Lessons for and from COVID-19 for investors and their advisors

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Abstract
COVID-19 was a shock to financial markets. On March 23, 2020 the S&P 500 index had fallen by over 31% from its closing value on the first trading day of the year and the NASDAQ index fell nearly 25%. Volatility increased. The CBOE VIX Index and trading volume spiked in March and remained elevated. But by mid-November, the S&P 500 index was above its beginning of the year value by 10% and the NASDAQ index was 30% above. During large market declines, history tells us that investors can be rewarded if they buy, while withstanding the urge to sell. Surveys of investors, as well as those who provide investment advice, suggest that these history lessons were known and those who followed them, were well-served. However, the COVID-19 pandemic reinforces these lessons for investors and their advisors when encountering the next large market decline.

Keywords
COVID-19, financial planning, investments, stock market

JEL Classification
G11; G12; G51; L84

1 INTRODUCTION

The 2020 COVID-19 global pandemic was an enormous shock to financial markets. On January 30, 2020 a “public health emergency of international concern” was declared by the World Health Organization (WHO). The next day, the U.S. Secretary of Health and Human Services declared a public health emergency for the United States. Within that same time period, the S&P 500 index closed at a record high while news about the virus was beginning to circulate. However, as more and more news regarding the spread of the virus was making its way to the United States during the week of February 28, the market saw the largest weekly decline since the 2008 Financial Crisis. On March 9, a market-wide Level 1 circuit breaker was triggered by declines in the S&P 500. On March 20, 2020, the governors of Illinois and New York announced stay-at-home orders. The S&P 500 index fell by 31% from its closing value on the first trading day of the year to its closing low on March 23, 2020. The NASDAQ index fell nearly 25%. On March 23, 2020, the Federal Reserve announced numerous measures to support the economy and financial markets. By mid-November 2020, however, the S&P 500 index was above its beginning of the year value by 10% having increased by over 60% from its March low. Correspondingly, the NASDAQ index was 30% above its value at the beginning of the year having increased by over 72% from its March low. Volatility measures such as the Chicago Board Options Exchange (CBOE) VIX index also increased substantially. The VIX began 2020 at about 12.5% and reached values over six times that in March. The VIX remained elevated compared to January to mid-February values with October and November values averaging in the high twenties.
Historical data tells us that investors should not sell during large market declines. Recent surveys of investors and financial advisors also suggest that, in general, investors would not sell during a large market decline and that advisors were providing advice not to sell. I analyze if the lessons of avoiding the temptation to sell and rebalancing during the depths of the stock market decline are illustrated in the recent episodes of large stock market declines and subsequent recoveries. I also evaluate if the COVID-19 market thus far is consistent with these lessons.

## 2 | FINANCIAL MARKET REACTIONS TO COVID-19

### 2.1 | Stock market indexes

Table 1 summarizes the return on five market indices: the S&P 500, the NASDAQ, the FTSE 100 (the U.K.), the Nikkei 225 (Japan), and the STOXX 600 (Europe). While the focus here is on U.S. markets, the non-U.S. markets are included to illustrate the same COVID-19 market reactions around the globe. The first return is measured from the close of the market on the first trading day of January 2020 to the close on March 23, 2020. The second return is measured from the close on March 23, 2020 to the close on November 13, 2020. The third return is measured over the entire period, from January to mid-November 2020. March 23, 2020 was the low close for the S&P 500, the NASDAQ, and the FTSE. For the Nikkei the low close was March 19, 2020 and for the STOXX this was March 18, 2020. March 23, 2020 is used in all cases for consistency.

A clear picture emerges. A precipitous drop in stock values occurred in a short time. In the first period, the S&P 500 return was $-31.3\%$, the NASDAQ was $-24.5\%$, the FTSE was $-34.3\%$, the Nikkei was $-27.2\%$, and the STOXX was $-33.2\%$. A large increase occurred after the March lows. The S&P 500 return was 60.2\%, the NASDAQ 72.4\%, the FTSE 26.5\%, the Nikkei 50.3\%, the STOXX 37.3\%. Finally, for the nearly 11-month period the S&P 500 return was 10.0\%, the NASDAQ 30.1\%, the FTSE $-16.9\%$, the Nikkei 9.4\%, the STOXX $-8.2\%$. The difference between the S&P 500 and the NASDAQ returns suggests that individual stocks and industry sectors were affected in different ways. The takeaway from Table 1 is clear. Compared to doing nothing, selling near the market low was a decision that investors would soon regret. Moreover, buying near the market low was rewarded.

