimately concluded that the risk of severe economic damage warranted action across client portfolios.

The decision was made easier by the fact that by the third week of February, the S&P 500 was at 3385, just ahead of our year-end target price of 3365 (published in our *4Q19 Quarterly Newsletter*). Hence, we concluded the risk/reward from initiating a major short-sale was particularly favorable: stocks were fairly valued *excluding* the risk of an economic hit from SARS-CoV-2; given the risk, they were materially overvalued, in our view. Thus, Friday afternoon on February 21, we executed the largest short in our firm's 10-year history. When markets declined the following week, we continued to add to our short positions and liquidated stocks that we feared could be irreparably harmed by the pandemic.

As noted in last quarter's newsletter, what makes our model unique is that we do not manage a fund, but rather "separate accounts" that are individually tailored and customized according to the specific needs and risk characteristics of our clients. While no account is identical, there are generally four fundamental strategies that we manage:

- (i) **Equity Best Ideas** — typically an all equity account invested globally and benchmarked against the S&P 500 or a global index;
- (ii) **Capital Appreciation** — typically a blended account comprised of long (and sometimes) short equity, debt and hybrids invested globally against a "retirement date" benchmark;
- (iii) **Yield** — typically a tax-deferred account designed to produce annual income of 4% or more per year through dividends and bond coupons, and somewhat unique among income-oriented accounts, offering some protection should interest rates rise;
- (iv) **ESG** — designed to meet environmental, social and corporate governance objectives of our clients.

While managing separate accounts does increase the complexity of market timing actions such as those we implemented, it does allow us to be more aggressive protecting value in the accounts that should be protected: among those clients who are retired or close to retirement. Conversely, the structure allows us to be less aggressive protecting portfolios of younger clients who may have 50-plus years of investing ahead of them, so plenty of time to make up for equity declines like those we have just witnessed.

The structure also allows us to determine how large of a short position is required to protect the account depending on its underlying mix of assets. For instance, in an All-Equity portfolio benchmarked against the S&P 500, we need a larger short position to protect that account than we need for an account that is yield-based or oriented to Capital Appreciation.

Rockingstone's performance is the time-weighted return of our actively managed accounts that were invested prior to January 1, 2020, weighted by account size. The following table highlights how major indices performed during the first quarter against Rockingstone's performance (although individual accounts do vary).

Figure 3: Rockingstone Performance 1Q20 vs. Select Indices and Benchmarks

<u>Index / Benchmark</u>	<u>1Q20</u>
S&P500 (SPY)	-19.6%
Dow Jones (DIA)	-23.1%
Russell 2000 (IWM)	-30.9%
Nasdaq (QQQ)	-10.5%
Global Equities (VT)	-18.6%
Life Strategy Balanced (VSMGX)	-12.9%
Retirement 2020 (VTWNX)	-10.8%
Rockingstone Advisors	-7.9%

Source: FactSet

To be more specific, in our equity-oriented strategies (Equity Best Ideas, Capital Appreciation, ESG) in taxable accounts, we proactively shorted a number of different ETFs, including VOO, QQQ, VBR, VTV and VB during the last five weeks of the quarter. We started shorting both VOO and QQQ on Feb 21<sup>st</sup>, but soon noticed these two ETFs were not sufficiently hedging some of our smaller-cap equity exposure. Moreover, the Nasdaq 100 (QQQ) short, while declining in absolute dollars, was a relative outperformer given the index's composition of well capitalized global growth companies, many of which sell subscription products directly to homeowners (e.g., Google, Netflix, Amazon, Microsoft).

As a result, we closed out those two short positions at a profit and initiated short positions in VBR (the small cap value ETF) as well as VTV (the large cap value ETF) between March 3-12. The value ETFs hold disproportionate positions in energy, financials and industrials, sectors that we believed would be relative underperformers in the sell-off. When the market approached what we viewed as a near term over-sold position, we covered the VBR and VTV short. The market staged a strong rally at the end of March as the quarter closed, but our expectations for accelerating cases and decelerating economic activity led us to once again short VB, the small cap ETF, on the last day of the month, which we covered a week later at a small loss.

We note from Feb 21<sup>st</sup> until the end of the month, we sold a number of individual stocks that looked particularly risky (ANTM, DIS, ETM, LYFT, RRR) given their pandemic health policy exposure and / or balance sheet leverage. We did acquire Treehouse Foods (THS) in the middle of March; THS is the leading private-label food provider to companies such as Wal-Mart and Trader Joes.

Lastly, in our fourth strategy, Yield, which is almost exclusively employed in tax-deferred accounts where we cannot sell short for regulatory reasons, we took proactive steps to sell many, if not all, securities, viewing cash as the best short-term option. Our actions in retirement accounts were generally client specific: for retired clients or those close to retirement, we took aggressive actions; for those clients with at least 10-plus years before retirement, we were less aggressive.

During unprecedented volatility, we believe effective and frequent communication is critical, and have decided to disclose to our Quarterly Newsletter readers our thought process and views during the crisis as communicated via client emails.

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## Investor Letter: February 24, 2020

*Dear Client,*

*We wanted to update you on our view of the markets in light of accelerating global coronavirus cases. On Friday, we executed a fairly large short sale of the S&P 500 and the Nasdaq 100 that will show up in taxable accounts this morning in various amounts depending on portfolio strategy and current cash levels in the account. (We cannot short in non-taxable accounts). We may look to add to that short position over the next few days, depending on market conditions. We executed the trade despite several arguments against taking such an action, including, (i) the fact that markets are nearly impossible to time and efforts to time them rarely result in gains; (ii) global growth has been showing signs of bottoming in December with re-acceleration in January and February; (iii) corporate earnings, especially tech earnings, have been surprisingly robust; (iv) markets to date have been amazingly resilient to negative headlines, generally closing on their highs; and lastly (v) markets ALWAYS rebound from wars, pandemics, and catastrophic events over the long-term.*

*So why short the market? Our rationale was based not just on the potential implications of the coronavirus and its duration, but also on the fact that our year-end target price for the S&P 500 is 3,365; based on Friday's closing price of 3,337, that implies less than a 1% potential gain from current levels. Based on historical supply/demand shocks, as well as technical levels, we believe equity markets are susceptible to anywhere between a 10-20% sell-off, so our move should be characterized more as a risk/reward assessment insight of the potential hit to corporate earnings from corona. We would also highlight that the first rule of asset management is capital preservation, and while that does not mean reacting to every negative headline, it does mean that when risk is materially skewed to the downside, prudence calls for some action.*

*In shorting stocks, we avoid the capital gains impact of selling current shares to reduce exposure; options are another tool we may use to hedge portfolios or single stocks that may be at risk. That said, amid all the negative news, it is important to remember that we continue to really like the names we own; they are great companies at attractive valuations with excellent returns. Several of the names that lagged last calendar year are performing very well this year and we expect that outperformance to continue.*

*As always, we thank you for your confidence in managing your assets. We realize the trust that such an action demonstrates and assure you that we take our fiduciary duty to protect and grow your assets with the utmost seriousness and care.*

*Please do not hesitate to reach out to us if you have any questions or concerns.*

*Best regards,*

*Eric and Brandt*

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## Investor Letter: February 27, 2020

*Dear Client,*

*We wanted to follow-up on Monday's email. While we were super pleased with the short put in place on Friday for taxable accounts, the reality is the force of the selling was simply overwhelming. For example, we owned companies that had just reported stellar earnings yet gapped down 10-15% each day this week. We emphasize a 15-20% short implies accounts are still 80-85% long, and the sell off, like most sell offs, has been brutally fast and has hit hard several of our deeper value names. We own those specific names, as well as other names in our portfolio, for the long-term. We remain comfortable with those company fundamentals and will unfortunately have to suffer through the declines.*

*There is no change to our original expectation of declines between 10-20% as we noted in Monday's email, and would say that based on the most recent headlines, we are preparing for something closer to a 20% decline than a 10% decline. We note the latter of which (-10%) is what equity markets have fallen peak to trough through today. For this reason, we continue to reduce exposure, add to our shorts in taxable accounts, and are taking more aggressive actions in tax deferred accounts where we cannot short, but at least can sell without incurring a tax hit.*

*Markets have always rebounded from these events, and we have no doubt the same will happen again. But in the interim, the coronavirus has the means to be a pretty serious health and economic shock, and frankly no one knows how damaging it will turn out to be.*

*In our view it is best to assume the worst and be surprised by the upside. We think the negative headlines in the US are really just beginning, and we suspect that over the next several weeks there will be a mix of intermittent rallies and sell-offs on various news headlines, but the general direction will be down until the rate of new cases in the US begins to decline. It could be several weeks to months until that decline starts to be discounted by the market.*

*Of course, there are some amazing buying opportunities that are being created by the volatility. The airlines, cruise ships, casinos and entire energy complex are at some of the cheapest levels they have been in many years. Part of our selective selling rationale is to be able to take advantage of the serious dislocation in many of those names. Given the above volatility, it is possible much more activity will occur in your accounts vs. our typical buy and hold approach.*

*As always, please call or email with any questions you may have.*

*Best regards,*

*Brandt and Eric*

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## Investor Letter: March 9, 2020

*Dear Client,*

*Stock markets are going to have a tough day, and most likely through the next month or so. We are anticipating early market trading declines of 8-10% today alone, as futures were limit down last night. In addition to the ongoing virus concerns, OPEC's failure to reach an*

*agreement on production has resulted in an oil price collapse and a concomitant rally in treasuries. The market is reacting to all this uncertainty.*

*On Friday equity markets rallied into the close, and it appears several investors were expecting a sharp rally from oversold conditions today. This may also explain the steep overnight drop. We remained bearish and had actually shorted more stock on Friday.*

*We believe that your accounts are adequately prepared for this move. We have a sizable short in taxable accounts; we have lightened up exposure in tax-deferred accounts and liquidated select accounts where prudent. Still, days like this never feel good, and stocks will gap down as investors panic and liquidate at any price. We have our "Buy List," but are holding off until stocks have fallen at least 20% from their highs, which was our original expectation.*

*That said, we just want to remind you that markets always recover in the long-term, that this type of volatility is not unexpected given current events, and that with the fiscal and monetary stimulus in place businesses may witness a speedy recovery in 2H20. In prior events like this (Ebola, H1N1, SARS, MERS) equity markets tended to bottom two weeks to a month before the news flow started to ebb. Our guess is that may coincide with a slowing of the rate of global infections; it's still unclear if warm weather will help as well.*

*As always, please do not hesitate to call, email or send us a text. We are highly unlikely to make any trades today as this is an excellent time to do fundamental research on companies that are on our long-term focused buy list. Please don't worry about reaching out on a day like this if it will give you comfort during such volatility. Lastly note that Schwab has now provided 1099 tax forms so you can logon to your account and download as needed. Just a reminder, Schwab typically issues "corrected" 1099s through the spring; we always recommend filing an extension in April and your return in October.*

*Best regards,*

*Brandt and Eric*

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## Investor Letter: March 22, 2020

*Dear Client,*

*Eric and I hope you and your extended family are healthy and managing through this difficult period.*

*We just experienced the most volatile week ever in financial markets. While the stock market typically receives the bulk of the media attention, there was widespread dislocation in practically all markets— from commodities to bonds to currencies. Previously uncorrelated assets traded together, and safe assets like gold and treasury bonds sold off. Bloomberg News had a great piece on the breadth of the unfolding crisis that occurred last week:*

<https://www.bloomberg.com/news/articles/2020-03-20/diary-of-a-crisis-inside-wall-street-s-most-volatile-ever-week?sref=D1Zj8uyE>

*As you may recall from our previous communications, we were fortunate starting Feb 21 to make Rockingstone's portfolios more conservative via outright asset sales as well as aggressive shorting. Given the steep drop in markets, we wanted to give you a better sense*

as to where your account stands YTD vs. major indices. Below is a review of how those major markets have performed through Friday vs. your account(s).

Index / Benchmark	Performance (to 3/20/20)	
	1Q20 YTD	From 2/19/20
S&P 500 (SPY)	-28.9%	-32.4%
Dow Jones (DIA)	-32.7%	-34.8%
Russell 2000 (IWM)	-38.8%	-39.8%
Nasdaq (QQQ)	-19.7%	-28.0%
Global Equities (VT)	-30.8%	-32.5%
Life Strategy Balanced (VSMGX)	-19.4%	-21.5%
Retirement 2020 (VTWNX)	-16.7%	-18.6%
XXXXXXXXXX - Schwab Account	-X.X%	-X.X%

Going forward, we remain cautious as to the economic impact of the virus. It appears the current temporary shutdown is designed to give hospital providers extra time to add staff, boost supplies and free up beds, and to improve the availability of testing kits to slow transmission by better identifying who has the virus. Obviously the longer the work slowdown persists, the more economically damaging it will be. Equity markets discount the future, but our sense is that valuations probably reflect a slowdown that exceeds several weeks but does not extend several months.

Based on our current assumptions, we are of the opinion that the slowdown may last longer than is currently contemplated in financial asset valuations, as the loosening of work restrictions may lead to accelerating viral infections. We believe that the "push-pull" of the economy vs. public health will most likely persist through the summer and fall. So, while there appears to be some inexpensive assets out there, and we are picking our spots very carefully, in general we believe it is too early to begin wholesale buying and would expect further erosion in asset prices.

Ultimately our view is that Federal Reserve actions are minimally effective as the virus is a health care policy dilemma that cannot be solved by easier monetary policy. We do believe a substantial aid package to individuals, small businesses and even large companies will be necessary. This should provide a temporary bridge for the US economy. While difficult to contemplate, at some point we suspect the economic cost to the US will be too great to bear and policy makers will decide to encourage lower risk (i.e. citizens under the age of 60) individuals return to work while the remainder must be sequestered. Predicting the outcome of these monetary, fiscal and health policy decisions is very challenging, but we believe, so far, to have navigated the markets reasonably well.

