Market Perspectives: 1st Quarter 2020

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Instrument Flight Rules

On January 1st, China informed the American government that a new pathogen, soon to be called the coronavirus, had been discovered in Wuhan, China. Its toxicity and infection rates were still unknown but soon proved to be far more virulent than many prior viruses. There was no medical cure. Epidemiologists warned that a global pandemic could result. The contagion in China soon traveled to the rest of the world with grievous loss of life and economic wealth. The world plunged into a dark place that has yet to be resolved.

The dilemma posed by the virus to the leaders of a country is to protect human lives from infection while saving jobs and supporting the economy. But the mathematics of an epidemic is unforgiving. Infection rates compound if unchecked. Early stage containment and social distancing policies are the only available methods for controlling the course of the epidemic. The coronavirus was like nothing in anyone's experience and posed a serious political problem. Politicians, media, and the public preferred to ignore the severity of the threat to life and wealth.

As late as mid-February, Wall Street was complacent with the S&P 500 index rising more than 4.8% since the beginning of the year. The eleven-year bull market showed no sign of ending, the economy was strong, Treasury rates were at historic lows, the Federal Reserve was on a glide-path through to the election, unemployment was extremely low, inflation was stable, the impeachment trial was over, and Presidential primaries were ending.

Markets

The Dow reached its historic high on February 12th. About that time, the scale of the pandemic in other countries began to emerge into public consciousness. Wall Street stocks took just sixteen trading days to tumble 20%, eclipsing the previous record as the fastest fall into a bear market. The S&P ended the quarter down 20%, the worst first quarter in history, and nearly the worst since the Great Depression. The VIX reached historic highs and MSCI ACWI was down 22%. The market exhibited extreme volatility through the end of the quarter, with eleven trading halts in ten days. Fixed income was mixed. While US Treasurys, up nearly 22%, were the haven asset of choice, the Barclays US Corporate Index fell 3.63%.

Political Reality

On March 31, the President acknowledged authoritative projections of 100,000 to 240,000 deaths in the United States from the virus pandemic, the most of any country, with daily deaths peaking in mid-April. Many parts of the country found themselves highly unprepared for the onslaught of medical resources and personnel needed to

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About New Frontier

New Frontier is a Boston-based institutional research and investment advisory firm specializing in the development and application of state-of-the-art investment technology. Founded in 1998 by the inventors of the world's first broad spectrum, patented, provably effective portfolio optimization process, the firm continues to pioneer new developments in asset allocation and portfolio selection. Based on practical investment theory, New Frontier's services help institutional investors across the globe to select and maintain more effective portfolios.

More information is available at newfrontieradvisors.com

care for infected patients. The most optimistic projections assumed country-wide rigid social distancing policy through the end of May.[1] By the end of the quarter most, but not all, states and cities had a social distancing policy in place. Deaths from the pandemic are projected to continue well into the Fall.

Social distancing is a politically fraught decision for any political leader. It necessitates a virtual shut down of the economy with only essential firms allowed to function. 10 million Americans filed for unemployment insurance in the last two weeks of March, with many more to follow into the second quarter.

The Federal Reserve

On March 15th, the Fed went all in by announcing emergency monetary policies designed to stem the enormous losses in jobs that occurred in the Great Recession. It reduced the Fed Funds rate overnight by 1% to essentially zero, pledged to buy as much government-backed debt as needed to restore normal functioning in the markets for housing and Treasury bonds, and buy longer-dated corporate debt including the riskiest investment grade bonds, for the first time in its history. It announced two new programs to provide bridge financing for investment grade companies and purchase already-issued debt that has become hard to trade, including bond ETFs. It also resurrected a loan facility for lending to small businesses and a main street program to support lending to small- and medium-sized businesses. In spite of the dramatic effort by the Fed to support the American economy, the Dow dropped 13% the day following the announcement, the worst point loss in its history.

