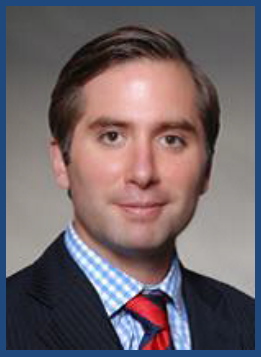
Manager's Report
April 2017



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Forecasting: Art or Science?

"One of the brightest gems in the New England weather is the dazzling uncertainty of it"
-Mark Twain, Circa 1876

Weather can come with some dramatic flair; and, regardless of how common snowstorms are in the greater New England area, any threat of one tends to wreak havoc for the locals. One example of late would be the so called "Blizzard of 2017". This storm, which hit the region in the middle of March, was billed to be a major blizzard, which caused schools and businesses to shutter before a single snow flake hit the ground. The storm itself was not a complete miss, here in Boston the snow totals reached roughly 6.5 inches, it was however well shy of the forecasted 12-18 inches. Leading to the collective groans of many, which is common when the weather does not pan out as forecast.

This difference between forecasted weather and actual results, leads many to envy the perceived job security of the local meteorologist. This perception of security is derived from the view that, without regard for track record, the weatherperson shows up each day to report what they expect will happen. Presumably, a weatherperson reports the data, or the forecast of weather, generated by a sophisticated satellite software program. Thus, the weatherperson, most likely, is not interpreting the data, per se, but instead is regurgitating it. Support of this belief would come in the form that if one forecaster is calling for snow, so is every other forecaster, thus building a consensus forecast. Consequently, those who forecast the weather are not personally accountable for their predictions, as it is often the result of a consensus forecast, rather than an individual opinion. Since it is presumed that the data is reported as the technology illustrates, if it is wrong, no one is (or should be) fired and there is no public humiliation. In full disclosure, I am unaware to the extent of a weatherperson's skill set, and it is most likely more complicated than one would imagine; after all, meteorology is in fact a science but this begs the question: is making a forecast more of an 'art'?

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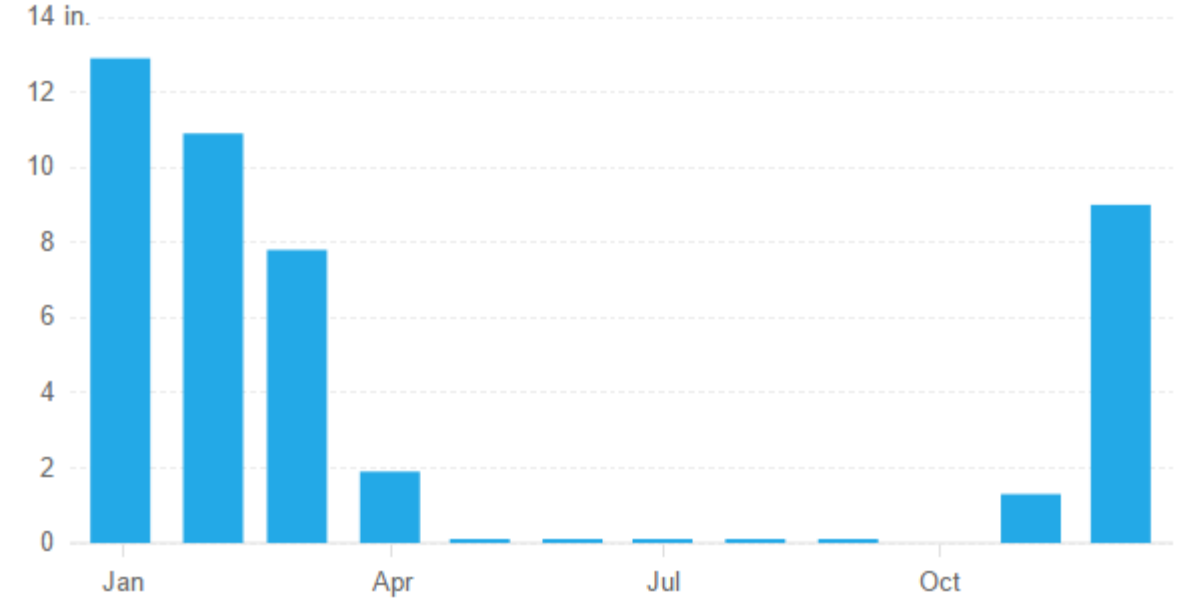
Weather Forecasts and Market Returns