We are now working remotely; Eric can be reached via cell (646-460-7245) or his email: [eric@rockingstoneadvisors.com](mailto:eric@rockingstoneadvisors.com). I'm now working from Larchmont; please call my cell (917-374-4204) or email [brandt@rockingstoneadvisors.com](mailto:brandt@rockingstoneadvisors.com).

Eric and I are in communication frequently and continue to actively monitor accounts. Please feel free to contact either of should you have any questions or comments.

Best regards,

Brandt and Eric

# Implications & Outlook

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## What to do now?

Because of the infrequency of global pandemics, there are simply not that many historical analogs to provide a roadmap of how we will ultimately emerge from the pandemic and how long it will take to resume some degree of normalcy. That said, there are two historical events that we believe provide a partial roadmap: The Equine Flu of 1872-73 and the Asian Flu of 1957-58.

### The Equine Flu of 1872-73

An outbreak of the Equine Flu, believed to be a highly pathogenic avian influenza (HPAI) began in Ontario, Canada in 1872 and traveled along railway lines sickening horses throughout North America, and reaching the west coast by the spring of 1873. The flu also struck and decimated populations of poultry, turkeys, and game birds, although generally not humans. Unfortunately, horses were a critical component of the mid-to-late 19<sup>th</sup> century economy, responsible for transportation, freight hauling, warfare, mail delivery and fighting fires. Infection rates for horses were estimated to be between 80 and 99 percent, and the economic impact was significant. How significant a role the Equine Flu played in the Panic of 1873 and the subsequent "Great Depression" of 1874-1878 is unclear, but there is little doubt the economic damage caused by the Equine Flu was a major factor.

To get a sense for the economic impact, and using historical economic data from Robert Shiller of Yale, it appears that from 1873 to 1878 the S&P Composite Index declined roughly 36% from its peak of 5.11 in 1873 to its trough of 3.25 in 1878 (a CAGR of -8.7%). During the same period, one-year interest rates declined from 8.35% in 1873 to 4.25% by 1879. The consumer price index declined from 12.939 in 1873 to 8.277 by 1879, or roughly 7.2% annually for six years. The economy ultimately stabilized, and from 1878 to 1881 the S&P Composite rose 90% over the next three years.

### The Spanish Flu of 1918

While the next major pandemic to strike the US was the Spanish Flu of 1918 (H1N1), it occurred during World War I, so it is very hard to disaggregate the economic impact of the flu from the overall war effort. Importantly, the Spanish Flu came in three distinct waves (spring of 1918, the fall of 1918 and the winter of 1918-19), with the first and third waves relatively minor and the second catastrophic, with mortality originally estimated at 21.5 million but has since been upwardly revised to between 40-50 million deaths, with those deaths skewed towards younger ages as older age groups may be had prior exposure to a genetically similar strain.

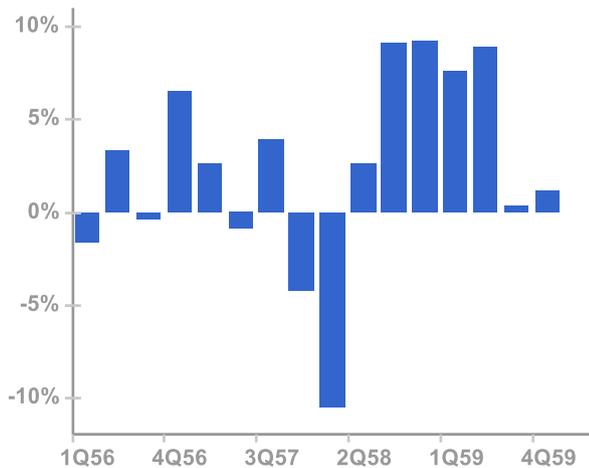
### The Asian Flu of 1957-58

Following the Spanish Flu of 1918, there were several regional outbreaks of influenza, until a new strain called the Asian Flu (H2N2) emerged from Yunnan Province, China in February 1957 to cause another global pandemic, although comparatively mild compared to the Spanish Flu. The Asian Flu spread rapidly from China to Singapore to Taiwan and then globally. No one under the age of 65 had immunity, suggesting prior viral circulation of a related strain sometime in the late 19<sup>th</sup> century. Like the Spanish Flu, H2N2 would reappear in successive, unpredictable waves, with the second wave more severe than the first. Mortality rates were estimated to be roughly 1.9 per 10,000 people; there were no anti-viral medications and no vaccines.

The economic impact of Asian Flu pandemic of 1957-58 was significant, but relatively short-lived. As evidenced in Figure 14, GDP declined during the 4Q57 by 4.1% followed by a decline of 10% in the 1Q58. However, growth recovered after just two quarters of declines in 2Q58 and then grew rapidly by 3Q58.

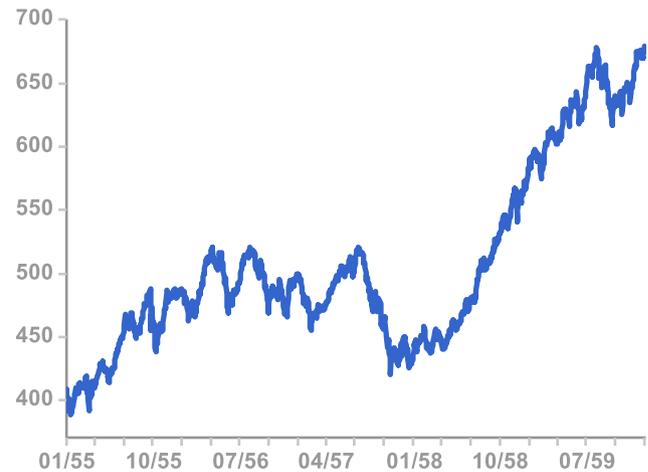
Looking back at equity markets during the same time period, the Dow Jones Industrial Average was range-bound between early 1956 to the summer of 1957 when the pandemic struck. After peaking in July 1957 at 519.81, the index subsequently declined 19%, bottoming in October of 1957. In fact, stocks had not really done much in over two years, which then set the stage for a robust rally that brought the index from a low of 419.19 to a high of 678 by the summer of 1959.

Figure 4: GDP, 1956-59 (compound annual rate of change)



Source: FRED

Figure 5: DJIA, 1955-59



Source: FactSet

There are some important lessons to take away from these historical analogs, although it is important to realize much has changed around healthcare technology, capital markets, government funding and the Federal Reserve.

### Implications

First, the initial wave of the virus is rarely the only wave; we should at least contemplate that there may be multiple waves and expect that those additional waves could potentially be more dangerous than what has already been experienced. Second, we should be prepared for at least two quarters of GDP declines, and unlike current estimates that see a trough in 2Q20, historical evidence indicates we most likely trough in 3Q20. Third, the stock market recovery from pandemic-driven economic declines is not to be missed. Fourth, the actions taken by the Federal Reserve and Congress are unprecedented in history; market participants in the 1870s and 1950s could scarcely imagine the influx the level of stimulus injected into the economy.

It is the implication of this coordinated action that we must now contemplate.

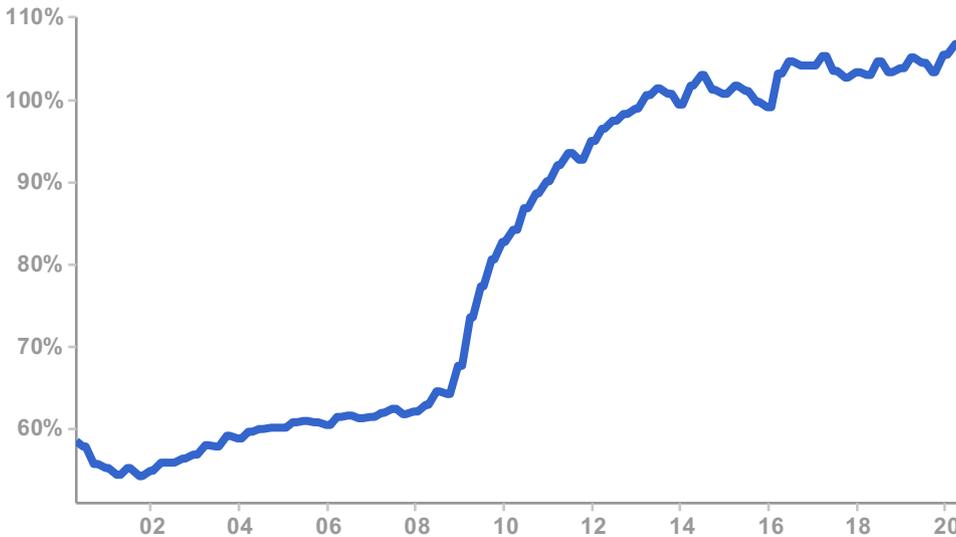
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### Fiscal stimulus exacerbates concerns over too much debt

In last quarter's newsletter, we focused on the mounting debt problem for the US government. As a backdrop, we note that even before the pandemic, ongoing US government budget deficits (which had been projected at \$1+ trillion), let alone total debt outstanding (close to \$22 trillion) didn't receive much attention from investors and

politicians. Before the crisis, total US non-financial corporate debt stood at over \$15 trillion. With the \$2+ trillion stimulus/relief package and the likelihood tax revenues plummet along with a contraction in GDP, experts now point to US Public Debt as a % of GDP jumping to close to 125%.

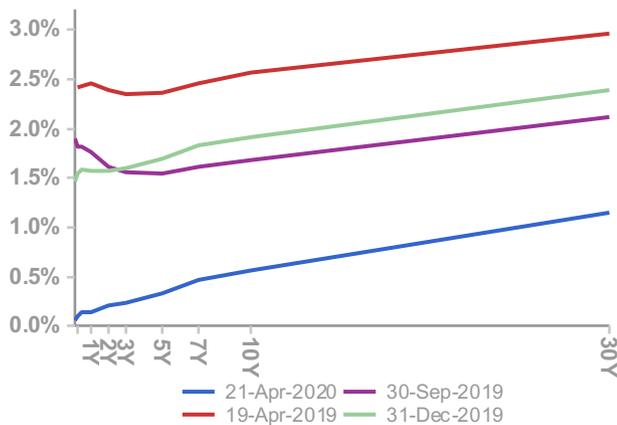
Figure 6: US Public Debt (as % of GDP)



Source: FactSet

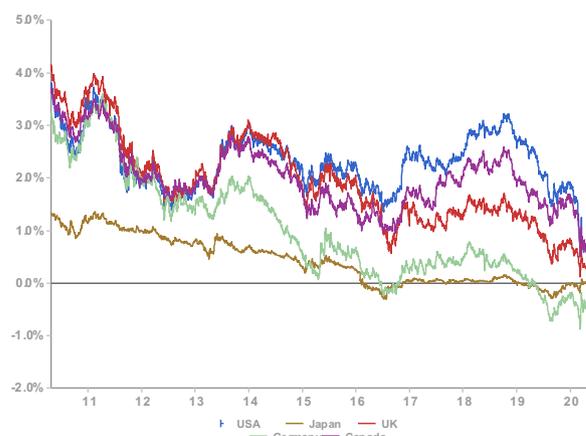
As US public debt has increased since the GFC in 2008, there has not been much of a tangible impact on the country. The lack of repercussions is a result of (1) the US Federal Reserve keeping interest rates very low, (2) minimal to no inflation, (3) the US dollar remains a reserve currency and still perceived as a safe haven. Will the jump in fiscal spending along with an expanding Federal Reserve balance sheet finally lead to concerns over the mounting debt levels? We believe this is a major asset allocation issue for the long term, and there are some early signs that bond market participants are questioning the open check policy of central banks and sovereign governments. While government bond yields have been forced lower by central bank purchases, there is an interesting and notable spike in global sovereign yields that occurred at the time of the announcement of massive central bank intervention and fiscal stimulus.

Figure 7: U.S. Government Yield Curve



Source: Factset

Figure 8: Global Sovereign Yields



Source: Factset

# Forecast: 2020 & 2021

## Rockingstone Advisors: Our Latest Forecasts

We have updated our forecasts to reflect the latest views on 2020 and some initial perspective on 2021. We are generally cautious on both growth factors for 2020 with slightly more optimism regarding the world’s ability to rebound in 2021. We see an ongoing battle between the public health policy challenges of the pandemic and the desire to restart economies around the world.

Figure 9: Key Metric Forecast

Metric	Year End December	
	Band	Point
US Real GDP (2020)	-7.0% to -14.0%	-10.5%
US Real GDP (2021)	+5.0% to +11.0%	8.4%
S&P 500 2020 EPS (RSA/Street)	NA	\$125 / \$139
S&P 500 2021 EPS (RSA/Street)	NA	\$160 / \$171
S&P 500 2020 Index	2250 - 2950	2850
10-Yr US Treasury Yield	0.4% - 0.9%	0.8%
Oil (WTI-2020 End)	\$10 - \$30	\$20
Gold (2020 End)	\$1,600 - \$2,000	\$1,850
Inflation (NTM)	-2.5% to +1.3%	-0.7%

Source: Rockingstone Advisors, The Economist, Standard and Poor’s, NYSE Arca, St. Louis Federal Reserve

To say that things have changed dramatically in terms of forecasts is an understatement! In updating our latest outlook and making some preliminary assumptions regarding the impact of the virus, it is clear that significant estimate changes are required along with wider than usual ranges. A few observations and comments:

1. **Gross Domestic Product (GDP).** We are now forecasting a 10.5% decline in US Real GDP for 2020 and an 8.4% rebound in 2021. Based on our review of prior pandemics including 1957-58, we expect a deeper contraction in 2Q20 and 3Q20 vs. the consensus outlook at this time. With the potential for a second wave of the virus later this year, we believe it is prudent to assume a bigger reduction in the economy’s output. Similarly, we think 2021 will rebound but are cautious that next year could start out poorly as the virus continues to impact production.
2. **S&P 500 EPS.** From prior expectations of \$171 a share in 2020, we slash our S&P500 EPS corporate profit outlook to just \$125. With demand squelched by health policy rules, likely consumer weakness due to pressure on income and savings, limited ability to reduce supply / capacity, a dire outlook for EPS is in the offing. Looking to 2021 on a preliminary basis, we believe corporate profits can rebound to \$160. Yet we emphasize such a forecast is challenging given the vagaries of predicting the virus impact into 2021 and how companies adapt.
3. **S&P500 2020 Index.** Our outlook for the year end 2020 S&P500 is 2850 although we note our unusually wide range of 2250 to 2900. We use an 18x multiple on “normalized” 2021 EPS of \$160 to arrive at our target. With the pandemic impacting so many different variables, we can understand some investors using a lower multiple. Yet we also note such low discount rates in our view support a somewhat higher multiple.