The CARES Fiscal Stimulus

By the end of the quarter, the terror of the pandemic and its consequences were no longer being ignored in Washington. In a truly remarkable bipartisan effort, a $2.2T fiscal stimulus program – The Coronavirus Aid, Relief, and Economic Security Act (CARES) – passed into law on March 27th. It was the largest such fiscal stimulus program in history. About $500B will be directed to the Federal Reserve emergency lending program. It is claimed these funds can be leveraged to have the impact of $6T stimulus funds. The package includes disbursements of small amounts to individuals, adds to unemployment benefits with expanded eligibility, $350B in loans to small businesses, and $500B in bailout money to large companies, with restrictions on how businesses can use the money.

"Everybody understands that this is an absolute desperation measure for the whole country," said Rep. Raskin (D-MD). "We have tens of millions of people being thrown out of work. The hospitals are stressed to the point of collapse. The states and cities

[1] https://covid19.healthdata.org/projections. State-by-state projections are also available.

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New Frontier Portfolios

New Frontier develops and manages a broad range of ETF asset allocation portfolios for advisors and their clients, and currently oversees over $3 billion in global ETF asset allocation portfolios.

are completely overburdened, the public health systems are on the precipice. So, you know, there's really no choice."[2] As a footnote, another stimulus package is already being discussed.

An Important Perspective

As dire as the pandemic is for economic growth and financial wealth, it is not a repeat of the Great Depression. America has far more wealth than it did in the 30s. Its financial and economic institutions are far better structured. The country remains one of the elite technologically sophisticated countries in the world. If many parts of the economy are shut down, many others are operating virtually via the internet and video conferencing. Very simply, 2020 is not 1930.

Investing in Unforecastable Risk

No one predicted the emergence of the coronavirus in China or its impact on the global economy and capital markets. The virus is an exogenous risk that is not part of any quant model for investing, an economic model for managing an economy, or a valuation framework for financial securities. Floods, hurricanes, earthquakes, and volcano eruptions are examples of unforecastable risks for financial markets. But unforecastable risk is also an everyday part of our lives. Each moment in time is different from all others and not repeatable. Every time I drive to work there is no guarantee I will arrive. We use routine to manage uncertainty. But routines are disrupted each day of our lives even though we often just ignore it. How to accurately forecast how much a project will cost, how long it will take to market, what competition will exist, and whether consumer sentiment will have changed?

Given social, political, and economic uncertainty, how should an investor respond to the downturn in the market and portfolio losses going forward? There are three common reactions: 1) cash out; 2) stay the course; 3) rebalance to optimal. Each can be a perfectly rational response to current financial market uncertainty.

Cash Out

Investing has to do with setting aside savings for future needs. The key principle in a well-defined investment program is that savings will not be needed for a period of time for current needs, and losses should not disrupt an investor's life objectives. Understandably, a significant downturn in the market can be an emotional issue for many investors. The usual mantra is "don't panic." But if the risk of further loss of invested capital may have life changing implications, cashing

[2] Linskey, Annie. "The Left Makes a Grudging Peace with Massive Rescue Package." The Washington Post, WP Company, 27 Mar. 2020, www.washingtonpost.com/politics/the-left-makes-a-grudging-peace-with-massive-rescue-package/2020/03/27/1d63b9a4-6f84-11ea-a3ec-70d7479d83f0_story.html.

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out may make perfect rational sense. Examples include investors who may have a limited investment horizon due to age or health.

Stay the Course

Investment managers often advise clients to stay the course and not withdraw savings. One reason is that panic selling is often ill-advised. Markets may often reverse and reward a bit of patience, but there is no guarantee that losses could not continue to grow. Of course, it should be noted that managers have a vested interest in clients not withdrawing their money. Managers may sometimes rationalize staying the course based on academic assumptions that capital markets have a persistent risk structure over time, and will inevitably rebound and regress to the mean. But good investors know that markets are not static and necessarily reflect changes in domestic and global economic trends and risks. Consider the impact of the internet, the iPhone, the rise of the Chinese economy in global markets, or changes in the value of oil and the impact of electric cars. While experience does teach that markets tend to return to normal functioning, the equilibrium that results may often be of a very different character than what it was before major disruptions.

