The Return of Volatility

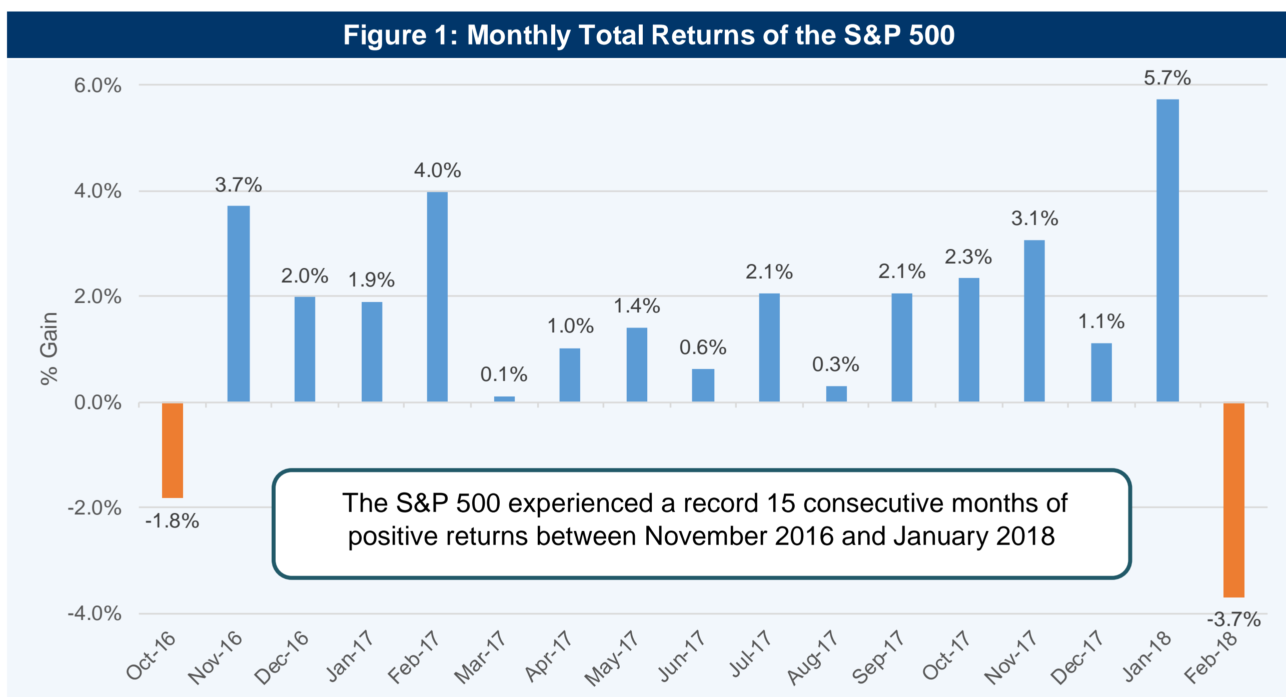
Evaluating the Markets after a Correction

After lying dormant for over a year, volatility returned to the marketplace last month with a vengeance. The first three weeks of 2018 began as a continuation of 2017's quiet ride up with the S&P 500 rising over 5% and the CBOE S&P 500 Volatility Index (VIX) receding to near all-time lows. Yet beginning on January 29th, investors were rudely awakened to the painful reality of volatility. In a period of eight trading days, the S&P 500 Index dropped -10.1% and the CBOE S&P 500 Volatility Index (VIX) rose from 11.1 to 33.5, an increase of 202%! The spike in volatility marked the first correction in the S&P 500 since February 2016.