# Five Year Asset Value Forecast<sup>iii</sup>

## Our calculations point to reasonable long-term equity returns

While today’s markets are highly volatile and the pandemic has made central banks a more active participant, one of our main assumptions regarding capital markets is that asset values mean-revert (with respect to margins and P/E multiples) over time. It is difficult to have a lot of confidence in forecasting these days. Nevertheless, our latest analysis points to relatively solid long term— and we emphasize the focus on five years— equity returns from current levels.

Figure 10: Five-Year Total Equity Return Calculations (Incremental Contribution)

<b>Asset</b>	<b>Index</b>	<b>LT Exp. Return</b>		<b>Sales</b>		<b>Profit Margin</b>		<b>Div. Yield</b>		<b>Valuation</b>
US Large Cap Stock	S&P500	7.6%	=	5.4%	-	1.6%	+	2.2%	+	1.6%
US Mid Cap Stock	S&P400	9.4%	=	5.2%	+	0.4%	+	2.2%	+	1.6%
US Small Cap Stock	S&P600	10.0%	=	5.3%	+	2.6%	+	2.3%	-	0.3%
Foreign DM Stock	MSCI-EAFE	4.4%	=	3.1%	+	0.0%	+	3.3%	-	2.0%
Foreign EM Stock	MSCI-EM	10.8%	=	6.4%	+	1.8%	+	2.9%	-	0.3%

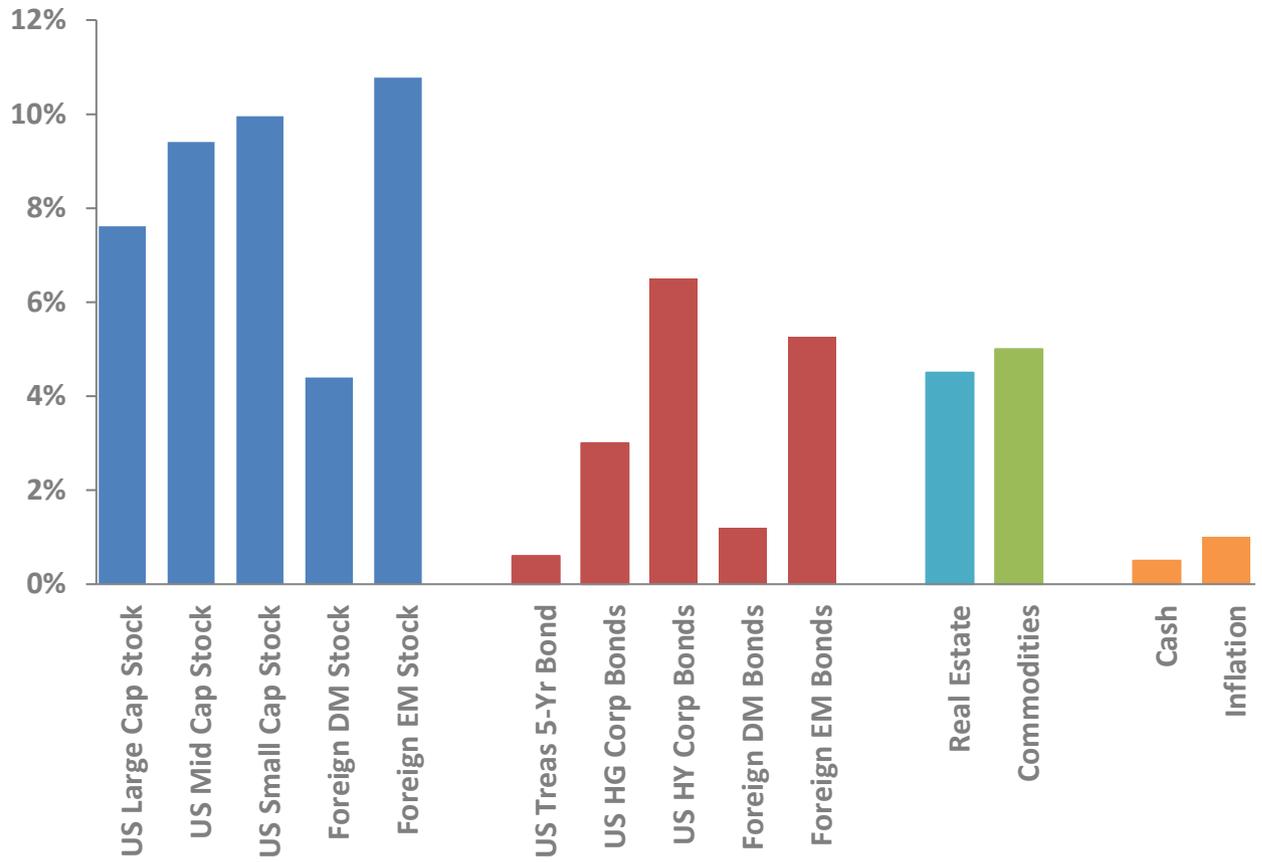
Source: Rockingstone Advisors

We analyze equities using four variables such as (1) historical sales growth, (2) corporate profit margins, (3) dividend yields, and (4) valuation to determine potential long-term returns. Using valuation as an example, P/Es should theoretically decline (if currently above the historical mean) or expand (if currently below the historical mean) over the long term.

Based on our outlook for total returns, we expect the “give” of sales growth, valuation and dividends to be partly offset by the “take” of mean-reverting margins. We expect sales growth to be relatively close to long term average performance although the economy suggests lowered expectations are likely prudent. Profit margins are high vs. history but we don’t see significant pressure (due to ongoing productivity and cost reduction measures) in the next few years as well as benign inflation.

In fixed income (see the next page for various assumptions), we expect the “give” of coupons will be exceeded by the “take” of mean-reverting inflation and real rates, both of which are below their historical mean. Of course, short-term returns may not necessarily match our longer-term return predictions; markets are significantly more random over the short-run than the long-run.

Figure 11: Five-Year Asset Class Total Return Forecast



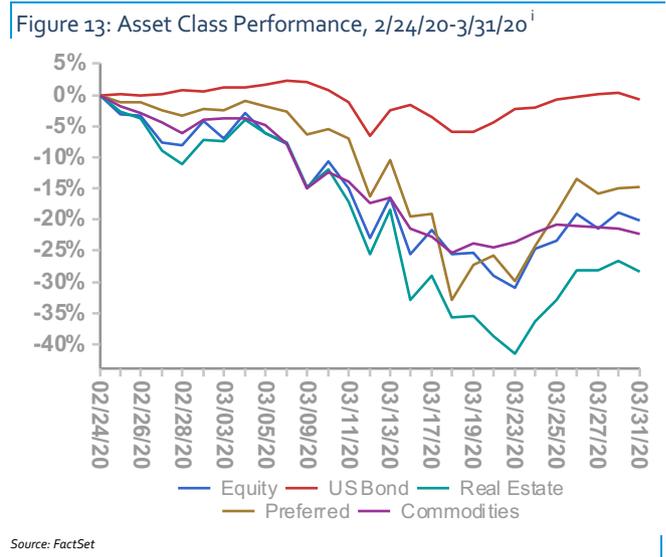
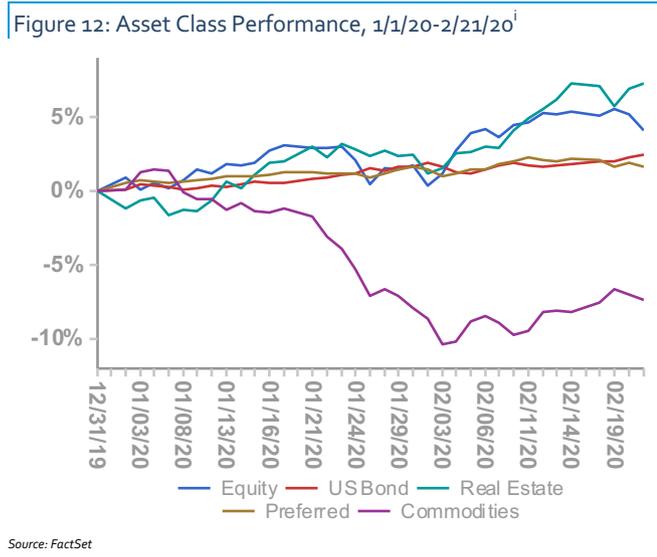
Source: Rockingstone Advisors

# Asset Class Performance Review

## In like a lamb, out like a lion

As noted previously, the first half of the quarter witnessed relatively benign action across most asset classes. Equities rose between 3-5% (depending on the index) on generally favorable 4Q19 earnings reports and decent 2020 full year guidance. Corporate bond prices rose steadily too, including both high grade and high yield; US Treasury prices rose too with yields steadily declining. Commodities were mixed, with industrial and precious metals rising, oil falling and agricultural commodities relatively flattish.

When initial reports of the novel coronavirus in Wuhan, China were reported across media outlets in January, there was an initial, short-term downdraft in risk assets — mainly equities and high yield bonds — but both soon resumed their upward trend. A notable exception to this pattern were industrial metals (DBB), which peaked January 21<sup>st</sup> and did not resume their climb along with other cyclical assets. This price behavior turned out to be an effective predictor of the pain that was to come.



Risk assets drifted higher for the first two weeks of February, but during the week of February 17<sup>th</sup>, there were early but growing signs that the coronavirus was not going to be contained. Outbreaks in South Korean and Taiwan, followed closely by Iran, received media attention, and while the number of cases in the US remained minimal at around 15, delays in effective testing were clearly undercounting cases.

The S&P peaked Wednesday February 19<sup>th</sup> and then declined on Thursday February 20<sup>th</sup>. Given the relatively high valuations of equity indices combined with the prospect for a sustained economic shut-down to contain the virus, on the afternoon of Friday the 21<sup>st</sup> we sold short more than \$15 million in stock across our portfolios. Over the weekend of the 22<sup>nd</sup> and 23<sup>rd</sup> the extent of the global pandemic was becoming increasingly clear; the S&P 500 opened down a little more than 1% and then proceeded to trade down another 2.5% to end the day at 3249.

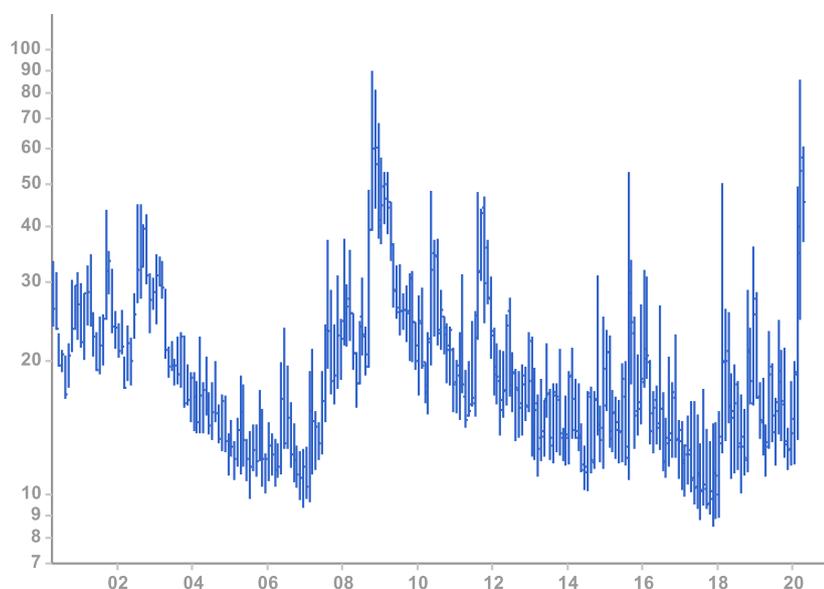
Stocks declined the entire week of the 24<sup>th</sup> of February and— except for a few one-day bear-market rallies— for the next 30 days, hitting a low of 2191 on the 23<sup>rd</sup> of March. The

S&P 500's peak to trough decline of roughly 35% was marginally better than the Dow Jones' decline of 37% and the Russell 2K's decline of 41%.

As we wrote previously, there were effectively three crises in one: (1) a global contraction in equity prices, (2) a commodity price war in oil and (3) a liquidity crisis in bonds. All three exacerbated declines in each of the other asset classes, and ultimately impacted prices in areas of financial markets generally considered to be either reasonably safe or sufficiently liquid: high quality money market funds and precious metals.

Perhaps the single best indicator of stress in financial markets is the CBOE volatility index (known as the VIX), also known as the "fear gauge." As evidenced in Figure 6, during the global financial crisis of 2008, volatility peaked at 89.5 on October 31, 2008. During the latest crisis fueled by the global pandemic, the VIX hit a high of 85.5 on March 18, 2020, a few days before the market bottomed on Monday, March 23<sup>rd</sup>.

Figure 14: CBOE Volatility Index



Source: FactSet

The global financial crisis (GFC) of 2008-09 unfolded slowly and somewhat stealthily; perhaps for this reason, both the Federal Government and the Federal Reserve were late in recognizing the severity of the threat and late in crafting the extraordinary measures necessary to deal with it. In contrast, both the Federal Reserve and Congress moved shockingly fast and with dramatic scale to soften the economic impact of health-oriented restrictions.

The Federal Reserve stepped in with a series of measures, each more aggressive than the next, all designed to restore liquidity and stability. While the Fed's initial actions were greeted skeptically by market participants, its later, more aggressive actions did finally stem the wave of selling and begin to stabilize markets.

Simultaneous with Fed actions, Congress passed, unanimously, a \$2.8 trillion (13% of GDP) spending and relief package designed to put cash immediately in the hands of US consumers and provide loans to small businesses.