### 2.2 | Industry sector differences

Broad market index returns provide an appropriate big picture perspective of the returns earned by investors holding diversified stock portfolios. However, a disaggregated examination is useful as well. Industry sector differences are examined with industry sector ETFs. These 11 are used: Communication (XLC), Consumer Discretionary (XLY), Consumer Staples (XLP), Energy (XLE), Financial (XLF), Health (XLV), Industrial (XLI), Materials (XLB), Real Estate (XLRE), Technology (XLK), and Utilities (XLU). Table 2 summarizes industry and index ETF returns. In Table 2, the holding period return calculations include dividends in addition to the capital gains or losses. Two index-tracking ETFs are shown for comparison: SPY tracks the S&P 500 and ONEQ tracks the NASDAQ Composite. The more familiar QQQ ETF tracks the NASDAQ 100, a subset of the NASDAQ Composite. The returns of ONEQ and QQQ track closely but are not identical. The year-to-date S&P 500 Index return in Table 1 is 10.0\%, and the SPY return in Table 2 is 11.5\%. The year-to-date NASDAQ Index return in Table 1 is 30.1\%, and the ONEQ return in Table 2 is 30.7\%. The dividends included in the ETF returns, and any tracking error, would cause differences between the ETF return and its underlying index return.

The differences in returns across all three periods in Table 2 are remarkable. In the decline period, the two best (least negative) performers were Technology ($-13.5\%$) and Consumer Staples ($-21.7\%$). The two worst performers were Energy ($-60.2\%$) and Financial ($-42.7\%$). In the March to November period the two best performers were Materials (81.5\%) and Industrial (77.1\%). The two worst (least positive) performers were Consumer

| Index     | January–March 23 | March 23–November 13 | January–November 13 |
|-----------|------------------|----------------------|---------------------|
| S&P 500   | $-31.3\%$        | 60.2\%               | 10.0\%              |
| NASDAQ    | $-24.5\%$        | 72.4\%               | 30.1\%              |
| FTSE      | $-34.3\%$        | 26.5\%               | $-16.9\%$           |
| Nikkei    | $-27.2\%$        | 50.3\%               | 9.4\%               |
| STOXX     | $-33.2\%$        | 37.3\%               | $-8.2\%$            |

**Table 1** Index returns during 2020
Staples (40.6%) and Energy (48.2%). Using year-to-date returns, the two best performers are Technology (30.7%) and Consumer Discretionary (21.7%), and the two worst are Energy (−41.4%) and Financial (−11.6%).

Table 2 results make clear that investors should not have sold stock near the market lows, but instead should have maintained their positions. Even better would have been to increase stock holdings to obtain the large returns in the recovery period. The diversified SPY ETF provides a measure of what diversified investors lost by selling at the lows or gained by buying at the lows. Table 2 results also make clear that an investor who bought at or near the market lows could have done better than SPY with a judiciously selected industry sector fund or with the less-diversified ONEQ with its heavy technology tilt. In the recovery period, three sector funds (Materials, Industrial, Consumer Discretionary) performed better than SPY. These funds also performed better than ONEQ. But eight funds did worse. Year-to-date, four sector funds (Technology, Consumer Discretionary, Communication, Materials) performed better than SPY, but none outperformed ONEQ (XLK had the same return of 30.7%).

### Table 2

| Industry ETF | January–March 23 | March 23–November 13 | January–November 13 |
|--------------|------------------|----------------------|---------------------|
| Communication (XLC) | −25.5% | 59.6% | 18.8% |
| Consumer discretionary (XLY) | −30.7% | 76.0% | 21.7% |
| Consumer staples (XLP) | −21.7% | 40.6% | 9.9% |
| Energy (XLE) | −60.2% | 48.2% | −41.4% |
| Financial (XLF) | −42.7% | 54.7% | −11.6% |
| Health (XLV) | −26.6% | 51.4% | 11.0% |
| Industrial (XLI) | −40.8% | 77.1% | 4.5% |
| Materials (XLB) | −36.4% | 81.5% | 15.1% |
| Real estate (XLRE) | −32.9% | 49.3% | −0.1% |
| Technology (XLK) | −13.5% | 51.5% | 30.7% |
| Utilities (XLU) | −28.8% | 49.3% | 5.8% |
| S&P 500 (SPY) | −30.9% | 61.8% | 11.5% |
| NASDAQ (ONEQ) | −24.5% | 73.3% | 30.7% |