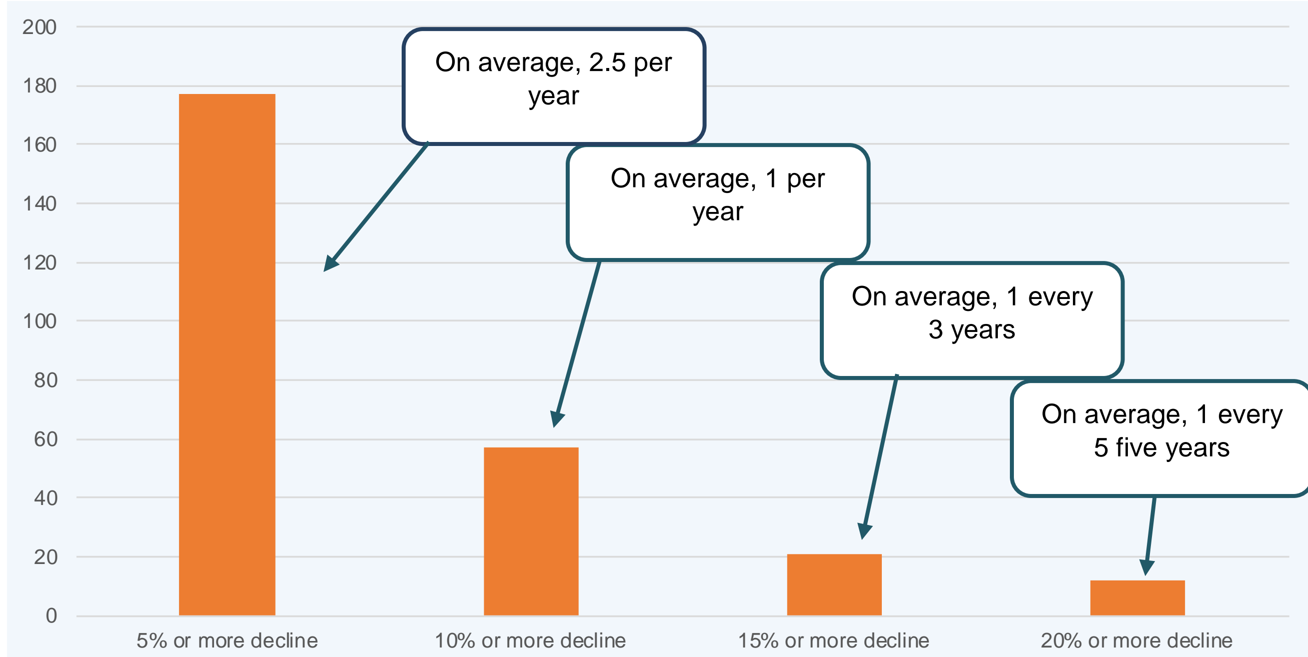
While it is futile to extrapolate short-term trading trends, the narrative for the sell-off was a combination of rising interest rates, a handover of power at the helm of the Federal Reserve, and the implosion of leveraged derivative funds. While all three of these issues are worthy of concern, they were probably overblown in the headlines. In the weeks following the correction, interest rates have moderated, the new Fed chairman Jerome Powell has struck a moderate tone on the economy, and several of the volatility funds that exacerbated the sell-off have been shut down. The larger takeaway from last month's sell-off is that we are emerging from a low volatility regime to a more normalized volatility environment. While market drawdowns are never as enjoyable as the ride up, they do present opportunities for investors to find value.

Defining a Correction: Putting Last Month's Market Decline in Perspective

If last month's market sell-off felt strange, it is probably because the equity markets had appreciated unabatedly since President Trump's election in November 2016. The Republican candidate's surprise victory jumpstarted an equity rally on the hopes of deregulation and tax reform. From November 2016 to January 2018, the S&P 500 Index reeled off a record 15 consecutive months of positive returns and appreciated +31.4%. Robust corporate earnings and synchronized global growth provided a strong foundation for the equity rally in this period as international stocks (MSCI EAFE Index +27.0%) and emerging market stocks (MSCI EM Index +33.5%) both experienced even higher growth than their US counterparts.