How these extraordinary actions will play out in the long run is difficult to determine. Actions taken by the Fed during the GFC were feared to be inflationary, but price levels have steadily failed to surprise to the upside over the last decade. Market participants are again worried about the medium and long-term risk of quantitative easing (printing money).

Figure 15: Summary of Federal Reserve Actions

<u>Program</u>	<u>Details</u>	<u>Goal</u>
Interest Rate Cut	150 bpts cut to 0%	Help financial conditions
Discount Window	Rate cut to 0.25%, Terms extended to 90 days	Boost borrowings
Bank Reserves	Reduced to \$0	Boost bank lending
Repo Operations	Increase volume of 1, 3 mth repo \$6.5 bil max repo facility Each facility has \$500 bil cap	Ease ST liquidity funding
Intl Swap Lines	Increase swap lines with 14 non-US Central Banks	Aid \$US funding
Asset Purchases	Unlimited quantitative easing	Stabilize US Treasury and MBS agency markets
Commercial Paper (CPFF)	\$10 bil equity backing from Treasury Exchange Stabilization Fund	Aid short term liquidity in CP markets
Primary Dealer (PDCF)	\$150 bil daily usage limits	Improve overnight liquidity for primary dealers
Money Markets (MMLF)	\$10 bil equity backing	Backstopping money markets
Term Asset Backed Securities Loan (TALF)	\$10 bil equity backing \$100 bil new financings	Stabilize and support ABS market
Primary Market Corporate Credit Facility (PMCCF)	\$10 bil equity backing \$100 bil new financings	Help corp. bond market
Secondary Market Corporate Credit Facility (SMCCF)	\$10 bil equity backing \$100 bil new financings	Aid investment grade secondary corp. bonds
Paycheck Protection Program (PPP)	\$600 bil funding support	Preserve employee pay checks through crisis
Municipal Liquidity Program	\$500 bil funding support	Backstopping municipal bond market

Source: FactSet

# Equity Performance Review

## SARS-CoV-2 wreaks havoc on equity markets

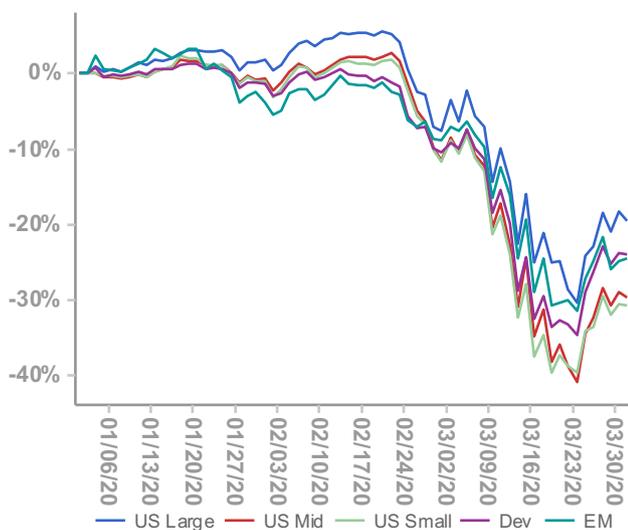
Seemingly few equity investors were focused on the risks of a pandemic during the first six to seven weeks of 1Q20 despite the emergence of a health crisis emanating from Wuhan, China in mid-January. As evidenced in the graph below, global equity markets were performing relatively well, with US investors comforted by strong macroeconomic trends and generally supportive 4Q19 earnings and guidance.

US large caps continued their outperformance during the first part of the quarter, besting their smaller cap US counterparts, and handily beating foreign developed and emerging markets, even before the implication of the pandemic were fully understood. On January 23<sup>rd</sup>, Chinese authorities quarantined the entire city of Wuhan, the first concrete evidence of the severity of the outbreak. Chinese stocks, and emerging markets stocks in general, began to slide.

News flow continued to deteriorate, and as it became clear the SARS-CoV-2 virus would not just be a China concern, investors finally took note beginning Feb 19<sup>th</sup>. On Monday the 24<sup>th</sup> of February, markets quickly and ruthlessly started to discount the challenges of a global public health pandemic where the only solution was essentially to shut down businesses and economies across the globe. Almost every major equity index collapsed as the severity of the response to the virus became clear to market participants. As investors sought relative safety, large cap companies generally outperformed small cap companies, and US markets generally outperformed foreign developed and emerging markets due to sky-rocketing demand for US dollars that occurred simultaneously with the equity sell-off.

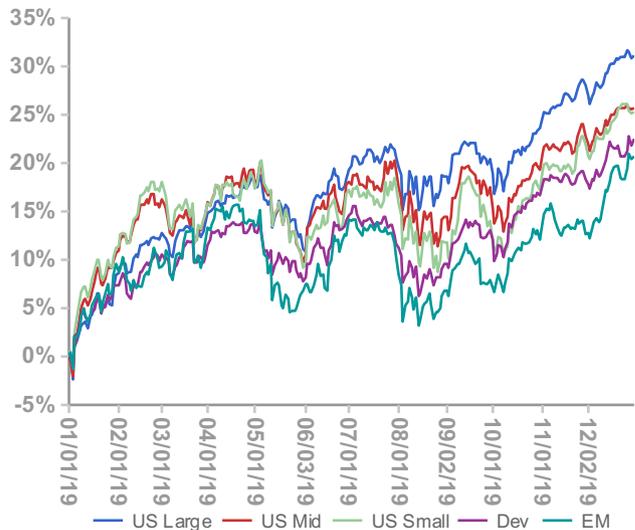
We highlight the following performance metrics regarding 1Q20 and 2019, respectively, results: US Large Cap (-19.5% and +31.2%), US Mid Cap (-29.7% and +25.5%), US Small Cap (-30.7% and +25.4%), Developed (-24.5% and +22.6%), Emerging (-24.4% and +20.7%).

Figure 16: 1Q20 Equity Performance <sup>iv</sup>



Source: FactSet

Figure 17: 2019 Equity Performance



Source: FactSet

# Fixed Income Performance Review

## US Treasuries sole bright spot in epic decline in bond prices

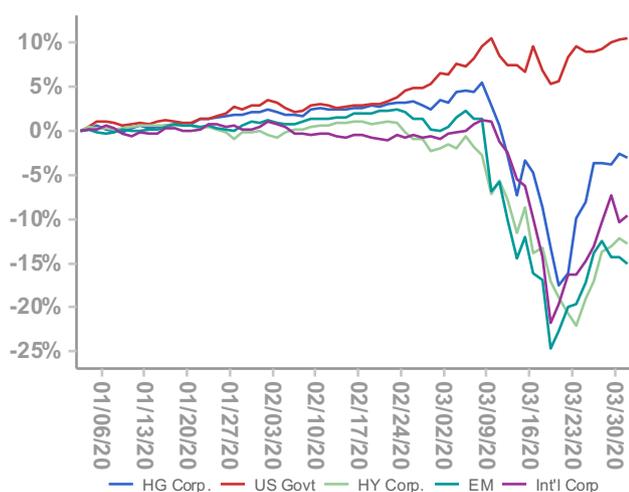
Through the first six to seven weeks of the quarter, fixed income prices drifted higher on the assumption that they would continue to benefit from generally stable macroeconomic conditions — low single-digit GDP growth coupled with low inflation. Investment grade bonds witnessed a tightening (or narrowing) of credit spreads through the first half of the quarter, while CCC credits saw some widening, although nothing material. Notably, prices for medium-term and long-term US Treasuries rose steadily during the period as yields declined.

As it became clear that SARS-CoV-2 was not going to be contained and cases began to rise exponentially, bond investors reacted quickly, liquidating holdings of consumer discretionary companies, financial institutions, and energy companies. Mortgages and asset-backed bonds also fell precipitously; municipal bonds witnessed steep declines as investors realized that bonds backed by sales tax receipts or highway tolls could be distressed. Even during the best of times, bond market liquidity is often opaque given the nature of how the securities are traded; in a crisis fueled by a global pandemic, liquidity evaporated and bond pricing models— which try to value bonds that are not traded— went haywire, affecting valuations of bond mutual funds and bond ETFs.

In response, the Federal Reserve made a series of policy announcements that included: lowering discount window interest rates to zero, buying bonds at a rate of \$125 billion a day, extending such buying programs to states, municipalities and even high yield bonds. Fortunately, these policy actions, at least for the moment, have stabilized fixed income markets and allowed numerous companies to issue and/or rollover debt.

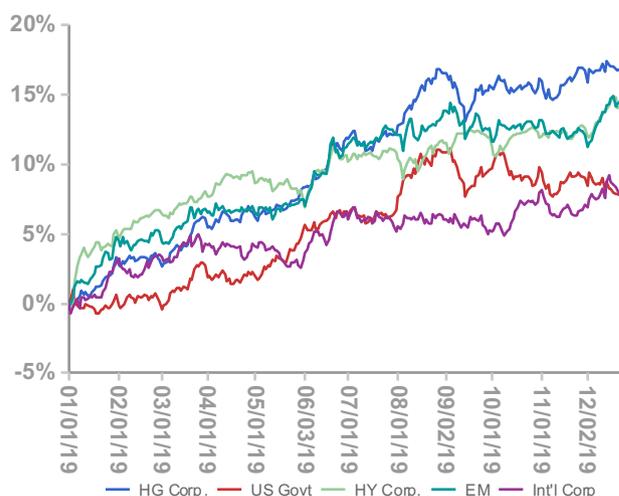
We note the following performance figures for 1Q20 and 2019, respectively: US High Grades (-3.0% and +17.4%), US Governments (+10.4% and +8.4%), US High Yield (-12.7% and +14.9%), International Corporates (-9.5% and +9.4%), Emerging Markets (-15.0% and +15.5%).

Figure 18: 1Q20 Fixed Income Performance<sup>v</sup>



Source: FactSet

Figure 19: 2019 Fixed Income Performance



Source: FactSet

# Commodity Performance Review

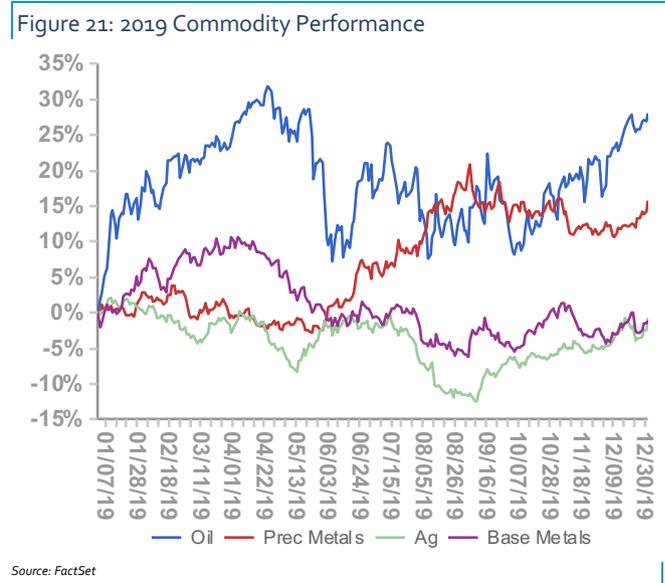
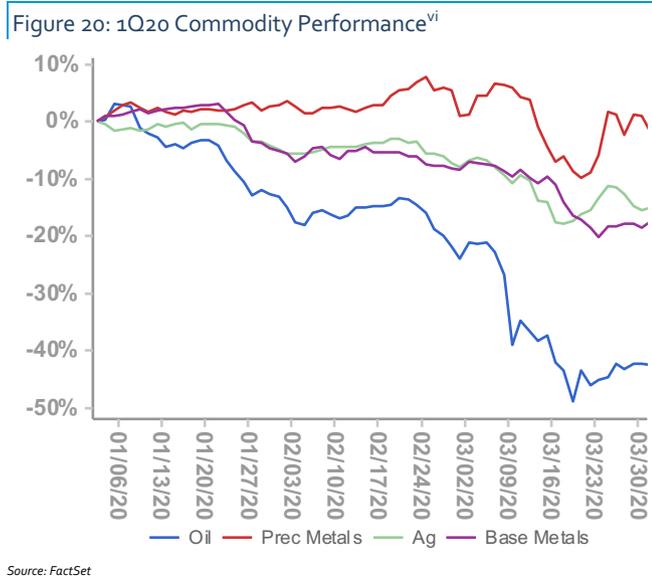
## Precious metals store most of their value, oil continues its collapse

Investors should normally expect greater volatility in commodity prices relative to equities or bonds. This is because unlike stocks and bonds, commodities do not generate a stream of free cash flows that can be discounted back to present value. Commodities are also frequently susceptible to sudden supply and demand shocks impacting price.

During the first quarter, oil (indeed the entire energy complex) sustained a slew of negative developments. As governments closed transportation networks, demand for jet and auto fuel collapsed. Lower electricity from shuttered factories reduced demand for natural gas. These factors combined helped to reduce demand for oil by about 25-30 million B/D. Compounding the demand shock was a major dispute and price war between the second and third largest global producers, Saudi Arabia and Russia. As a result, massive declines in oil prices fueled widening bond spreads, exacerbating the turmoil in fixed income markets.

Outside of energy commodities, gold retained its historical role as a store of value, although during the crisis it did see some selling as investors looked to raise cash from *any* liquid security. We note that with central banks around the globe expanding monetary policy along with fiscal stimulus, the long-term outlook for inflation has most likely increased. Indeed, the last few decades have witnessed minimal inflation in most major economies but that could come to an end. Thus, Rockingstone may invest more significantly in commodity ETFs in the future should our concern over inflation become more acute.