### Table 3

| Individual Stock | January–March 23 | March 23–November 13 | January–November 13 |
|------------------|------------------|----------------------|---------------------|
| Carnival Cruises (CCL) | −75.6% | 33.4% | −67.8% |
| Southwest Airlines (LUV) | −38.2% | 30.1% | −19.7% |
| Amazon (AMZN) | 0.2% | 64.4% | 64.8% |
| Zoom Video (ZM) | 132.2% | 152.9% | 487.3% |

#### 2.3 Individual stock examples

The industry sector differences imply that individual stocks experienced a large variation in returns during 2020. To illustrate, four stocks are examined in Table 3: Carnival Cruises (CCL), Southwest Airlines (LUV), Amazon (AMZN), and Zoom Video (ZM). These were not selected at random. Carnival Cruises and Southwest Airlines, and travel-related businesses generally, were negatively impacted by COVID-19. Although both CCL and LUV experienced significant returns after the market lows in March, the year-to-date returns for both are large negative values. For CCL this is −67.8% and for LUV this is −19.7%. Conversely, ordering products online for home delivery from AMZN increased with COVID-19, as did the use of the technology services of ZM. The year-to-date return for AMZN is 64.8%, and for ZM is 487.3%. Both returns are well above the SPY and ONEQ and all the sector ETF returns from Table 2. The ZM returns are remarkable, particularly the 132.2% first period return. Table 3 shows potential gains from judicious individual stock selection as compared to the use of a diversified index fund such as SPY.
2.4 Bond markets

The focus thus far has been on the stock market. For many, bonds are part of their overall portfolio. How did these perform during 2020? Two bond ETFs can illustrate. MUB is the National Municipal bond fund. AGG is the Core U.S. Aggregate Bond fund. It holds investment-grade corporate bonds. Table 4 shows their returns. Municipal bonds declined in value during the early COVID-19 period. This decline in value reflected concern with an increase in default risk. The corporate bond fund had a small but positive return in the early period. After late March both funds had positive returns. Year-to-date the funds provided single-digit positive returns that are close to what would be the expected return on these bond portfolios in normal times, given their risk. The bond funds served their purpose of providing income, and providing stable value, albeit with some interim fluctuation in value.

3 MARKET VOLUME, VOLATILITY, AND GOLD

The focus of stock investors is generally on prices and therefore returns. These returns measures were detailed in the previous section. A full picture of the markets in 2020 must include an assessment of volume, volatility, and fear/panic. Thus, I also analyze data on trading volume, the VIX, and the price of gold.

3.1 Trading volume

Were the stock price decreases and increases in 2020 associated with higher than usual, lower than usual, or about normal trading volume? Table 5 answers that question. The monthly average of daily trading volume is shown for the S&P 500 Index and the NASDAQ Index. It is also shown for two of the individual stocks used earlier, LUV and AMZN. The S&P volume was much higher in March than the other months. After March, all months had higher volume than January. NASDAQ volume was highest in June, with March the second highest. All other months had higher volume than in January. AMZN had a similar pattern as the S&P with March the highest volume month. May, June, and August had similar volume as in January. LUV had a somewhat different volume pattern. March volume was much higher than in January and February. But the April through June volume was well above the March volume. When LUV stock was recovering, its trading volume was higher than when it was declining.

Two points are worth mentioning regarding trading volume statistics for individual stocks. First, volume statistics represent the number of shares transacted, not the dollar value of the transactions. Comparisons across stocks need to be viewed with that in mind. Table 5 shows the LUV volume of shares transacted was generally well above the AMZN volume. It was higher by a factor of seven in May. However, given the difference in the stock prices per share, the dollar value of the transactions for AMZN far exceeds those of LUV. The price of a share of AMZN started 2020 at about 35 times that of LUV, and by July 2020 is was about 85 times that of LUV. This puts the trading volume measured in shares in better perspective. A second point is that volume statistics scaled by the shares outstanding measure the selling activity of existing shareholders. LUV has about 590 million shares. On a typical day in January 2020, volume was 1% of those shares. In May 2020, this was between 5% and 6%. AMZN has about 500 million shares. During March 2020, average daily trading volume averaged 1.5% of shares.