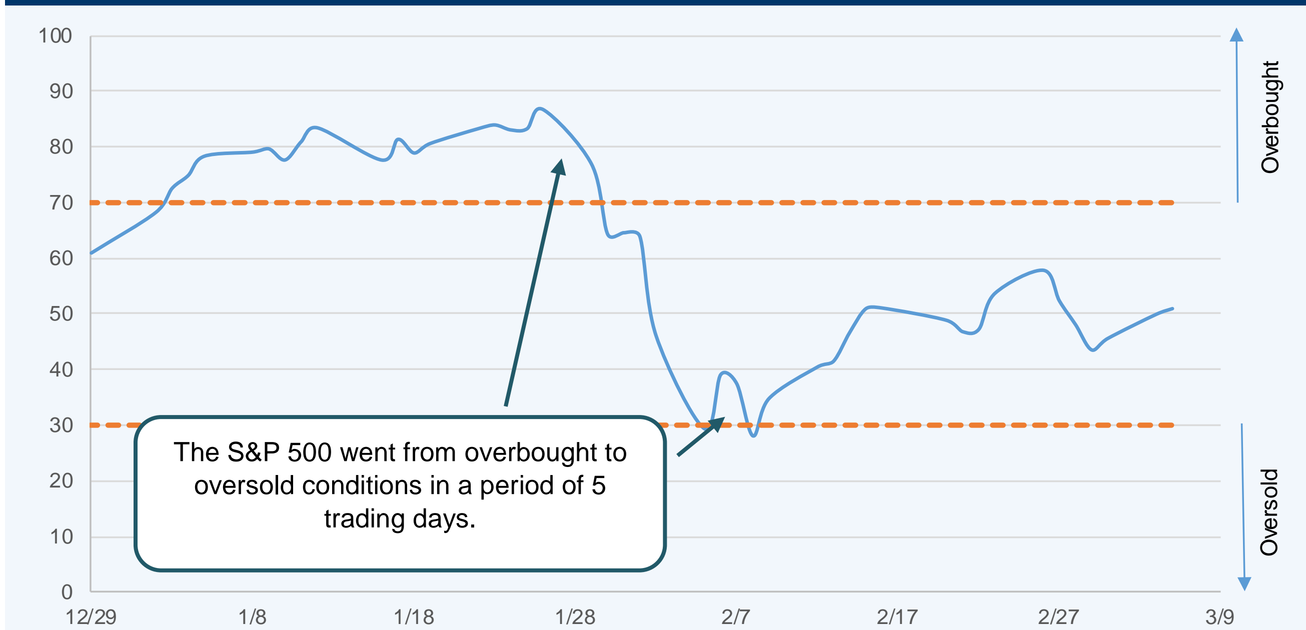


During this record 15 month equity run, there were no substantial sell-offs. Despite political discord in Washington and heightened geopolitical tensions abroad, the largest drawdown the S&P 500 experienced between November 2016 and January 2017 was -2.8%. That drop is paltry compared to the -16% average annual intra-year decline in the S&P 500 between 2000 and 2017.