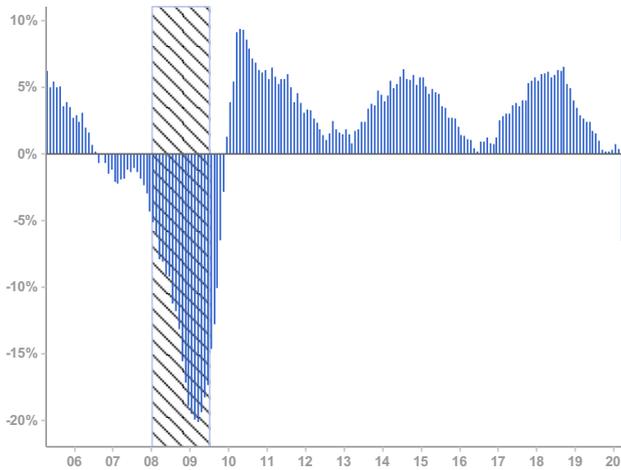
As a reminder, Rockingstone will typically invest in commodities via ETFs and the below graphs display what we view as representative performance for the underlying commodities. We point to the following returns during the 1Q20 and 2019, respectively: Oil (-42.6% and +28.0%), Precious Metals (+1.0% and -1.2%), Agriculture (-15.0% and -6.4%), Base Metals -17.3% and -1.1%).



# Chart Book

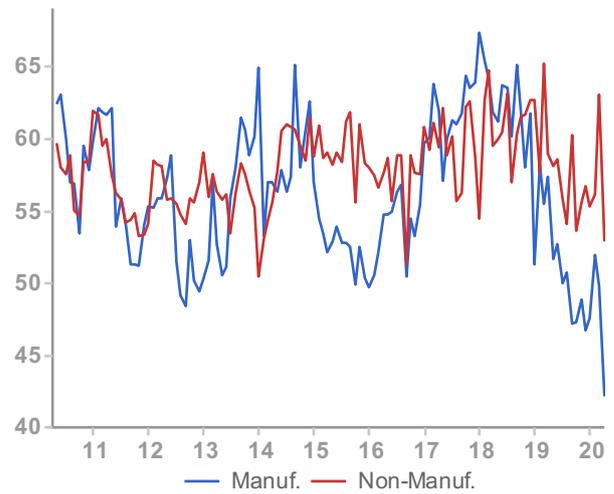
## Leading Indicators

Figure 22: Index of Leading Economic Indicators



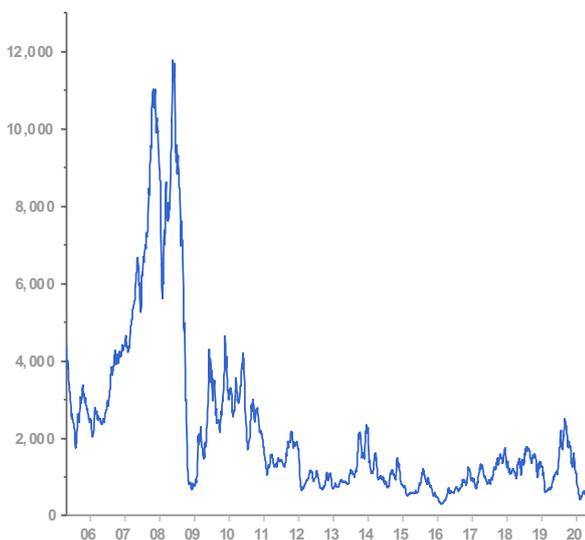
Source: FactSet

Figure 23: ISM New Orders



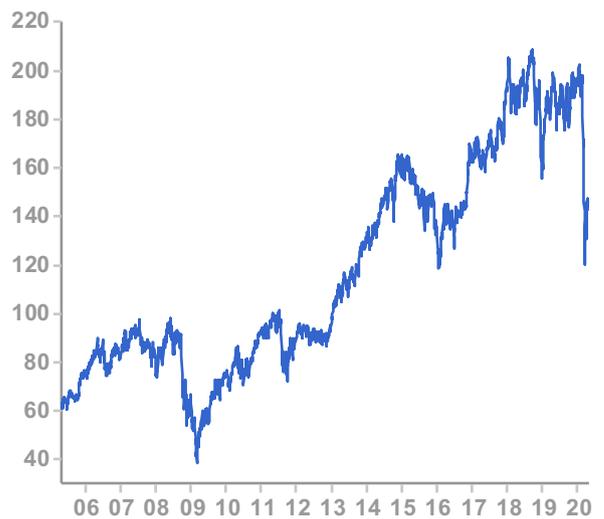
Source: St. Louis Federal Reserve, FRED Database

Figure 24: Baltic Freight Index



Source: FactSet

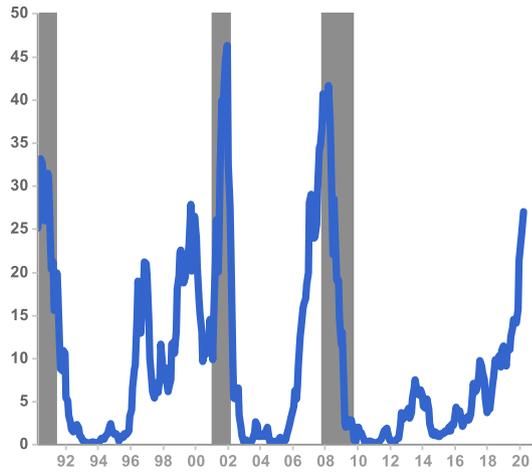
Figure 25: DJ Transports



Source: FactSet

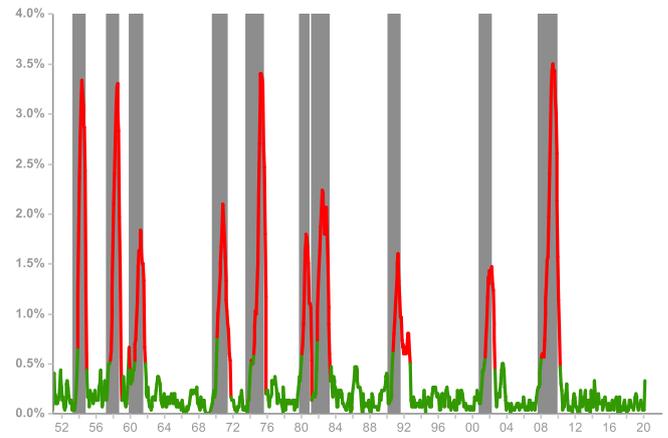
## Real-time Recession Risk Indicators

Figure 26: Treasury Spread Recession Predictor



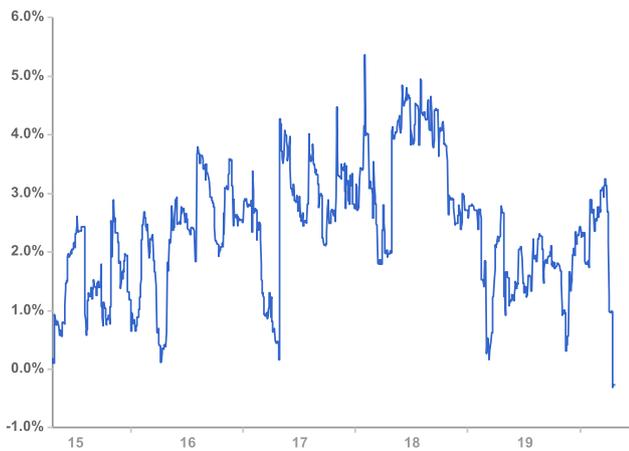
Source: FactSet, FRED Database

Figure 27: Sahm Real-time Recession Predictor



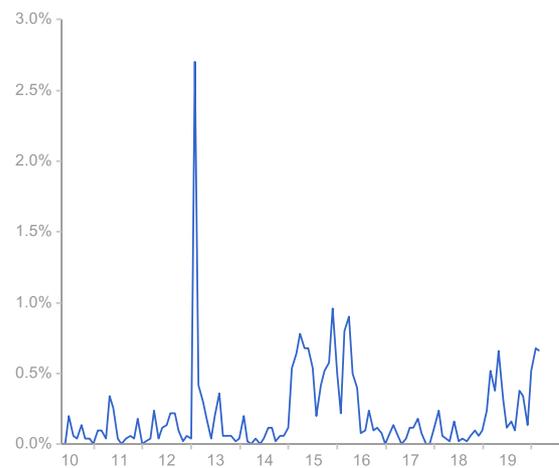
Source: St. Louis Federal Reserve, FRED Database

Figure 28: GDP Now (Atlanta Fed)



Source: FactSet, FRED Database

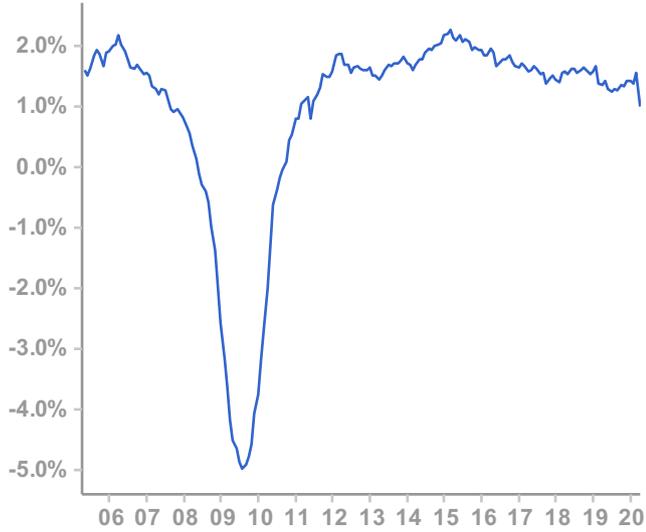
Figure 29: Smoothed US Recession Probabilities



Source: FactSet, FRED Database

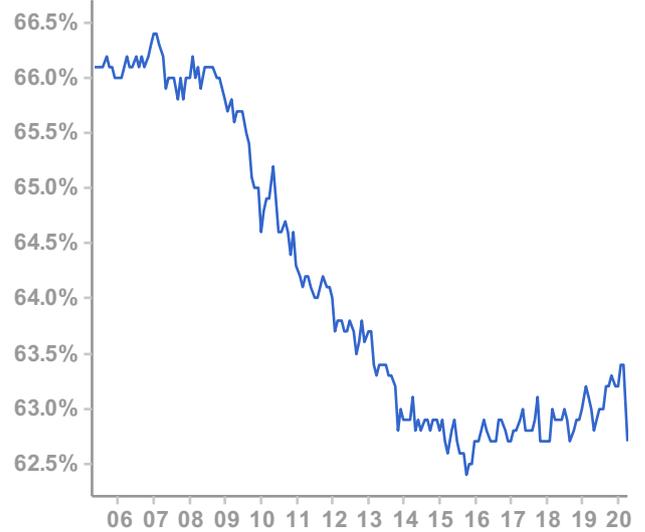
Labor Market Indicators

Figure 30: Payroll Growth (Establishment Survey, % Chg YoY)



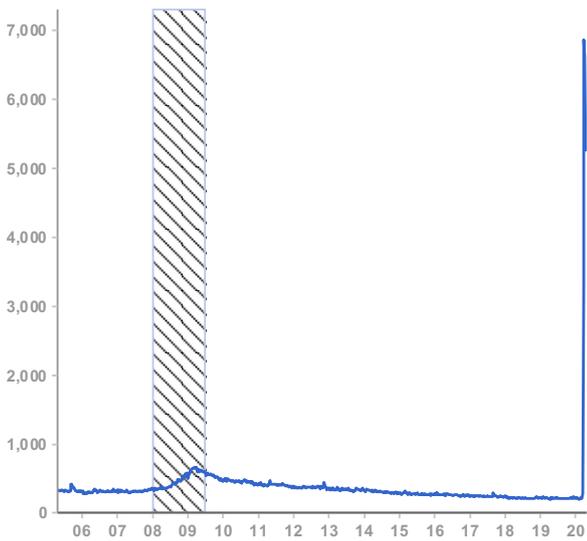
Source: FactSet

Figure 31: Labor Participation Rate (% of Workforce)



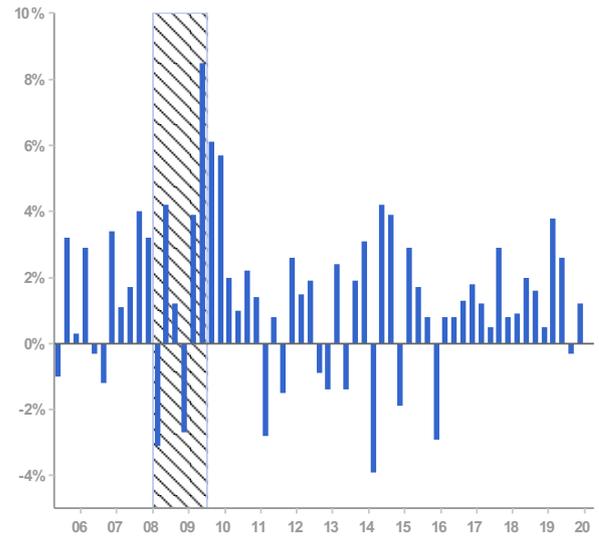
Source: FactSet

Figure 32: Initial Unemployment Claims



Source: FactSet

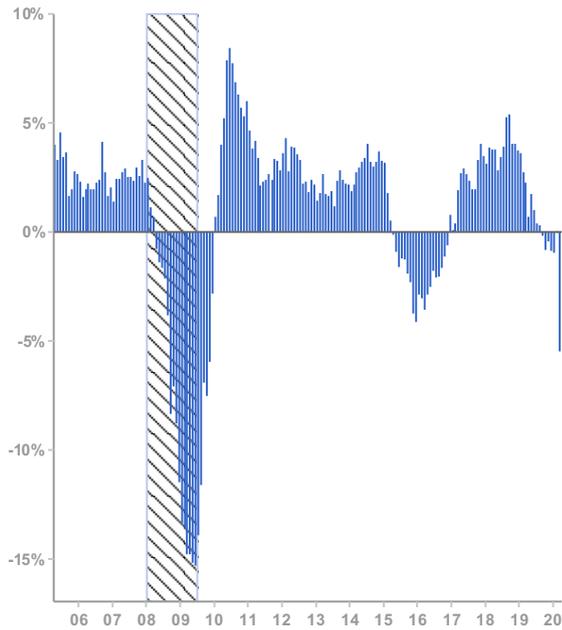
Figure 33: Non-Farm Productivity (% Chg YoY)