| TABLE 4 | Bond fund returns during 2020 |
|----------------------------------|-----------------------------|
| January–March 23                 | March 23–November 13        | January–November 13 |
| Municipal bonds (MUB)            | –8.1%                       | 12.9%                | 3.7%             |
| Corporate bonds (AGG)            | 0.4%                        | 6.0%                 | 6.3%             |

| TABLE 5 | Monthly average of daily trading volume, S&P 500, NASDAQ, LUV, AMZN (millions of shares) |
|----------|------------------------------------------------------------------------------------------|
| S&P 500  | NASDAQ                                   | LUV    | AMZN  |
| January  | 3,672                                    | 2,498  | 5.0    | 4.0   |
| February | 4,436                                    | 2,823  | 4.7    | 4.8   |
| March    | 7,355                                    | 4,403  | 11.2   | 7.4   |
| April    | 5,865                                    | 3,747  | 21.4   | 5.9   |
| May      | 5,340                                    | 3,817  | 28.0   | 4.1   |
| June     | 5,956                                    | 5,066  | 26.0   | 4.0   |
| July     | 4,418                                    | 4,287  | 13.6   | 5.8   |
| August   | 4,019                                    | 3,743  | 12.2   | 4.0   |
| September| 4,385                                    | 3,908  | 11.8   | 5.5   |
| October  | 4,079                                    | 3,538  | 9.1    | 5.1   |
| November | 5,178                                    | 3,984  | 11.8   | 5.6   |
3.2 | The VIX

The VIX is the Chicago Board Options Exchange (CBOE) volatility index. This is a popular fear measure (Whaley, 2000). Table 6 shows average of the daily closing values for the VIX from January through mid-November. While the year started with low volatility, this quickly ended. On February 24, the VIX closed above 20 for the first time in 2020. The VIX has not been below 20 through mid-November of 2020. The VIX rose substantially in March, hitting a closing high of 82.7 on March 16. It decreased each subsequent month after March until September. The September, October, and November averages, in the high twenties, remain well above the January and February averages. For further perspective, the VIX closing daily average in 2019 was 15.4. The VIX continued to reflect some heightened volatility or fear in the market as 2020 nears its end.

Past episodes of market decline will be reviewed in a later section. But it is worth mentioning at this point that the VIX had a closing high of 80 in October of 2008 during the financial crisis. This value is close to its maximum value during March 2020.

3.3 | Gold

Table 7 shows the returns on an exchange traded fund (GLD) that tracks the price of gold. Gold held its value in the first few months of the year with a 1.6% return. With stock values decreasing, gold served its purpose of not decreasing. GLD provided a return of 21.1% in the period after the market lows. This is well below the returns of all the sector and index ETFs during that time. Recall that the VIX remained at elevated levels as the market recovered, signaling remaining volatility and fear. The continued rise in GLD as the market recovered is a similar signal. Gold prices and stock prices rising at the same time is not a paradox. Johnson and Lamdin (2016), among others, show that gold and stock returns have a low correlation historically, but not necessarily a negative one.

Table 8 shows the level of the monthly average of the closing daily GLD ETF price. A curiosity is that the monthly average GLD price did not spike in March as did the VIX. An increase from April through August is evident. After August there is minor decline. The continued elevated price of GLD compared to its January and February levels imply that fear and uncertainty remain at a higher level. For the curious, I note that the GLD ETF price and the actual price of gold per ounce measured by the COMEX price track closely. The monthly average COMEX price is generally in the range of 10.6–10.7 times the monthly average GLD ETF price. For example, in August, the COMEX average price of gold was $1,970.5 per ounce, which is 10.65 times the GLD average price of $185.

| TABLE 6 | VIX, average of daily closing values |
|----------|-------------------------------------|
| January  | 13.9                                |
| February | 19.6                                |
| March    | 57.7                                |
| April    | 41.4                                |
| May      | 38.9                                |
| June     | 31.1                                |
| July     | 26.8                                |
| August   | 22.8                                |
| September| 27.6                                |
| October  | 29.4                                |
| November | 27.7                                |

| TABLE 7 | Gold (GLD) ETF returns during 2020 |
|---------|-------------------------------------|
|         | January–March 23 | March 23–November 13 | January–November 13 |
| Gold (GLD) | 1.6%          | 21.1%              | 23.1%              |

| TABLE 8 | Monthly average of daily closing values of the GLD ETF |
|---------|--------------------------------------------------------|
|         | GLD                                                    |
| January | $147.0                                                |
| February| $150.1                                                |
| March   | $149.6                                                |
| April   | $158.8                                                |
| May     | $161.7                                                |
| June    | $163.3                                                |
| July    | $173.8                                                |
| August  | $185.0                                                |
| September| $180.6                                               |
| October | $178.4                                                |
| November| $178.0                                                |
4 | SURVEYS AND SENTIMENT