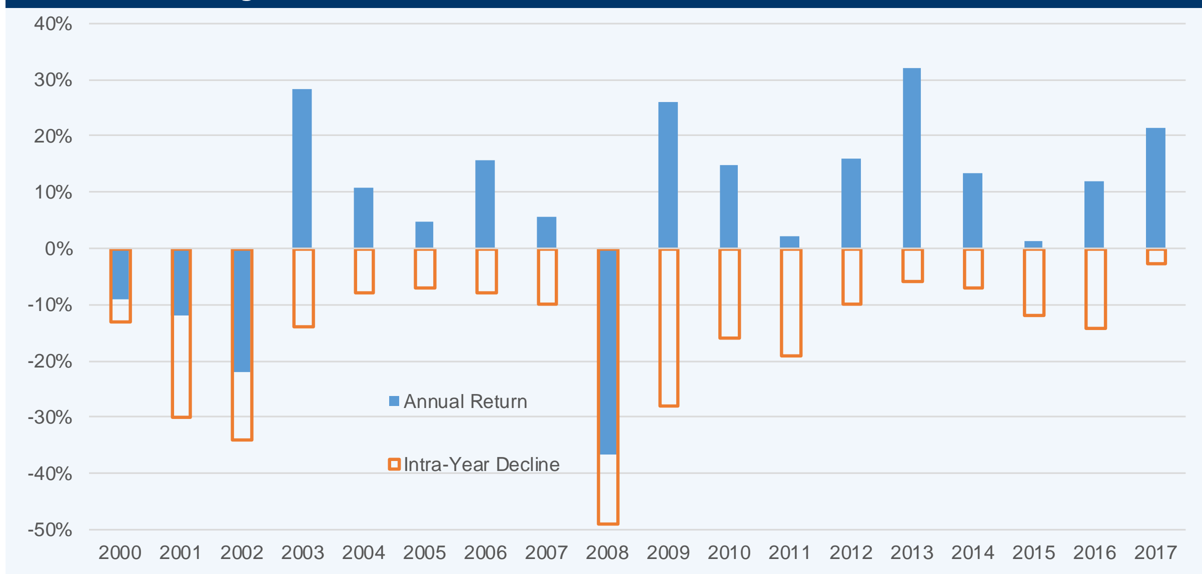
So when the S&P 500 declined -10.1% in a matter of a few days last month and erased $2 trillion of value, the loss felt magnified due to the lack of volatility over the previous 15 months. In fact, going back even further, it had been two full years since the S&P 500 experienced a correction, which is defined as a -10% decline from its 52-week high. This was a long drought considering that between 1946 and 2017 the S&P 500 averaged one correction per year.

It is easy to say that the markets were “overdue” for a correction earlier this year, but the law of averages would say that this is true. While declines can be painful, these corrections are inevitable. When a market is going up, investors continue to want to buy in and this can lead to irrational exuberance where market prices get ahead of their intrinsic value. A correction allows the market to consolidate gains and reign in excess expectations. Figure 3 shows the relative strength index (RSI) of the S&P 500 before and after the market correction last month. The RSI is a technical indicator that is primarily used to identify overbought or oversold conditions. When the RSI of a security or index is above 70, it is considered overbought and when the RSI is below 30 it is considered oversold. As you can see from Figure 3, the S&P 500’s RSI was signaling overbought in the weeks leading up to the correction, but then quickly plummeted to oversold at the dearth of the correction. While RSI’s are just one indicator of market trends, the S&P 500’s RSI chart earlier this year demonstrates how corrections can be beneficial to alleviating overbought conditions.



When a Bull Becomes a Bear

As we explored above, corrections are commonplace in the markets – occurring about once a year on average for the S&P 500. These pull-backs are often a chance for the markets to take a breather and consolidate gains before pushing higher. As Figure 4 displays, equity returns are often negative at some point in the year even in positive return environments. For example, the S&P 500 experienced an average intra-year decline of -16% from 2000 to 2017 but finished the year negative in only four of the eighteen years.



However, about 22% of the time, corrections can develop into a more serious state. A decline of -20% from the recent 52-week high is defined as a bear market. The S&P 500 has experienced a bear market on average once every five years since 1946. Bear markets typically coincide with periods of economic distress, such as the economic recession of 2008.

It can be easy to get caught up in the headline noise during market declines. Focusing on the underlying fundamentals can help an investor discern whether a market correction is an overblown panic or a more worrisome indicator of deteriorating economic growth. While no single economic data point tells the whole story, looking at a few in conjunction can help gain a clearer picture on the state of the economy.