Source: FactSet

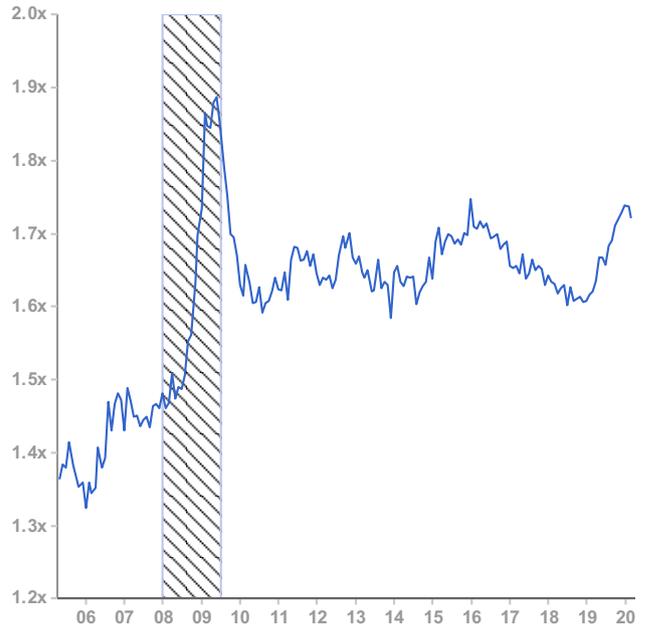
Production and Business Activity Indicators

Figure 34: Industrial Production (% Chg YoY)



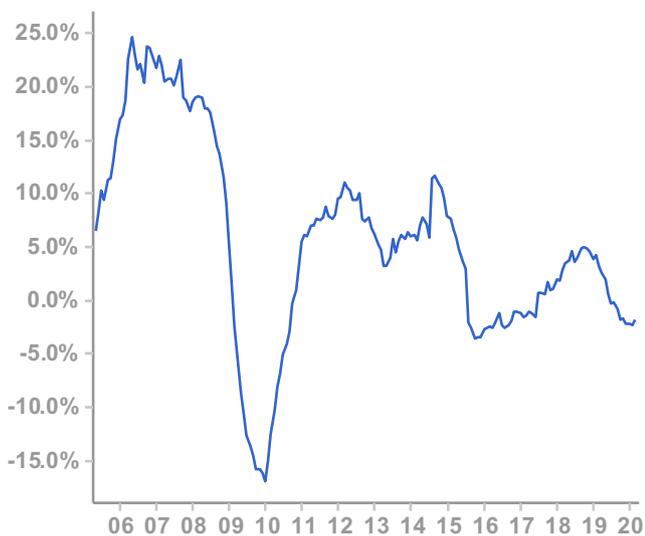
Source: FactSet

Figure 35: US Inventory to Shipment Ratio



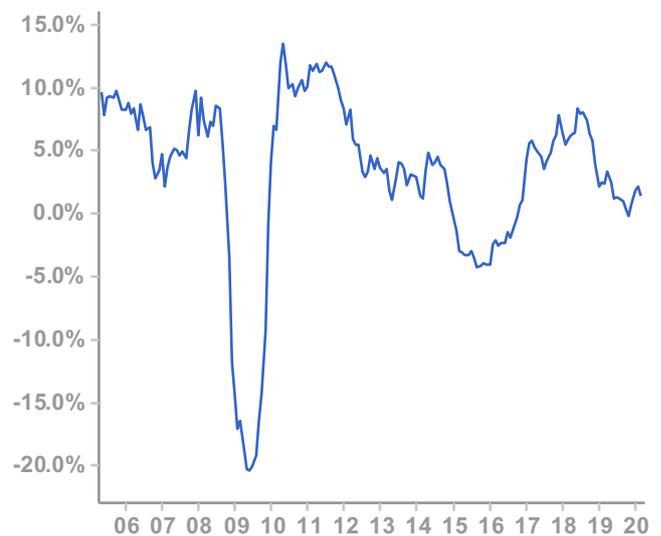
Source: FactSet

Figure 36: Unfilled Orders (% Chg. YoY)



Source: FactSet

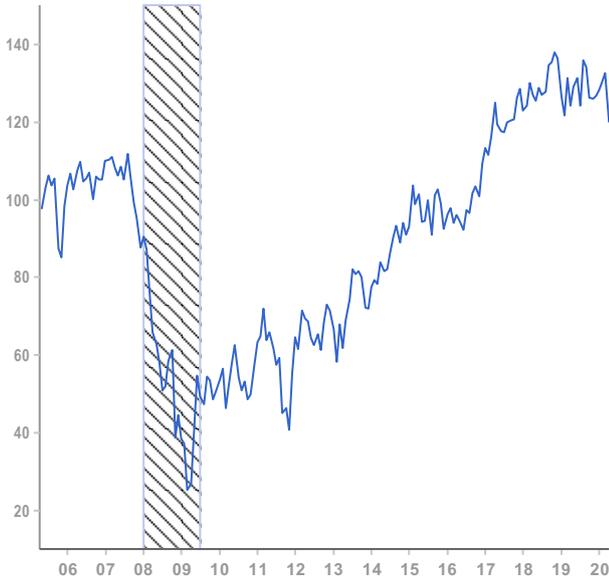
Figure 37: Business Sales (% Chg. YoY)



Source: FactSet

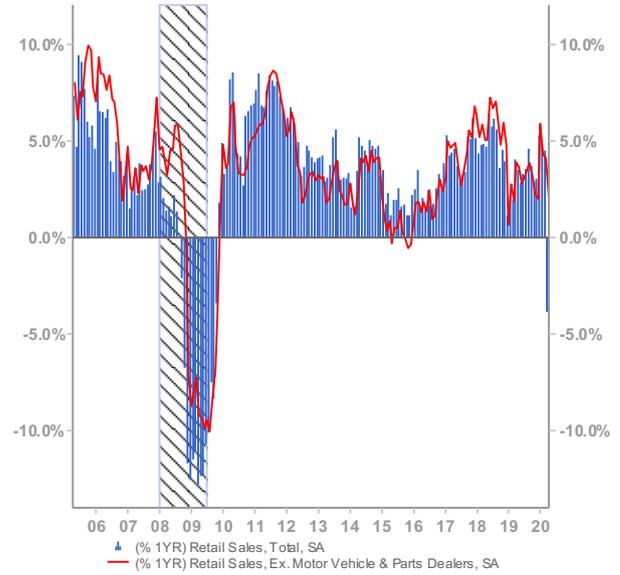
Consumer and Household Activity Indicators

Figure 38: University of Michigan Consumer Sentiment



Source: FactSet

Figure 39: Retail Sales



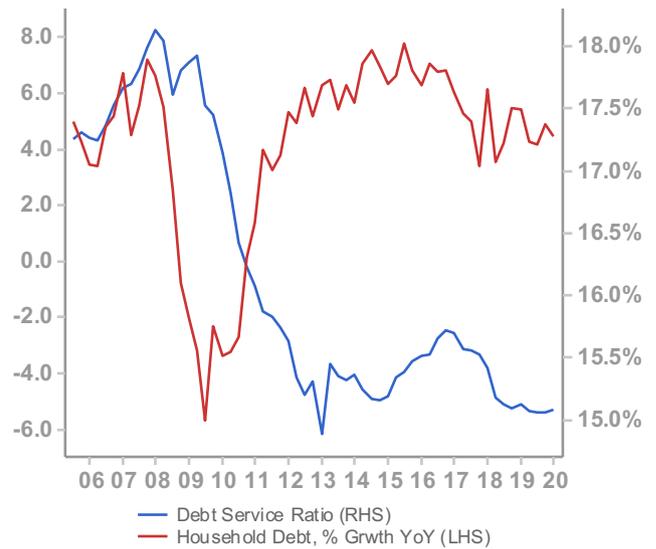
Source: FactSet

Figure 40: Personal Income and Savings Rate



Source: FactSet

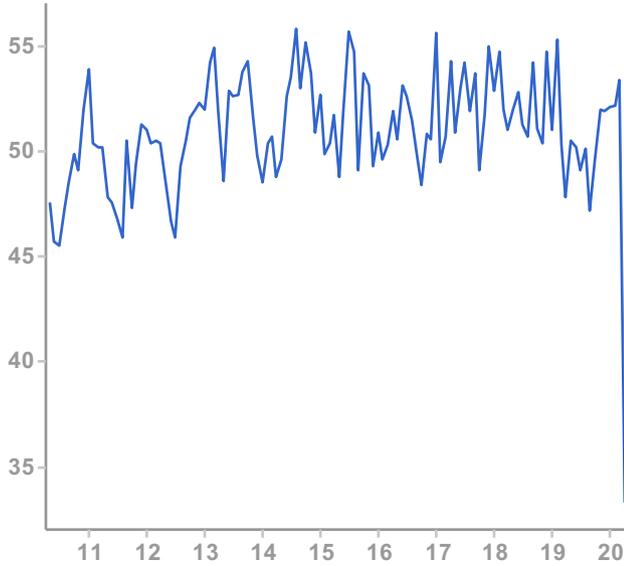
Figure 41: Household Debt



Source: FactSet

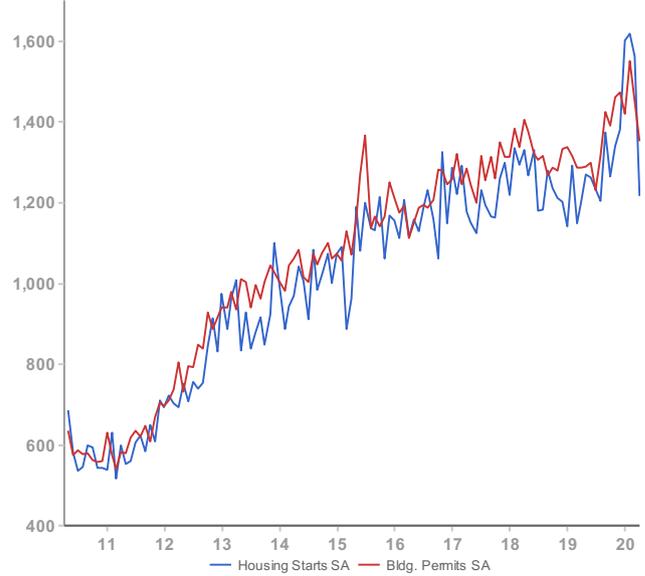
## Housing and Construction Indicators

Figure 42: Architecture Billings Index



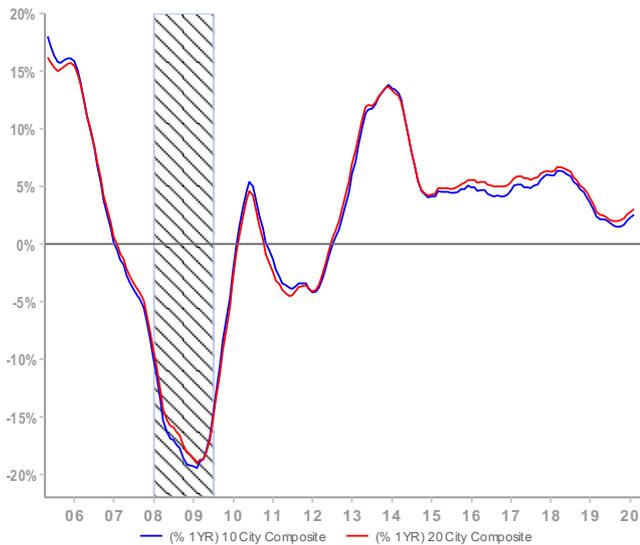
Source: FactSet

Figure 43: Housing Starts and Building Permits



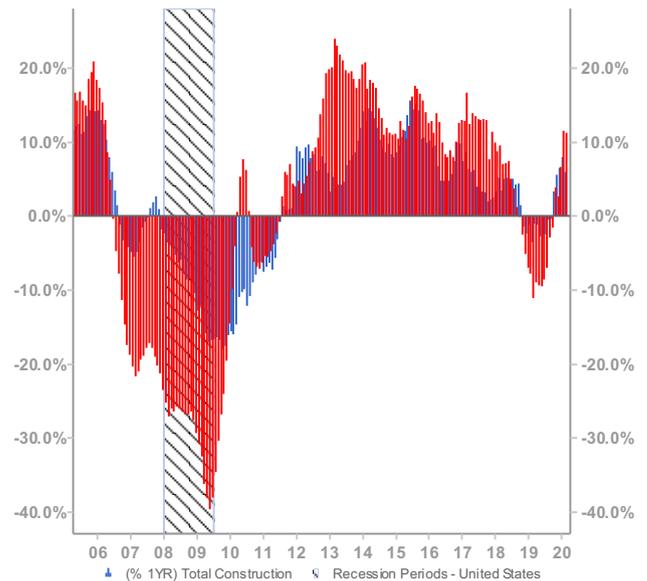
Source: FactSet

Figure 44: Case-Shiller 20-City & 10-City Index, % Chg YoY



Source: FactSet

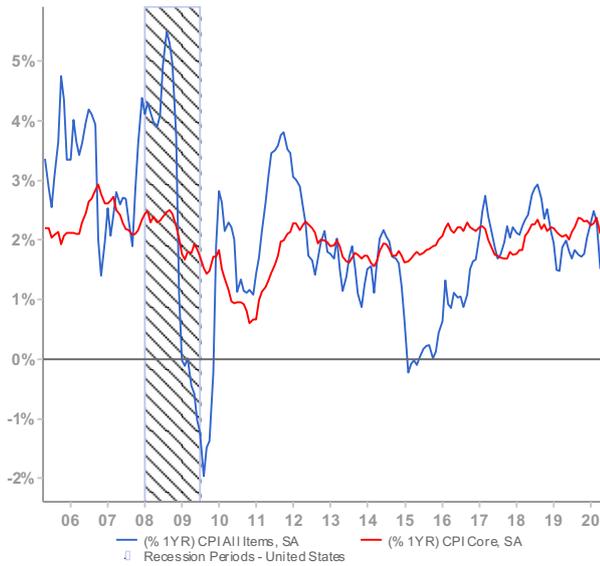
Figure 45: Private and Total Construction (% Chg YoY)