The previous sections provide the view of what was happening in the financial markets as COVID-19 unfolded. A rapid decline in the value of most stocks was followed by a rapid recovery from the market lows. Volatility increased and remains elevated. How were investors likely to behave in this situation? What were investors and their advisors likely thinking as events unfolded? Four surveys and a sentiment index provides some answers to these questions.

4.1 | The National Financial Capability Survey

The FINRA Investor Education Foundation commissioned the first national survey to benchmark key indicators of the financial capability of American adults. In December 2019, the FINRA Investor Education Foundation published “Investors in the United States: A Report of the National Financial Capability Study.”

The first survey was in 2009. Subsequent surveys were in 2012, 2015, and 2018. The two most recent surveys include a subsample of about 2,000 respondents who have investments outside of retirement accounts. This group is asked questions specific to investments and investing. This subsample is examined in the December 2019 FINRA report. The survey was fielded in July 2018. It therefore provides a pre-COVID perspective on behaviors and opinions of individual investors. Figure 1 illustrates the survey summary statistics for investor behavior and opinions during a market downturn.

In summary, most of this sample of investors, when the market declined 10%, did not buy or sell. Of those that did buy or sell, buyers exceeded sellers by a factor of about three. Presented with a hypothetical 20% market decline, about one-half of investors would not buy or sell (not counting the 16% who did not know or did not answer). By a factor of more than three, the other one-half of investors buying or selling would buy stocks or stock funds rather than sell them. Thus, a tendency to sell in a market decline is not revealed in the survey. Moreover, there is a far greater propensity to buy than to sell in a market decline.

Additionally, one-third of those surveyed are somewhat active traders with four or more trades per year. About three-fourths of investors hold individual stocks, about two-thirds hold mutual funds. Only one-third hold individual bonds, and one-quarter hold exchange traded funds. Most investors take average risks, but more than one-third take above average or substantial risks. A large percentage of investors work with investment professionals. Well over one-half of investors use information from financial services companies or financial advisors. Most investors agree that they have access to the information they need to make investment decisions.

4.2 | Survey of certified financial planners

The Certified Financial Planner Board of Standards conducted an online survey April 6–13, 2020 and issued a report: “Pulse Survey: The Impact of COVID-19 on CFP Professionals and Their Clients.” The 1,078 fully

![Figure 1](image-url)
completed surveys reveal the thinking of CFP® professionals and their clients at the time. The survey respondents are likely to provide advice to the type of investors in the National Financial Capability Study investor survey. Also, the views of the CFP® professionals likely comport with those of other financial professionals.

The online survey indicated that the clients of CFP® professionals were clearly focused on the decline and fluctuations in the value of their portfolio. About two-thirds of clients were perceived to have high or very high stress during the market volatility. The most common recommendation of CFP® professionals to their clients was to not make any decisions (sit tight). The next most common recommendation was to rebalance. What CFP® professionals were recommending, and what the NFCS survey results suggest investors were doing, were in broad agreement.

4.3 Survey of chartered financial analysts

The Chartered Financial Analysts Institute sent a survey to 167,312 global members on April 14, 2020.5 The survey closed on April 24, 2020. In June 2020, it published the report: “Is the Coronavirus Rocking the Foundations of Capital Markets?” There were 13,278 responses received. Over 40% of survey respondents believed that the financial industry should convey to the public the markets are functioning even in the face of unprecedented conditions and individuals should not engage in panic selling or market timing efforts. In addition, 96% of respondents thought that the current crisis increases the chance of asset mispricing.

The CFA survey does not reveal any results that conflict with the CFP® professionals survey. The CFA survey suggests that investors should not sell in a panic, should not try to time the market bottom (and implicitly buy at the perceived bottom), and should recognize that the markets are functioning. The overwhelming view of CFAs was that asset mispricing was likely during COVID-19. Perceived mispricing implies the potential for above normal returns from active investing. However, despite this perceived mispricing, less than one-third of the respondents believe that this would reverse the trend from active to passive investing.

