

## The Arithmetic Of Asymmetry

Andy Kern, Senior Portfolio Manager, New Age Alpha

Mar 2, 2022 2:00:43 PM | 9 min read

Anyone who has played a casual game of darts, say, at a bar or in the basement, knows an overarching rule of the game: it gets harder as it progresses. While rule systems vary, most games start with a wide-open board full of possibilities. But then, by the end, you're aiming for the Double 18 and only the Double 18 to win. In short, it's a game of precision that seems easy at first but becomes very, very hard by the end.

Just like active stock management.

### Wait, you mean active management is difficult?

No one can predict the future. If people could, there'd be no such thing as 'risk'. The word would lose meaning because, seeing the future, people would simply avoid hazardous situations. In investment decision-making, however, the word becomes especially nuanced since investors view hazardous situations differently. We know we may make money or lose money, and this means an investment is risky. But that's true of any investment, big or small. Thus, the trick is to find investments that are more likely to result in greater payoffs than losses. Like tossing a dart at a wide-open board, it seems like a very straightforward situation. But, in reality, it's easier said than done.

You see, the additional challenge when investing involves the uncertainty regarding both the probability of success and the potential payoff of said success. There's potential to actually nail that Double 18 only to see it turn into a Triple 4 because the market decided it was worth less. Therein lies the challenge...and the need to reappraise investment risk entirely. One way is to flip the script and start with what investors can know for certain.

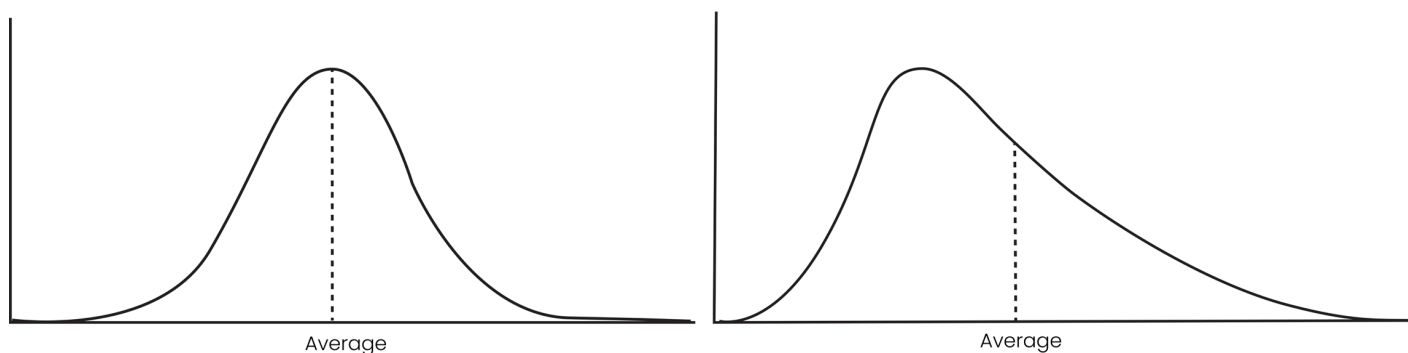
### Skewed Results

One truism is that stock returns are, on average, positively skewed. (See the seminal publication of Beedles and Simkowitz (1979)) This means that, if you were to look at the history of a stock's daily returns, you would generally find that there are more big positive returns than there are big negative returns. The reason for this is clear; the most a stock can go down is 100%, but the most it can go up is unlimited.

Another way to describe this observation is to say that a cross-section of stock returns is asymmetrically distributed. This means that, if we took the entire S&P 500® and looked at the one-year returns of all those stocks, there would be a few huge winners, but most stocks have more mediocre returns.

The mere fact that a collection of stocks' average return is positive (or even very attractive) does not imply that the risk of loss does not exist. In fact, because returns are positively skewed, that attractive average return might be a bit deceptive. The outcome could be a lot more unattractive returns, but the few positive outliers pull the average up.

Below are two charts, one with a symmetrical normal distribution and one that is skewed positively. Note in the symmetrical chart on the left, there are an equal number of above average and below average observations. But in the chart on the right, even though the average (or mean) is the same, there are more below average observations than above average observations.



