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Buffett's Alpha

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A group of researchers have gotten a lot of publicity recently for a paper titled *Buffett's Alpha* (draft published August 20, 2012 by Andrea Frazzini, David Kabiller, and Lasse H. Pedersen). While there is much to like about their attempts to deconstruct the returns attributed to Warren Buffett through his control of Berkshire Hathaway, I will focus here on some concerns with their methodology.

I graduated with an undergraduate statistics degree, although I will readily admit that my career as an actuary has taken me away from pure stat work. My strength is using experience and common sense, often with graphics, in conjunction with enough knowledge of modeling and statistics to ask the right questions so better decisions can be made sooner.

Variance and Volatility

When the authors argue that Buffett's 19% annual excess return (above Treasury bills) over 35 years was not statistically significant relative to the market's 6% comparable excess return it piqued my interest. It seems preposterous, especially when I discovered they had used 5% as their significance measure. To me, this means that if there were a thousand investors in the starting cohort, 20 should have done as well as Buffett. Yet he has the top return and no one else seems to be close. How is this not significant? I believe it is because they are incorrectly assuming the returns of the cohort are normal so they can utilize the variance statistic (they refer to it as volatility) and thus a Sharpe ratio. I think a simple graph would demonstrate the point better. They should graph the annualized excess returns of all the members of the cohort, avoiding survivor bias by including those investors too. Using excess returns as their statistic will make this easy as a defunct investment would have no excess return in any year so the data can be cut off when they stop reporting.

I think that using variance from a non-normal distribution is incorrect. It reminds me of non-statisticians that used packages like SAS back in my college days. They turned on all the statistics and then used the ones that turned out to be significant. I believe we would all be surprised by how much peer reviewed research utilizes this type of flawed methodology. A better method might be to consider a variety of statistical methods, chosen in advance. Buffett's variance might be high because he has a large number of positive outliers relative to the market's range. The statistical test being calculated is comparing the Sharpe ratio, which uses excess returns and variance, so it too requires normality of returns. From Wikipedia,

The returns measured can be of any frequency (i.e. daily, weekly, monthly or annually), as long as they are normally distributed, as the returns can always be annualized. Herein lies the underlying weakness of the ratio - not all asset returns are normally distributed. Abnormalities like kurtosis, fatter tails and higher peaks, or skewness on the distribution can be problematic for the ratio, as standard deviation doesn't have the same effectiveness when these problems exist. Sometimes it can be downright dangerous to use this formula when returns are not normally distributed.

It is not clear if the authors determined that Buffett's returns can be normalized, and this is the key to their entire thesis. It would be interesting to look at semi-variance, especially downside volatility, along with a simple graph of the results from each investor.

Another shortcoming of the paper relates to the general discussion of beta in its CAPM context. I have followed Berkshire Hathaway for a long time, and until it was included in the S&P 500 it had a high return yet a contrarian set of results. It would lag slightly when the market went crazy but outperform strongly, acting as a safe harbor, when market returns were poor. Again, a graph would be helpful. Perhaps look at the S&P on an x axis and Berkshire returns on the y and graph monthly or annual returns. I would expect to see a graph with results reflecting this anomaly, making aggregate beta a poor statistic to base conclusions on.

Balance Sheet Alchemy

I like the paper's attempt to dissect the leverage involved in Buffett's returns, but they spend little time showing the truly unique nature of insurance float when used as a substitute for borrowing. Buffett's team has been very careful to stick to product lines where the policy holder wants to keep the policy in force. These are not callable loans, and I don't understand why they floored the cost of float at 0. This is a major part of the Berkshire game plan, having the insurance liabilities show a profit prior to investment returns while allowing a cash position to maintain a liquidity cushion for any sequence of large claims. Thus the borrowing costs are quite a bit lower than the 2.2% listed, and may even be negative. They may also be mixing market values of assets and book values of liabilities.

Betting Against Beta

While the attempt to dissect Buffett's returns is interesting, and I do find the paper thought provoking for good reasons, to me the most noteworthy part of the paper deals with Betting Against Beta. For my entire lifetime academics have thrown the capital asset pricing model in our face as the only reasonable way to value a portfolio. Now, in this paper, they include a factor that says Buffett makes quite a bit of his money because he buys investments with below average volatility. As if everyone was doing this and it is just normal investment strategy. BETA IS DEAD! It seems like this should be the conclusion, that Buffett recognized this before Markowitz even published his paper.

Conclusion

This data set should be used to graph the results and identify the Superinvestors of GrahamandDoddsville described by Buffett, as well as other value investors, against the cohort. This group of investors has been harassed during every bubble and told how old fashioned their ideas were. Wouldn't it be something if now there was a movement for Nobel prizes to be returned and value investors recognized for the results they truly bring to the table?

Post Mortem

There have been several reviews of this paper, most accepting the statistics without review, but The Economist article published in September 29, 2012 (Buttonwood, page 77) is interesting in that it brings up some of the same issues I identified. They recognize the cost of float issue in part, as well as noting that low beta, high quality, investments were chosen by Buffett well before their paper used hindsight to identify the anomaly.

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