4.4 The American Association of Individual Investors Survey

Each week, the American Association of Individual Investors (AAII) conducts an online survey.6 Respondents are asked to state whether they are Bullish, Neutral, or Bearish. This is a straightforward sentiment indicator. Table 9 shows, from January to October of 2020, the average of the four or five weekly survey values reported during that month. Survey respondents can differ each week. The monthly average will smooth out week-to-week fluctuations. In March 2020, the AAII Bull minus Bear spread turned to a negative 14.6%. The change from the February to the March value of −18.8 was by far the largest negative change in 2020 to date. The most negative levels of the spread were in May and July when the market recovery was well underway. An interpretation of this is that the news regarding the pandemic continued to be negative, weighing down sentiment despite the market recovery. The level of the indicator remained negative until November when it became 18.5%, the largest value of 2020 to date. Investors apparently, at least from this survey, shook their bearish stance after months of bullish market performance. As a final comparison, the spread averaged for all weekly 2019 surveys was 2.7%. That the November 2020 value is well above the 2019 average signals that COVID-19 bearish sentiment had dissipated.

4.5 The TD Ameritrade investor movement index

The TD Ameritrade Investor Movement Index (IMX) is a proprietary behavior-based index designed to measure the sentiment of retail investors.7 It was first calculated in 2010. Each month it is calculated using data from a sample of client accounts. TD Ameritrade states on its website that: “... we saw a unique opportunity to create a

| TABLE 9 American Association of Individual Investors (AAII) Survey: level and change in the monthly average of weekly bull % – bear % spread in 2020 |
|---|---|
| Level | Change |
| January | 9.7% |
| February | 4.2% | −3.5 |
| March | −14.6% | −18.8 |
| April | −10.9% | 3.7 |
| May | −20.3% | −9.4 |
| June | −14.1% | 6.2 |
| July | −20.5% | −6.4 |
| August | −14.0% | 6.5 |
| September | −16.3% | −2.3 |
| October | −3.9% | 12.4 |
| November | 18.5 | 22.4 |
quantitative, behavior-based index that can better reflect what individuals are actually doing. As a result, when it’s combined with opinion-based research, the IMX can provide a more complete snapshot of retail investor sentiment.” There are no defined bullish/bearish thresholds. It is suggested by TD Ameritrade to look at trends over time. An increase suggests more bullish (less bearish) investor sentiment. A decrease suggests more bearish (less bullish) investor sentiment.

Table 10 shows the monthly IMX. It decreased in February, again in March, and again in April. The March decline was by far the largest. It increased in May through September as the market recovery was underway. The IMX and the AAII Bull minus Bear spread numbers are not directly comparable. That said, both measures show the largest decrease in March. The September and October IMX values are values close to the January and February values. The IMX returned to its level before COVID-19. This recovery occurred sooner than the AAII survey measure became positive once again. As a final comparison, the IMX averaged 4.75 over all the 2019 monthly releases. August through October 2020 values are above 4.75. As with the AAII measure, the IMX signals that the COVID-19 bearish sentiment has become a thing of the past.

5 | LESSONS FROM THE PAST FOR THE COVID-19 PRESENT

The title of a New York Times article on March 15, 2020 was: “Is This Your First Financial Crisis? Relax, We’ve Been Here Before.” The article began (Herrera, 2020): “You already know the rational steps to take during a financial crisis: Don’t look at your 401(k) or investment accounts. Don’t stay glued to CNBC or the financial press. And, above all else, do not panic-sell your investments.” The article contained numerous quotes from experts to reinforce this advice. This section provides numbers that provide empirical support for this advice. Often heard throughout the pandemic were calls to “listen the experts” and “trust the science.” This listening and trusting related to the medical matters surrounding COVID-19. The experts and the science associated with financial matters also were worth listening to and trusting. Market history tends to repeat itself. Financial experts would be aware of this tendency and should provide advice accordingly.

The perceptions and behaviors of investors and investment advisors are surely influenced by their experience and knowledge of the past. Episodes of large market declines are useful to examine to make conjectures about perceptions and behaviors observed during COVID-19. Lessons learned from past market declines were informative for the COVID-19 period. Three episodes are examined: the October 1987 market crash; the tech bubble; and the 2008–2009 Financial Crisis.