Source: FactSet

Price Indicators

Figure 46: Consumer Price Index



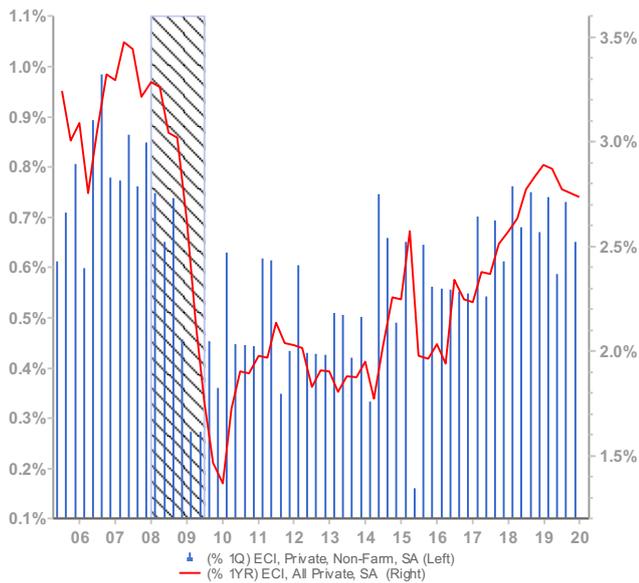
Source: FactSet

Figure 47: Producer Price Index



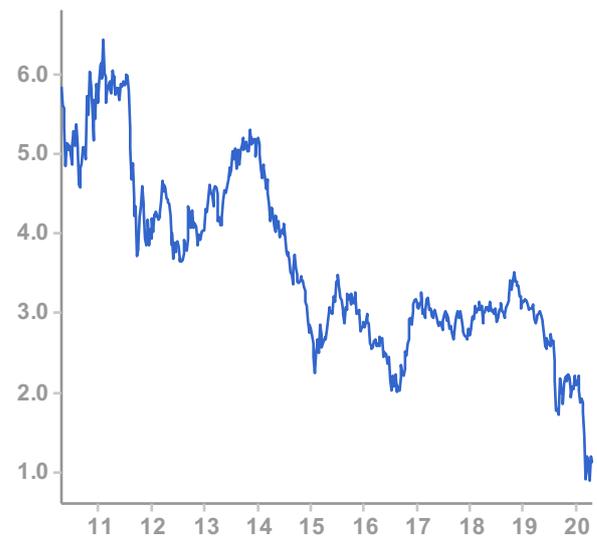
Source: FactSet

Figure 48: Employment Cost Index



Source: FactSet

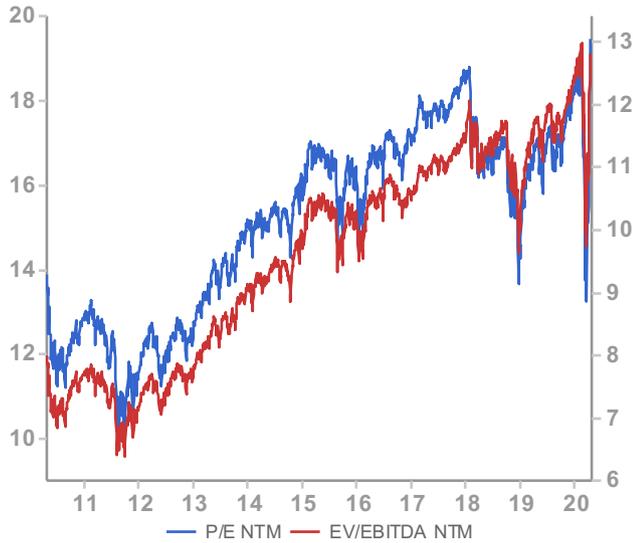
Figure 49: 10-Year, 5-Year Forward Inflation Expectations



Source: FactSet

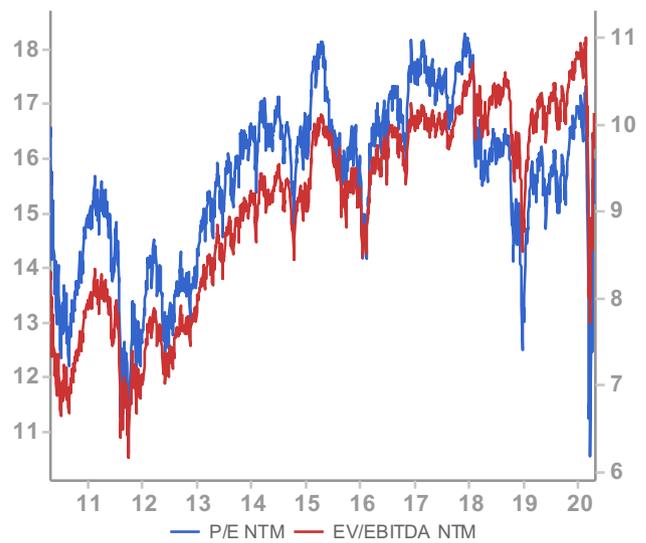
## Valuation Indicators

Figure 50: S&P 500 P/E (LHS) & EV/EBITDA (RHS)



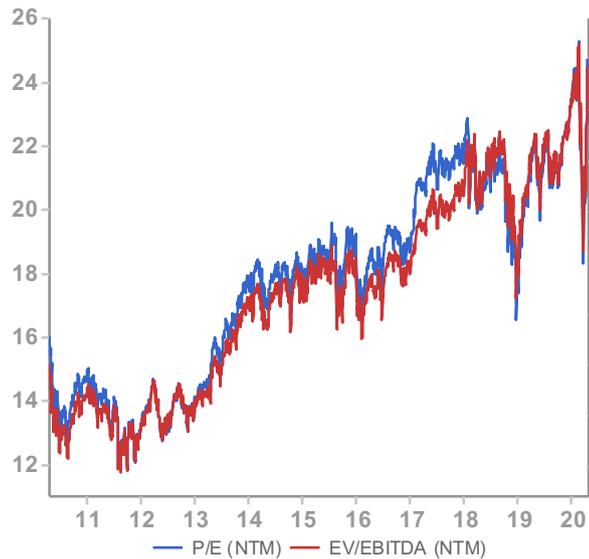
Source: FactSet

Figure 51: S&P Midcap 400 P/E (LHS) & EV/EBITDA (RHS)



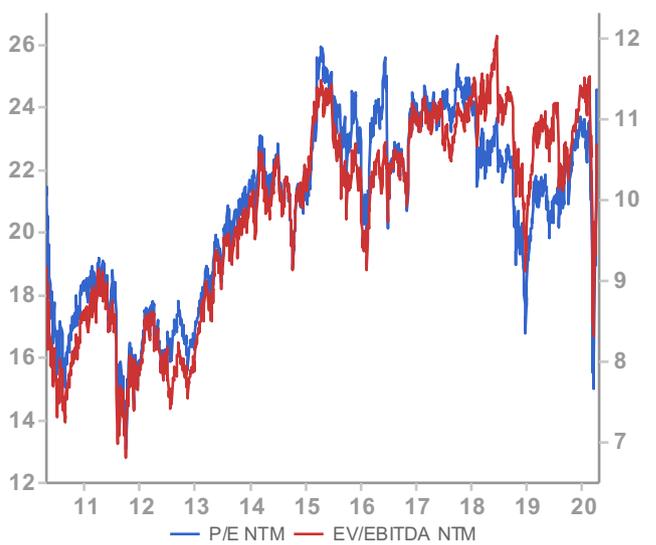
Source: FactSet

Figure 52: Nasdaq 100 P/E (LHS) & EV/EBITDA (RHS)



Source: St. Louis Federal Reserve, FRED Database

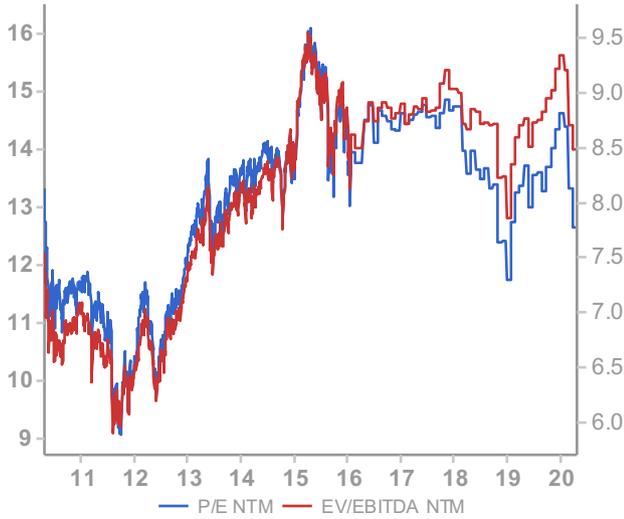
Figure 53: Russell 2000 P/E (LHS) & EV/EBITDA (RHS)



Source: St. Louis Federal Reserve, FRED Database

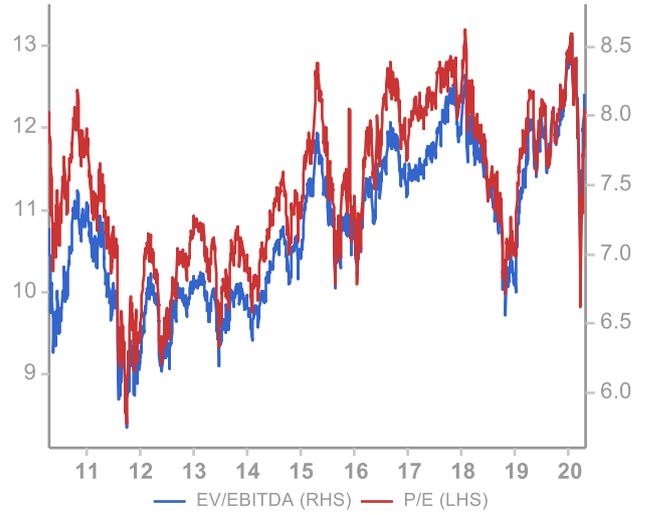
Valuation and Volatility Indicators

Figure 54: Intl Developed P/E (LHS) & EV/EBITDA (RHS)



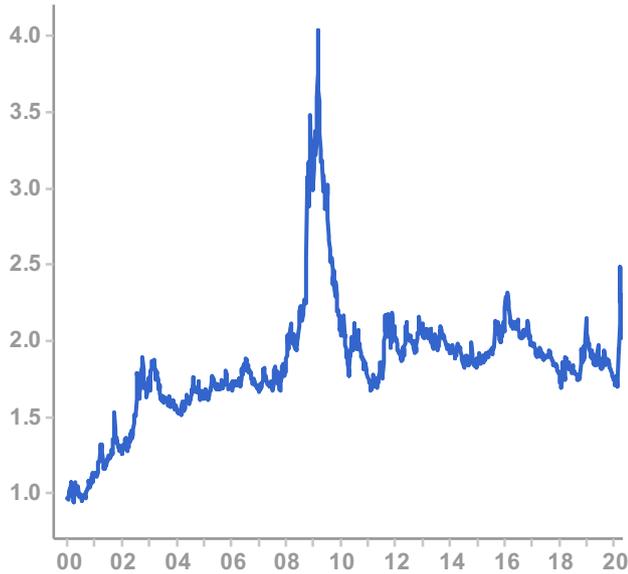
Source: Robert Shiller, Yale University, Rockingstone Advisors, Standard & Poor's

Figure 55: Emerging Markets P/E (LHS) & EV/EBITDA (RHS)



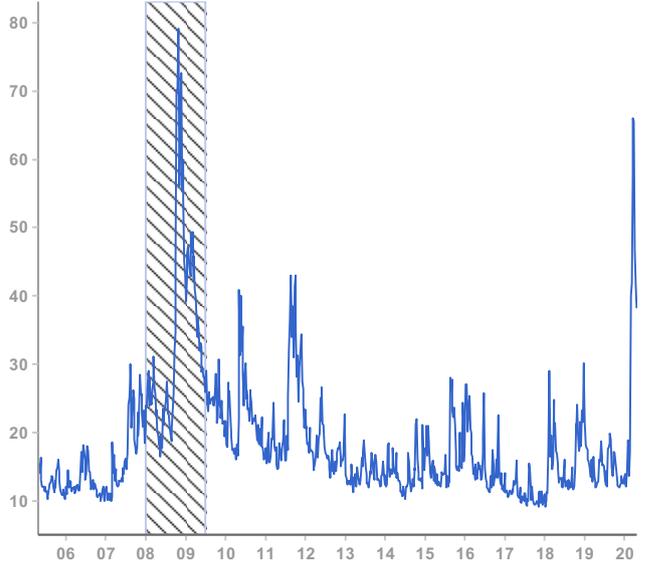
Source: Robert Shiller, Yale University, Rockingstone Advisors, Standard & Poor's