Forecasting market performance is seemingly as difficult a pursuit, if not more difficult, as is forecasting the weather with accuracy. To say that the stock market will end a given year in positive territory is not the same as saying it will snow in New England this winter. Though, it is not as far off as one might think. The probability of snow in New England during the winter months is safely around 100%, historically speaking. While the stock market has not delivered positive calendar year returns 100% of the time, it may be more often than most expect. In fact, over the last 37 years, the US stock market had a positive annual return in 28 of those years, or roughly 76% of the time. Of course, it is the experience that people remember, that is the volatility along the way, and not the actual outcome. But if one is playing the odds, the probability that the market will end a calendar year in positive territory is statistically in one's favor.

Regarding weather, an orderly snowfall, spread evenly throughout the winter months, is much better than getting it all at once. Though. That is rarely, if ever, the case. The same can be said of markets, that is, when volatility is evenly distributed throughout a year, it is often less memorable than when it all comes at once (or bunches). Consider that the normal annual average of snowfall during the winter months in Boston, per the Weather Channel, is 43.5 inches. Though, when and how the snow comes is always variable. Historically speaking, the bulk of snow for New England comes in January and February, with 12.9 inches of snow and 10.9 inches falling on average respectively, as illustrated below in chart 1. The month of December, on average, sees 9 inches of snow, with March being next in line, averaging 7.8 inches per year. Further, some years are lighter on snow than are others. For example, the winter of 2015 brought a record 110.6 inches of snow to Boston. Though 2016 had a lackluster showing of only 29.5 inches of snow for the season.

Chart 1: Historical Snowfall Totals by Month 1981 - 2010



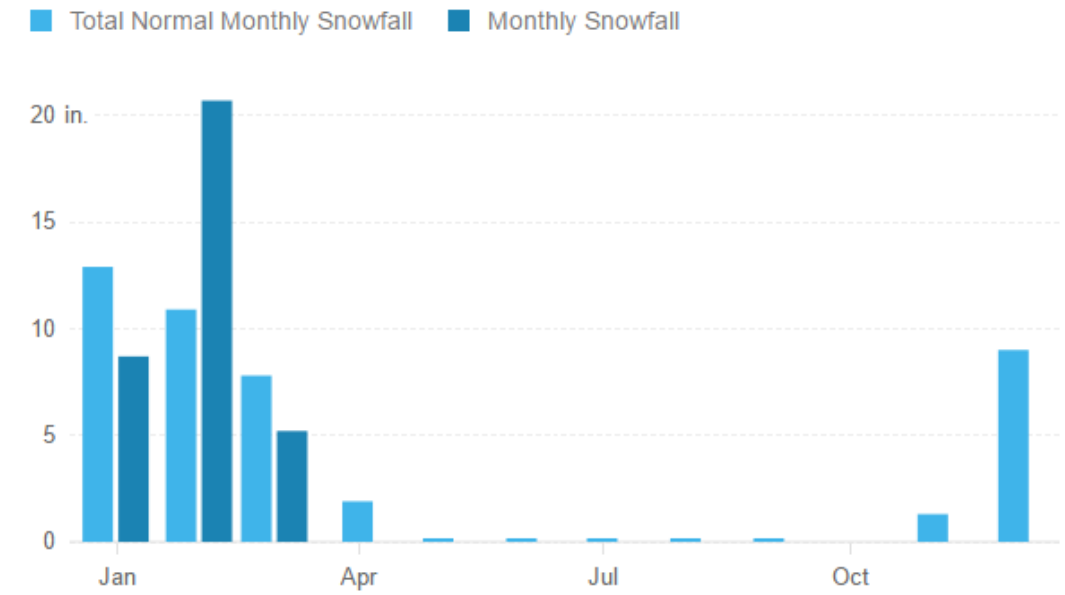
Source: snowfall.weatherdb.com

Average Amounts of Snow and Average Market Returns

It is important to note that, just like with market returns, average snowfall is not a guarantee of future events. In other words, it is not always the case that snow in January falls by a greater amount than snow in February, despite the way the averages read. In fact,