The focus is on stock market returns surrounding these episodes. The details about each episode are described in Siegel (2014). I find when the market (measured by the S&P 500 Index) was near its low in each episode. I then calculate the return of an investor who bought into the market 2 years before the low, and 5 years before the low. This calculation illustrates whether investors had positive or negative capital gains near the market lows.

I calculate the return of investors who bought near the market low and then sold 2 years after that time, or 5 years after that time. This calculation illustrates the extent to which the market recovered from its lows and provided a reward for those investors willing to buy stock in the depths of a bear market. Last, I calculate the return of an investor who bought 5 years before the market low and continued to hold that position until 5 years after the market low. This is the 10-year holding period surrounding the depths of the bear market.

More specifically, during each bear market the lowest value of the index is identified. Rather than use the exact date for the low, which an investor would not have known in real time, the next month is used. The average of the closing high and low of that month is the S&P 500 value used for the time when an investor bought or sold. Similarly, an average of the high and low from 2 years and 5 years before that month, and 2 years and 5 years after that same month are used in the calculations. The return calculations are summarized in Table 11. The returns are the capital gain or loss because dividends are not included in the index.

| TABLE 10 | The TD Ameritrade Investor Movement Index (IMX) 2020 |
|---|---|
| **Level** | **Change** |
| January | 5.68 |
| February | 5.16 | −0.52 |
| March | 4.16 | −1.00 |
| April | 3.90 | −0.26 |
| May | 4.55 | 0.45 |
| June | 4.55 | 0.20 |
| July | 4.63 | 0.08 |
| August | 4.93 | 0.30 |
| September | 5.71 | 0.78 |
| October | 5.69 | −0.02 |
5.1 | The 1987 crash

The low during this episode was on October 20, 1987 when the S&P 500 hit 216.16. The investor is assumed to have sold in November at the average of the high and low close for that month. For an investor who bought into the market 2 years before, the return was 24.9%. For an investor who bought 5 years before, the return was 74.2%. For an investor who is assumed to have bought into the market near its lows the return 2 years later was 40.3%, and the return 5 years later was 75.5%. Lastly, an investor who bought 5 years before the anchoring month, and held for 5 years after this month, had a capital appreciation of 205.7% over the 10-year period. Keep in mind that a dividend return (not included in this calculation) would increase the total return shown here and in the analogous calculations that follow.

5.2 | The tech bubble pops

The low during this episode was on October 10, 2002 when the S&P 500 hit 768.63. The investor is assumed to have sold in November at the average of the high and low close for that month. For an investor who bought into the market 2 years before, the return was \(-33.6\%\). For an investor who bought 5 years before, the return was \(-2.7\%\). The extent of the market decline during the pop of the tech bubble is evident with these numbers. For an investor who bought into the market near its lows, the return 2 years later was 27.7%, and the return 5 years later was 62.7%. Lastly, an investor who bought 5 years before the anchoring month, and held for 5 years after this month, had a capital appreciation of 58.2% over the 10-year period.

5.3 | The 2008–2009 financial crisis

The low during this episode was on March 6, 2009 when the S&P 500 hit 666.79. This is lower than the October 10, 2002 value of 768.63 at the low during after the tech bubble burst. The investor is assumed to have sold the month after that at the average of the high and low close for that month. For an investor who bought into the market 2 years before, the return was \(-42.6\%\). For an investor who bought 5 years before, the return was \(-26.0\%\). The extent of the market decline during the financial crisis was substantial and worse than the tech bubble. For an investor who bought into the market near its lows, the return 2 years later was 59.0%, and the return 5 years later was 122.0%. Lastly, an investor who bought 5 years before the anchoring month, and held for 5 years after this month, had a capital appreciation of 64.4% over the 10-year period.

5.4 | Summing up lessons from history

How should an investor or an investment advisor interpret Table 11? The returns in Table 11 are evidence that should dissuade investors from selling in a bear market. The capital appreciation in the period after the market lows are substantial. Two years later, these returns range from 28% to 59%. Five years later, these returns range from 63% to 122%. Buy-and-hold investors over the 10-year period surrounding these episodes experienced capital appreciation ranging from 58% to 206%. These numbers are lessons from history that financial advisors could and should have provided clients seeking solace during the COVID-19 market decline.

