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Appreciating Uncertainty: Elections, Investing and Setting Expectations for the Future

By Ian A. Post, CFA

"The Prediction Paradox: the more humility we have about our ability to make predictions, the more successful we can be in planning for the future."[1]

The results of the presidential election made some people happy and some sad but most everyone was surprised. I personally was obsessed over the last few months with election polls, models and predictions.

One of the models I followed closely was fivethirtyeight.com, a website developed by Nate Silver, a statistician who specializes in forecasting sporting events and elections. While he didn't outright predict a Trump win, he made a strong case that Trump *could*[2] win. What Silver and his model successfully incorporated was an appreciation of uncertainty[3].

So, what can we learn from pre-election polls that seemed to assure a Clinton victory that can help us manage our investments?

Most people are familiar with the historical average return on stocks of about 12%[4]. But what is the likelihood of a 12% return in any particular year? How shocking would it be if stocks lost 20% or more?

Let's look at some history. We have a total of ninety calendar year returns for the S&P 500 beginning in 1926. Out of those, how many would have met expectations assuming we always expect a 12% return?

A grand total of three[5]!

In only three calendar years, or roughly 3% of the time, did equity returns match the 12% expectation. How often have we had losses of 20% or more? That also has been a fairly rare event with only six calendar year returns of 20% or greater losses. How about losses of any size? The S&P 500 has delivered negative returns 24 times since 1926 or slightly more than 25% of the time.

Thinking about future stock returns as a range of possible outcomes can help us appreciate investment uncertainty. Assume we knew for certain that the mean expected return for stocks was 12%; we would still be faced with a very wide range of possible "normal" returns. Since 1926, the standard deviation[6] of S&P 500 returns is 20%. Using that information, we can say that about two-thirds of the time, we should expect a return in the range of plus or minus 20% from the mean or -8% to 32%. The range covering 95% of annual returns is -28% to 52% and for 99% of annual returns, the range is -48% to 72%. Amazingly, even these ranges underestimate the true uncertainty because 1) we don't know the expected mean return going forward and 2) stock returns are not normally distributed[7].

So, what to do with all this uncertainty? First, take a step back and accept that we simply can't make accurate single number predictions about stock returns and that is O.K. We know there is a wide range of "normal" stock returns based on historical results. Rather than assuming an average expected return, think in terms of ranges and how actual returns near the bottom of those ranges could impact your financial plan.

Second, work to reduce the range of likely returns by including high quality bonds in your portfolio. One of the strongest arguments for diversifying stock portfolios with high quality bonds is that they reduce the range of investment outcomes to something more manageable for investors.

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[1] A quote from the publisher's description of *The Signal and the Noise* by Nate Silver. [2] The fivethirtyeight model gave Trump a roughly one in three chance of winning heading into the election. [3]The model's basic premise was that with a Clinton national poll lead of about 3% to 4%, a polling error against Clinton equal to the one from 2012 (Mitt Romney underperformed national polls by about 3%), would be enough to cause Clinton's wide, but not deep by individual state, Electoral College lead to slip away leading to a Trump victory. [4]From 1/1926 through 12/2015, the average annual return on the S&P 500 was 11.95%. [5]1965 (12.5%), 1959 (12.0%) and 1926 (11.6%). [6]For a Normal Distribution, approximately 68% of outcomes occur within one standard deviation of the mean. [7]Extreme stocks returns occur more frequently than would be expected if returns were normally distributed.