I. **To gauge lending liquidity**, one can look at the TED spread, which is the difference between the interest rate on interbank loans and short-term US government debt. The spread between the two rates measures the estimated risk that banks pose on each other. During periods of economic stress, the difference between the two rates widens while in times of economic prosperity the spread decreases. In 2018, the TED spread has widened from 32 to 45 basis points. Despite the increase, the current spread is still below the long-term average of 57 and is significantly lower than its 2008 peak after the collapse of Lehman Brothers when it spiked to 450 basis points.

II. **To gauge economic growth**, one can look at global gross domestic product figures. Since stocks are forward looking instruments, they will often decline if economic growth is projected to slow. However, in 2018 global growth estimates have increased. According to the International Monetary Fund (IMF), global GDP growth is expected to increase 0.2% in 2018 and in 0.2% in 2019.

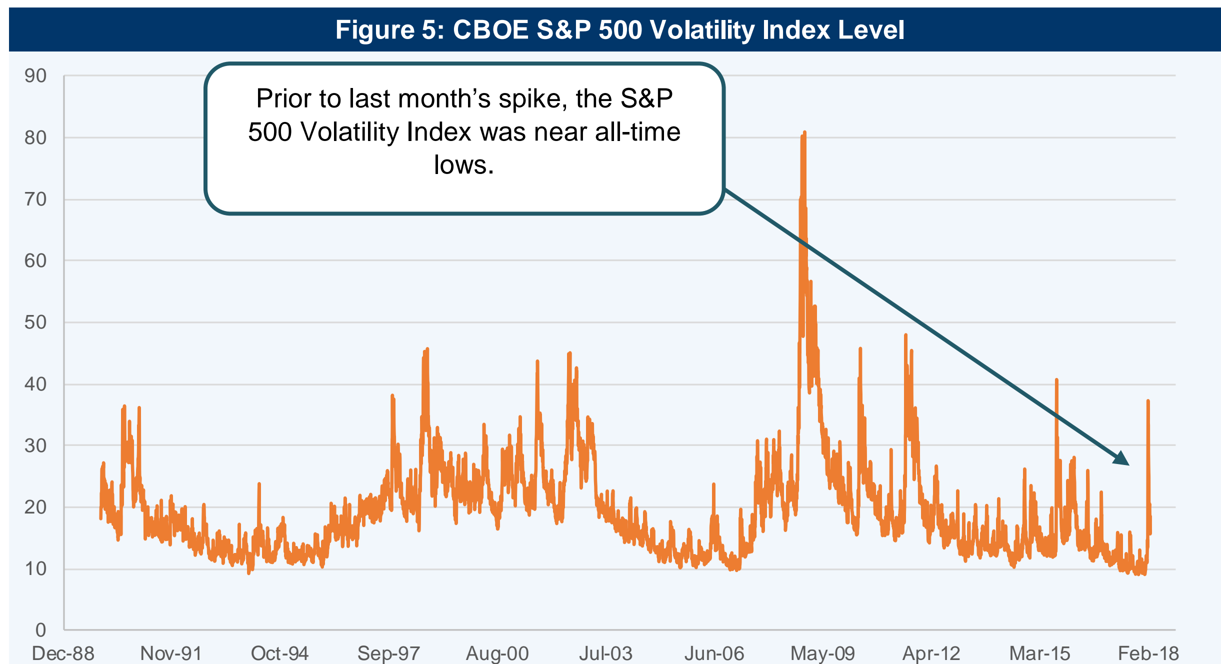
III. **To gauge corporate profitability**, one can look at corporate earnings expectations. Corporate earnings are strongly correlated with stock prices because higher profits translate to higher returns for stockholders. In 2018, corporate earnings have been nothing less than impressive. The estimated earnings growth for S&P 500 companies in Q1 is +17.2%, which would be the highest earnings growth since Q1 2011 (+19.5%). Furthermore, 81% of companies have beat analyst expectations so far, which is the highest level in seven years.