Figure 56: S&P 500 Dividend Yield



Source: FactSet

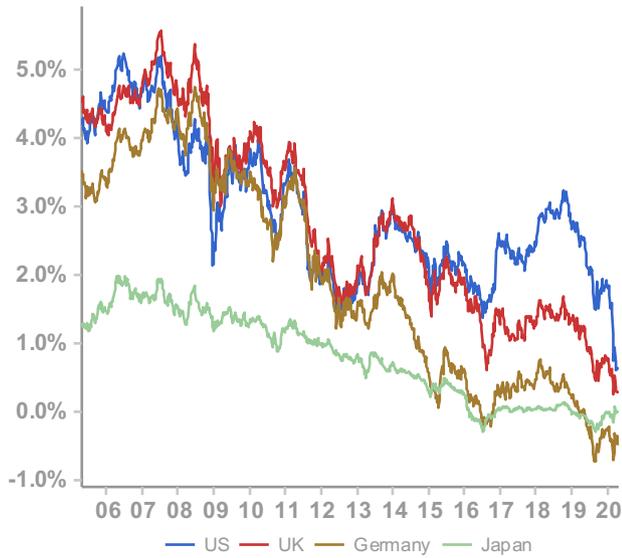
Figure 57: CBOE Volatility Index



Source: FactSet

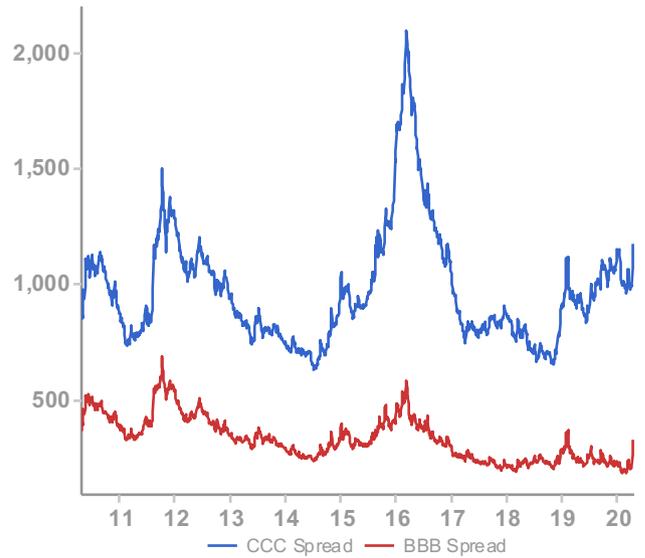
## Bond Market Indicators

Figure 58: 10-Year Global Bond Yields



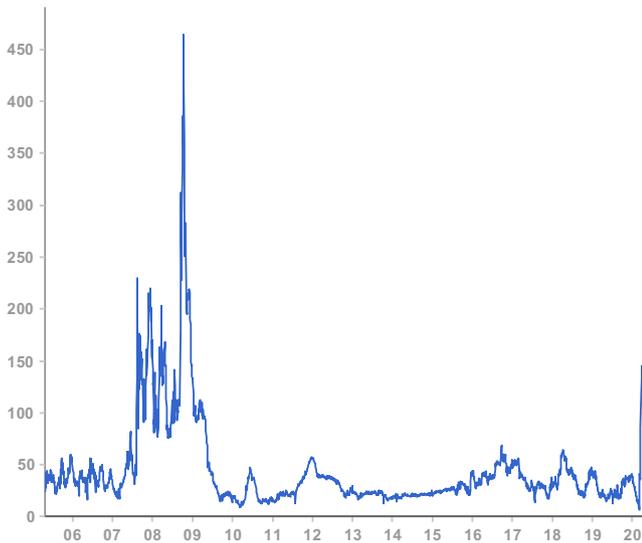
Source: FactSet

Figure 59: CCC and BBB Spreads (Option Adjusted)



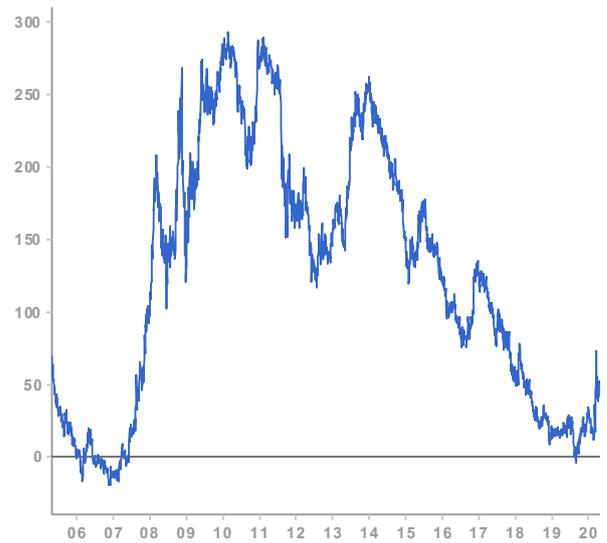
Source: FactSet

Figure 60: TED Spread (bps)



Source: FactSet

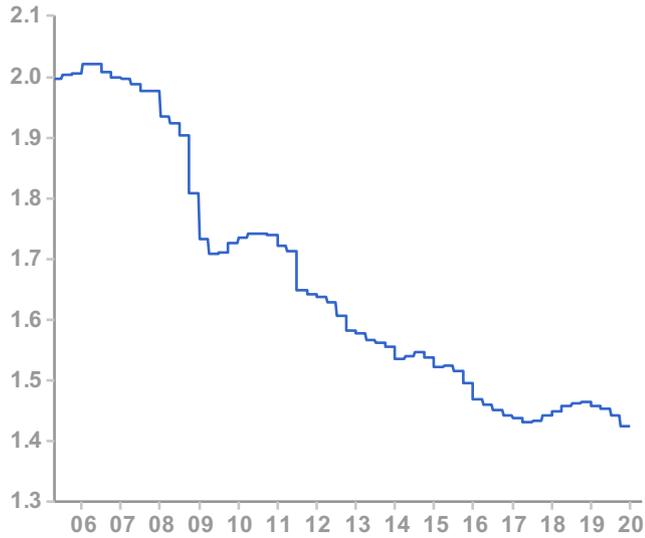
Figure 61: 10-Year Minus 2-Year Treasury



Source: FactSet

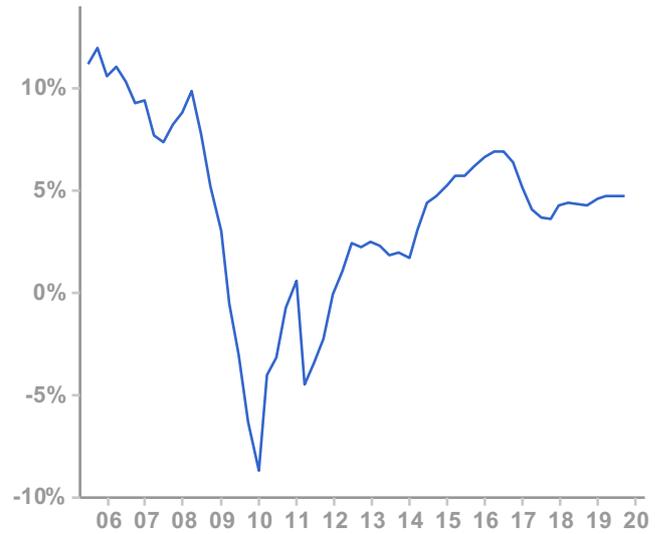
## Liquidity and Other Indicators

Figure 62: Velocity of M2 Money Stock



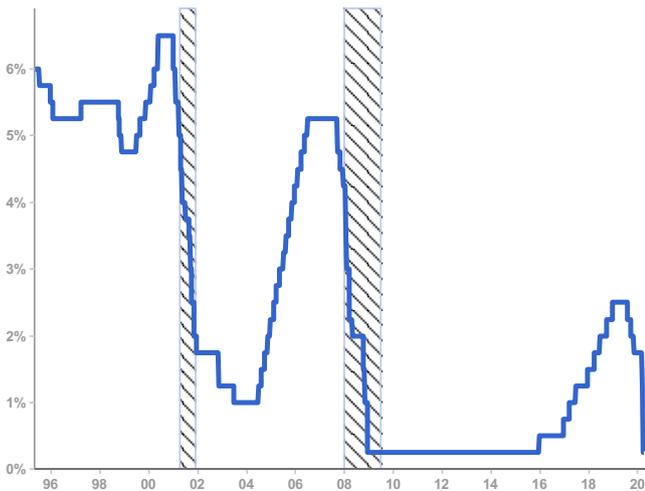
Source: FactSet

Figure 63: Loan Growth (Non-Financial, Private Sector)



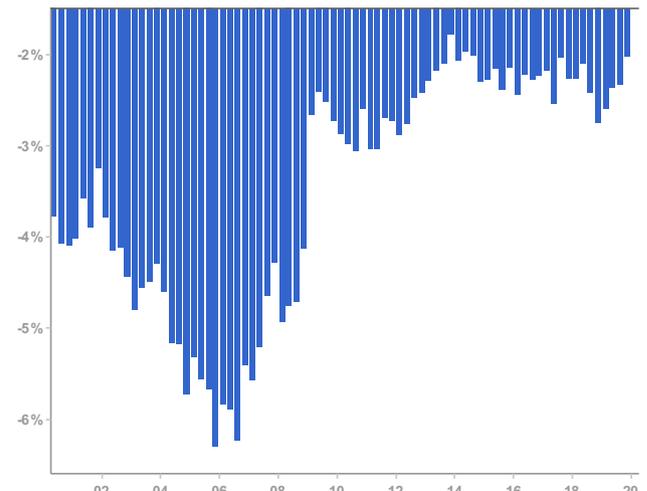
Source: FactSet

Figure 64: Fed Funds Target Rate



Source: St. Louis Federal Reserve, FRED Database

Figure 65: Current Account Deficit (as % of GDP)



Source: St. Louis Federal Reserve, FRED Database

# Appendix

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## Important Regulatory Disclosures and End Notes

Form ADV available upon request. This quarterly is only for informational purposes and not a solicitation to buy or sell securities or as a source of specific investment, legal or tax recommendations.

Rockingstone Advisors is solely responsible for the content of this Quarterly. The information and statistical data contained herein have been obtained from sources we believe are reliable but cannot guarantee.

Rockingstone Advisors performance charts depict the mean aggregate return of all accounts invested with a similar objective and risk tolerance during the entire return period; individual account performance may materially differ according to strategy and portfolio composition. Returns are calculated using time-weighted method (TWM) and are weighted by portfolio assets. Returns can be influenced not only by the actual performance of the underlying portfolios, but by the mix (composition) of portfolios in any given year and the number of portfolios within the sample set. Public equity returns are calculated by Morningstar based on information received from our custodian(s). Other investment returns, including private equity and real estate investments are calculated based on valuation data from parties other than Rockingstone Advisors or at cost. Fixed income returns generated by private notes are recognized when the cash coupon is paid, rather than on an accrued interest basis (except for PiK securities). Annualized return is based on portfolios invested as of June 1, 2009. The sample set of portfolios within each annual cohort has increased over time and the mix changes every year. Our investment returns may reflect investment opportunities that are unavailable to all of our clients, for reasons including: (i) certain funds in which we have invested are now closed to new investors, (ii) certain clients may not meet "accredited investor" standards, (iii) certain investments are available only to officers or directors of a business, and /or (iv) we may believe that historical returns most likely will not be generated by a specific security or strategy and thus are no longer allocating new capital to a specific security or strategy. Past performance is neither indicative of-- nor a predictor of-- future performance. Mean reversion is a powerful force, meaning periods of outperformance are typically followed by periods of underperformance. All figures are net of fees and expenses. Rockingstone's performance must be assessed in light of not just how we performed relative to the benchmarks, but how much risk we assumed in generating portfolio returns.

Quarterly Data prices are as of March 31, 2020; most other prices and yields are as of April 23rd, 2020.

We are happy to provide the raw data and source links for any of the charts or tables in this Quarterly. We are also happy to provide individual account performance data by annual cohort or by IRR (instead of TWM) so you can better understand the range of portfolio returns. We thank you for your interest and always appreciate any feedback.

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<sup>i</sup> Asset class performance charts depict Equity (SPY ETF), Bonds (BND ETF), Commodities (DBC ETF), Preferred (PFF ETF) and Real Estate (VNO ETF) price change plus dividends and interest during the selected period.

<sup>ii</sup> Rockingstone Advisors performance charts depict the mean aggregate return of all accounts invested with a similar objective and risk tolerance during the entire return period; individual account performance may materially differ according to strategy and portfolio composition. Returns are calculated using time-weighted method (TWM) and are weighted by portfolio assets. Returns can be influenced not only by the actual performance of the underlying portfolios, but by the mix of portfolios in any given year. Public equity returns are calculated by Morningstar based on information received from our custodian(s). Other investment returns, including private equity and real estate investments are calculated based on valuation data from parties other than Rockingstone Advisors. Fixed income returns generated by private notes are recognized when the cash coupon is paid, rather than on an accrued interest basis. Annualized return since inception is based on portfolios invested as of June 1, 2009. The sample set of portfolios within each annual cohort has increased over time. Our investment returns may reflect investment opportunities that are unavailable to all of our clients, for reasons including: (i) certain funds in which we have invested are now closed to new investors, (ii) certain clients may not meet “accredited investor” standards, (iii) certain investments are available only to officers or directors of a business, and /or (iv) we may believe that historical returns most likely will not be generated by a specific security or strategy and thus are no longer allocating new capital to a specific security or strategy. Past performance is not indicative or a predictor of future performance. Mean reversion is a powerful force, meaning periods of outperformance are typically followed by periods of underperformance. All figures are net of fees and expenses. Rockingstone’s performance must be assessed in light of not just how we performed relative to the benchmarks, but how much risk we assumed in generating portfolio returns.

<sup>iii</sup> Our Five-Year Forecast is updated quarterly and reflects our best judgment on future performance based on current valuations relative to historical valuations, as well as our outlook for earnings and macroeconomic conditions. We caution that predicting outcomes is inherently risky and subject to change.

<sup>iv</sup> Equity performance charts depict U.S. large-cap (SPY ETF), U.S. mid-cap (VO ETF), U.S. small-cap (IWM ETF), International Developed (VEA ETF), and Emerging Markets (VWO ETF) price change plus dividends and interest during the selected period. We note that Vanguard highlighted a trading glitch in the shares of VO during March 31, 2015 that led to prices materially higher than underlying NAV. Hence you should assume VO’s valuation and total return was inflated as of the end of the first quarter.

<sup>v</sup> Fixed income performance charts depict Intermediate Government (IEF ETF), High Yield Corporates (JNK ETF), High Grade Corporates (LQD ETF), International Corporates (PICB), and Emerging Markets bonds (EMB ETF) price change plus interest income earned over the selected period.

<sup>vi</sup> Commodity performance charts depict Precious Metals (DBP ETF), Base Metals (DBB ETF), Oil (DBO ETF), and Agriculture (DBA ETF) price change.