this year, per chart 2 below, February saw the largest amount of snowfall, and by a wide margin compared to historical averages and other months. And, since the Blizzard of 2017 never came to full fruition, the amount of snow for March in 2017 came in below the historical average.

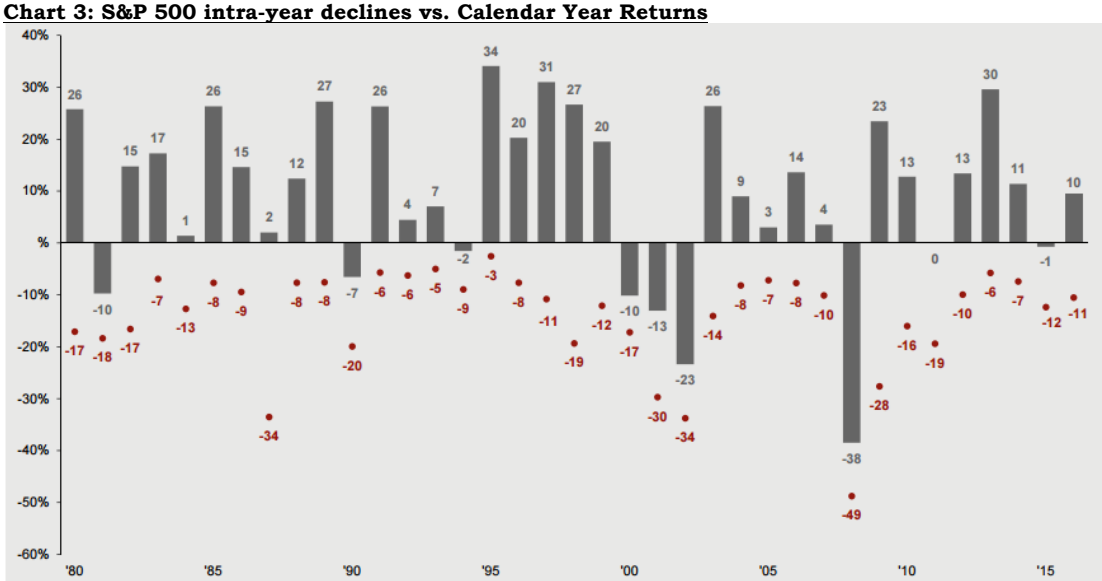
Chart 2: Average Winter Snowfall Amounts Vs. Real Snowfall Amounts in 2017



Source: snowfall.weatherdb.com, Monthly Snowfall for 2017, Total Normal Snowfall for 1981 - 2010

Market returns work in a similar fashion, in that averages may be deceiving as they relate to the path of a market's return stream. As mentioned, in 28 of the last 37 years, the US stock market, as benchmarked by the S&P 500, has had a positive annual return. Though the stock market has fallen in any given year, peak to trough, by 14% on average. Therefore, despite delivering a positive calendar year return roughly 76% of the time, the markets still fell, on average, by 14% somewhere in between. This is what investors think about, the ride or path of the returns, which is more emotional, and therefore memorable, than the outcome. This path is illustrated well in chart 3 below, a chart that our readers should be familiar with considering that it is often referenced in our reports.

Chart 3: S&P 500 intra-year declines vs. Calendar Year Returns



Source: FactSet, Standard & Poor's, J.P. Morgan Asset Management.
Returns are based on price index only and do not include dividends. Intra-year drops refers to the largest market drops from a peak to a trough during the year. For illustrative purposes only. Returns shown are calendar year returns from 1980 to 2016.
Guide to the Markets – U.S. Data are as of December 31, 2016.