Rebalance to Optimality

Investors should always strive to invest in a risk-return efficient portfolio. This objective is independent of changes in the market and economy. The sensible path is to rebalance to optimality so that the portfolio is appropriately positioned for weathering any further risks.

While rebalancing to optimality is generally desirable, the problem that arises is how to define portfolio "optimality." The theoretical framework for defining portfolio optimality was given by Markowitz.[3] But the process of delivering a portfolio that is currently risk-return optimal requires data management, sophisticated optimization, and portfolio management technology. The recourse to the investor is to find a professional manager that can provide appropriately rebalanced optimal portfolios for investment.

The patented Michaud efficient frontier is designed to represent the locus of all optimal uses of current information. The investor can then choose among the optimal portfolios the level of systematic risk that best reflects their long-term investment objectives. Depending on circumstances, an investor may want to adjust systematic risk by sliding up or down the efficient frontier in response to the current investing environment.

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[3] Markowitz, Harry. 1952. "Portfolio Selection." *The Journal of Finance*, 7(1): 77-91.

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Target Date or Target Risk?

The two main categories of professional asset allocation strategies are target-date and target–risk. In the case of target-date funds, the portfolios are designed to reduce systematic risk or the stock/bond ratio, as the maturity date approaches. The maturity date is generally a function of the age of the investor. In contrast, a target-risk asset allocation allows the investor to choose a specific stock/bond ratio efficient frontier portfolio for investment.

For target-date investors, in spite of major disruptions in markets such as the coronavirus pandemic, there is no notion of optimizing the current portfolio relative to changes in market conditions for the duration of the maturity period. Esch-Michaud (2014) also note that the glide path of a target-date fund is often irrelevant to performance.[4]

In contrast, New Frontier rebalanced all target risk portfolios at the end of March. The rebalancings reflected the many changes in data and relationships in the market. Our rebalancings were mandated not by maturity date, but by our patented portfolio management rebalancing technology. We took advantage of locking in gains in some fixed income securities to rebalance the portfolios across the efficient frontier. New Frontier investors can be assured that our portfolios represent the most recent information for defining optimal risk targeted portfolios.

Research Announcement

The following webinar presentation of "Is Quant Fundamentally Flawed?" is scheduled for April 16th, sponsored by the CFA Society Boston. It is based on a forthcoming paper in the *Journal of Investing*.[5] Click here to register. The preprint is available on SSRN.com, ResarchGate.com, and our website. The summary is given below:

> In a forthcoming paper in the *Journal of Investing*, we present important new research on the likely limitations of a number of popular active quant investment strategies. For nearly thirty years, textbooks, formal university courses, journal articles, conferences, and institutional marketing have touted claims of applications of the Grinold (1989) "Fundamental Law" theory that may add investment value to optimized strategies even when only a small level of information is available. We show that many popular strategies associated with Grinold theory are likely unreliable and self-defeating. This is because estimation error (Michaud 1989) and constraints required in practical application are ignored. We show that far more information than commonly assumed and appropriate portfolio structure are likely necessary for outperformance in practice.

April 6, 2020

[4] Esch, David. and Michaud, Robert. 2014. "The False Promise of Target Date Funds." *Journal of Indexes*, (17)1: 50-59.
[5] Michaud et al. 2020. "Estimation Error and the 'Fundamental Law of Active Management': Is Quant Fundamentally Flawed?" *Journal of Investing* (forthcoming).

DISCLOSURES: Past performance does not guarantee future results. As market conditions fluctuate, the investment return and principal value of any investment will change. Diversification may not protect against market risk. There are risks involved with investing, including possible loss of principal. The indices are not investable securities. Any investable security would have performance reduced by fees. The methodology described in this document are protected by U.S. patents 6003018, 6928418, 7412414, and 7624060. Worldwide patents are pending. Inventors of Michaud Optimization and the New Frontier logo are trademarks of New Frontier. Registered in the U.S. and other countries and may only be used with permission.