Two of the backward-looking calculations in Table 11 can be done for the COVID-19 market. Those who bought into the market 2 years ago had a 2.5% return as of April 2020. Those who bought 5 years ago had a 29.4% return. When April 2022 and 2025 arrive, the other three Table 11 return calculations can be made. But the wisdom of resisting the urge to sell to avoid a further market decline is already evident. As Table 1 shows, the S&P is up by 60% from its lows thus far, and the NASDAQ is up 72%. It appears that the historical lessons

| TABLE 11 | Returns surrounding three large market declines |
|-----------|-----------------------------------|
| October 1987 crash | |
| November 1982 to November 1987 | 74.2% |
| November 1985 to November 1987 | 24.9% |
| November 1987 to November 1989 | 40.3% |
| November 1987 to November 1992 | 75.5% |
| November 1982 to November 1992 | 205.7% |
| Tech bubble | |
| November 1997 to November 2002 | \(-2.7\%\) |
| November 2000 to November 2002 | \(-33.6\%\) |
| November 2002 to November 2004 | 27.7% |
| November 2002 to November 2007 | 62.7% |
| November 1997 to November 2007 | 58.2% |
| Financial crisis | |
| April 2004 to April 2009 | \(-26.0\%\) |
| April 2007 to April 2009 | \(-42.6\%\) |
| April 2009 to April 2011 | 59.0% |
| April 2009 to April 2014 | 122.0% |
| April 2004 to April 2014 | 64.4% |
have been reinforced by the COVID-19 market decline. Financial market history has again repeated.

The three recent episodes illustrate the lessons that can be learned from steep market declines. Investors and financial advisors can use these concrete examples to guide behavior during times of market decline and volatility. Skeptics unconvinced by case studies may view these examples as cherry-picked that may not represent more general experiences. For skeptics I illustrate a different long-term view. Beginning in 1960 until September 2020, a series of rolling 10-year returns are calculated. The first return is for January 1960 (calculated from January 1950 to January 1960); the second return is for February 1960 (calculated from February 1950 to February 1960). This continues until September 2020. There are 729 of these returns. This is using the S&P index data from Robert Shiller’s website.8 Two measures are calculated. One uses the nominal value of the index. This would measure the nominal capital gain or loss only, without any inflation adjustment, as was done for Table 1. The second measure uses the inflation-adjusted total return index. This measure includes dividends but adjusts for inflation. The results are as follows. For the nominal capital gain, the mean value is a 115% return (the median is 105%) over 10 years. For the real total return this is 112% (the median is 96%). The compound annual growth implicit from the mean values of each are 8.0% and 7.8%. Not including dividends or inflation versus subtracting inflation and but including dividends roughly cancels in these calculations. So as not to present too rosy a picture, it is noted that the nominal capital gain returns had 8.2% negative observations of the 729 observations. For the inflation-adjusted total returns this was 17.5% of the observations. The more frequent negative returns in this case were caused by high inflation periods.

The lesson from history is that for a typical 10-year window, investors should expect the market to provide a healthy return. But this is not guaranteed. Past performance does not guarantee future performance.

6 | CONCLUSIONS

As this is being written, the COVID-19 pandemic and its fallout has not ended. Definitive assessments cannot be made, but preliminary ones can. This episode was marked by a large market decline followed by a rapid recovery. Investors who did not sell near the market lows would not experience regret and those who did suffered the consequences. Survey evidence and historical experience suggest that most investors knew not to sell after a huge market decline. Yet, the trading volume suggests that many must have done so in 2020. Winchester, Huston, and Finke (2011) find evidence that investors who use professional advice tend to make better asset allocation decisions in a bear market. Investment professionals such as those with CFP® certification or CFA designation advised investors to sit tight, do not sell in a panic, and not attempt to time a market bottom. This advice undoubtedly served investors well. As more time passes, and the COVID-19 pandemic winds down, more definitive statements can be made. However, the COVID-19 pandemic seems to be reinforcing the historical lessons for investors and their advisors when encountering the next large market decline.

ENDNOTES

1 Table 1 returns use market index values and do not include dividends. The returns are therefore capital gains or losses.
2 Many stocks were strongly negatively or positively affected by COVID-19. This is evident in hindsight, and perhaps this could have been expected early in the pandemic. Stocks with a large negative year-to-date return include traditional retailers such as Macy’s (M) and Nordstrom (JWN), and lodging stocks such as the REIT Hersha Hospitality (HT). The biotechnology stock Moderna (MRNA), which developed a COVID-19 vaccine, and Peloton (PTON), which sells home exercise equipment, are examples of stocks that had enormous positive returns in 2020.

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