Forecasting: Art or Science?

The term meteorologist is deemed a scientific term. It is defined by Merriam-Webster as "the science dealing with the atmosphere and its phenomena, including weather and climate." Though one must admit that it is not an *exact* science, presumably due to volatile variables well outside of even human comprehension, hence, "phenomena." Which brings us to the idea of forecasting, in the general sense, and whether it can ever be a true science.

In the finance world, forecasts are made all the time, perhaps even too often. Forecasts can be both 'short-term' forecasts, which are often as accurate as the local weatherman, and 'long-term' forecasts, which find safety in averages. These forecasts can be done by company management, in terms of forecasted sales or forecasted earnings. Forecasts also come from economists (which is an art and not a science), who forecast and publish their expectations for economic growth or rates of inflation. Stock analysts also provided forecasts for the expected future price of a given stock, based on exhaustive data analysis. Unfortunately, these jobs do not get the same level of leeway that a weatherperson may, which is to say that if one is not accurate to some degree on these financial forecasts, one's job could be in jeopardy. Thus, much like the weatherman, analysts find safety in the consensus; after all, if everyone is forecasting snowfall it is much riskier to make a call for sunshine.

When examining the difficulty of forecasting, one should recall the events of 2016, which have been covered ad nauseam, but remain a good reminder. Forecasters predicted that a pro-Brexit vote would doom global risk markets to indiscriminate selling. While it is true that the stock market reacted in a negative manner, it is also true that the selloff was short lived, spanning roughly 2 trading days, before dramatically changing direction. A similar story with the recent presidential election in the United States. Again, unless one watched the Asian market session (overnight), the immediate fallout from the Trump election was basically a non-event for risk markets. Though forecasts led many to believe the opposite would have occurred and to the negative side. Thus, the market's response to these events shocked many observers, because most people forecasted a different result.

All of this leads one to question if forecasting is even a viable skill or service. The seemingly obvious answer is that forecasts do matter. For example, while the "Blizzard of 2017" did not hit as hard as expected, 6.5 inches of snow did hit the ground in Boston on that day in March. Further, the forecast gave ample time for residents to prepare and remain as safe as possible. That in and of itself is most important, at least regarding short term weather forecasts. As for financial forecasting, this skillset allows for professionals to prepare a portfolio or position for a potential outcome. It is not that the forecast need to be correct or incorrect, it is more that forecasts need to be relevant.

So, Do We Have a Forecast?

We are often asked by clients to forecast returns for a given period, such as the next 6 or 12 months. To which I often reply that any forecast for that short of a period is, at best, a guess. The reality, is that forecasts can be exceptional when they are completely accurate, though they can still be valuable when they are simply relevant. In other words, if the consequence of a *relevant* forecast is preparedness, then it is valuable to those who listen. And, while meteorologists forecast short term weather to assist viewers in choosing between shorts or pants, market observers do not have the same luxury. And, therefore, it may be strange if a lone meteorologist were to call for a blizzard in July, but it may cause one to think what they might do in such a situation and how they may prepare. Therein lies the difference between forecasting the weather and forecasting the market; there are always

known variables at play when it comes to the weather, but in regard to markets, there is no shortage of analysts calling for an event that may be the equivalent of a "blizzard in July".

The reality is that weather-events that occur without the benefit of forecast may end in tragedy, just as those who are unprepared for market shocks may experience some pain. Sometimes a storm can come out of nowhere, or be much stronger than expected, but if one has exercised caution in recognition of unforeseen events than they will always be prepared. In a day and age where information travels at the speed of light and markets trade around the clock, this preparedness inside portfolios comes in the form of diversification. This is true regardless of short-term forecasts. So, our current forecast for all markets is for price volatility in the short run and positive returns in the long run. And for those who are curious, we are also forecasting snow next Winter in New England.

As always, please call on us if we can be of service.

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