When the market sold off last month, none of the economic fundamentals discussed above were indicating signals of underlying economic distress. Therefore, we used the sell-off as an opportunity to add to our emerging markets position, which is one of our highest conviction bets over the next 18-24 months. Unlike in 2017, when emerging markets shot straight up, the sell-off in February provided an opportunity to buy the asset class at a discounted price. We also made moves on the fixed income side of the portfolio as well by selling some of our shorter duration holdings and adding to slightly longer duration positions which had declined during the sharp rise in interest rates.

Looking Back: An Abnormally Low Volatility Environment

While the market sell-off in February may have felt abnormal, it was actually the quiet 15 month period leading up to the correction that was atypical by historical standards. Equity volatility, as measured by the CBOE S&P 500 Volatility Index (VIX) approached its record low of 9.3 multiple times in 2017. In fact, the VIX closed below 10 on 16 different occasions in 2017 after closing below 10 only 6 times between 1990 and 2016.

Figure 5: CBOE S&P 500 Volatility Index Level



One possible reason that volatility in both the equity and fixed income markets has remained tame is the availability of capital. Excess liquidity in the markets has allowed investors and institutions to "buy the dip" any time there has been a decline in asset prices. This has theoretically suppressed the risk premium and aided in pushing volatility to its lower bounds. However, after a decade of easy money, central bank policy is reaching an inflection point. The US Federal Reserve has been shifting towards tighter monetary policy since 2015 and other central banks are expected to follow suit this year as the global economy continues to expand and inflation creeps higher. Tighter monetary policy could trigger more volatility as excess liquidity is removed from the markets.

Lessons for a More Normalized Volatility Environment

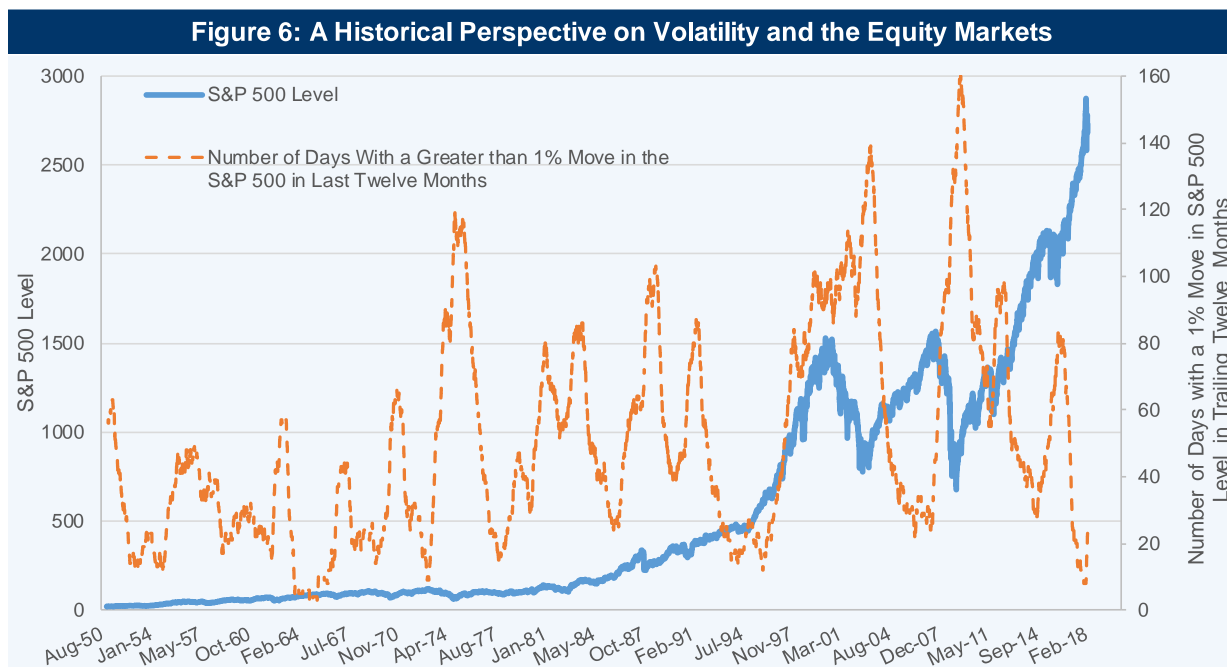
Last month's sell-off was a reminder of how quickly trends can change in a volatile market. While volatility can evoke painful emotions, it can also provide opportunities for investors to find value in the market.

i. **Remaining fully invested is key to achieving long-term returns**: Market timing is difficult and can be even more so during periods of volatility because average daily movements in the markets expand. The larger range of price fluctuations makes timing the market a more difficult and fruitless task if poorly executed. Research has shown that some of the highest daily returns in the equity markets occur on days following large sell-offs. Extreme moves like "going to cash" tend to cost investors significant returns over time.

ii. **Diversification can provide a buffer**: Maintaining a well-diversified portfolio can reap significant benefits during volatile times. When a portfolio's underlying holdings are closely correlated, they will tend to move in the same direction together. For example, a portfolio comprised of only US stocks will tend to move in the same direction when the S&P 500 sells-off. However, a portfolio with different asset classes, such as bonds, US stocks, and international stocks should have a lower underlying correlation over time. A sell-off in the US stock markets may have less of an effect on international stocks or vice versa and therefore may provide some downside protection.

iii. **Look through the noise to what matters**: As Figure 6 demonstrates, volatility has little effect on the long-term performance of equities. The S&P 500 (blue line), which is a representative tracker of the value of US stocks, has increased almost exponentially since 1950. On the other hand, volatility (the orange line) has oscillated between periods of low volatility and high volatility. Despite these inevitable bouts of volatility, the S&P 500 has continued to appreciate. While in the short-term volatility may seem debilitating, in the long-run it has little effect on the price appreciation of assets such as stocks. In fact, short-term volatility can provide opportunities when overreactions push down prices of unrelated securities.

Figure 6: A Historical Perspective on Volatility and the Equity Markets



Unlike 2017, which had no meaningful pullbacks, 2018 has already provided plenty of buying opportunities for investors looking to find value in a highly appreciated market. Instead of becoming skittish in a choppy market, investors should study underlying economic fundamentals such as credit spreads and corporate earnings. If the underlying indicators remain strong during the sell-off, investors should use the correction to add to positions they have a long-term conviction in. While the return of volatility may seem like it has negative connotations because of the headlines, for the rational investor, it can be beneficial to building out a long-term portfolio at more strategic entry points.

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Figure 1: Monthly Total Returns of the S&P 500. This figure shows the monthly return of the S&P 500 Index from October 2016 to February 2018. Each monthly return includes price change and dividends paid. Source – ycharts

Figure 2: Number of Occurrences for the S&P 500 Index between 1946 and 2017. This figure shows the number of times the S&P 500 experienced a -5%, -10%, -15%, or -20% price decline from 1946 to 2017. Source – ycharts

Figure 3: Relative Strength of the S&P 500. This figure shows the daily relative strength index of the S&P 500 from December 30th 2017 to 3/8/2018. A reading above 70 represents overbought conditions while a reading below 30 represents oversold conditions. Source - ycharts

Figure 4: Annual Returns and Intra-year Declines of the S&P 500. This figure shows the largest intra-year decline and the final total return for the S&P 500 Index between 2000 and 2017. Source – JP Morgan

Figure 5: CBOE S&P 500 Volatility Index. This figure shows the daily level of the VIX from January 1989 to February 2018. Source - FRED

Figure 6: A Historical Perspective on Volatility and the Equity Markets. This figure shows the index level of the S&P 500 (blue line) from January 1951 to February 2018. The orange line shows the number of days in the trailing twelve month period where the daily return of the S&P 500 was greater than 1% or lower than -1%. Source – ycharts