Notice the area under each curve. This is the cumulative probability of any particular return occurring. In a normal distribution, the areas above and below the average are the same. But because there is so much more area under the curve to the left of the average of the skewed distribution, investors are at a disadvantage when trying to beat the average. Investors, practically without fail, always try to pick the best stocks on the right side of the curve. And the question becomes: why are they making it so hard on themselves?

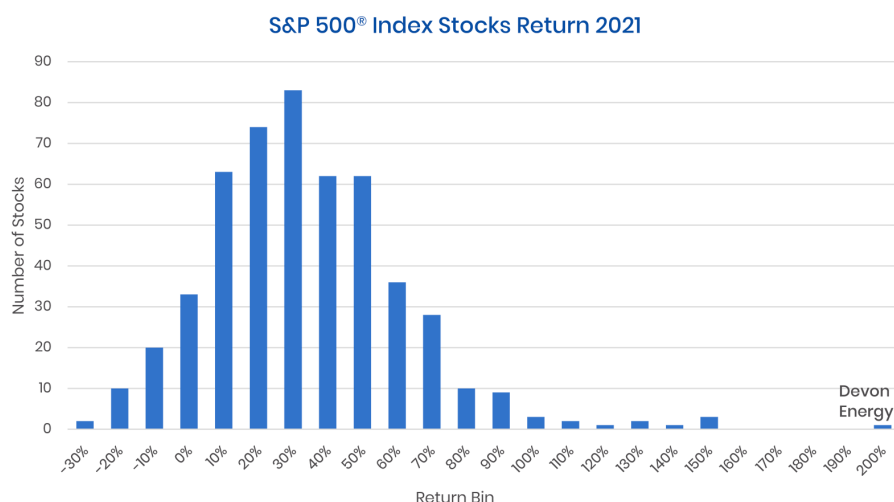
It may come as no surprise that investors display what researchers such as Bali, Cakici and Whitelaw (2011) have called “a preference for lottery-like returns.” Why do so many pour capital into microcap or venture capital firms? Perhaps because they are attracted to the potential (yet somewhat unlikely) enormous gains that some such investments typically are perceived to generate – the investments far to the right in this skewed distribution.

This is a behavioral phenomenon created by certain investors that nonetheless impacts everyone’s portfolios. The temptation to get-rich-quick is a strong one, no doubt. But that is not responsible investing and, in many respects, is more akin to gambling. Put simply, in an asymmetrical investing environment, high risk-reward stocks have more to lose than low risk-reward stocks. Therefore, we believe that investors are better served by not attempting to pick the winning stocks when they can simply avoid the losers.

avoid it. That’s it.

Using the H-Factor Score as the foundation of our investment methodology, we can apply these probabilities to any portfolio or investment universe. We build portfolio solutions that aim to provide a dramatically differentiated and uncorrelated source of outperformance by seeking to avoid mispriced stocks caused by human behavior.

In the chart above, the hypothetical investor thought they could navigate the noise in the market on their own. They were wrong. And worse, if they were wrong from the start, their plight only grew all the more dire. Don’t be that investor. Use our H-Factor Tool to measure the risk of human behavior in your portfolio.



\* Source: S&P Dow Jones Indices

In 2021 the average S&P 500® Index stock returned 29%. However, of the stocks in the index, 274 returned less than this average, and only 231 returned more. This result was driven by a handful of outliers skewing the distribution to the right. Note the most extreme outlier, Devon Energy Corp, which returned 196% in 2021. (Source: S&P Dow Jones Indices) How many managers would have successfully chosen Devon Energy when the year began? Maybe the manager that did, posted impressive performance and attracted a great deal of attention. But anyone trying merely to beat 29% would have been better served avoiding the 274 stocks pulling the average down than swinging for the fences on Devon Energy. You see, picking winners requires knowledge of the future, which of course is unknown and unknowable. The more the manager attempts to predict the future the more risk he or she is exposed to.

The truth is that selecting the precise stock in the cramped right side of this skewed distribution is just not likely to happen. There just aren't that many of them. And worse, with fewer options to choose from, you're more likely to overpay. In fact, some may say the whole activity is more akin to throwing darts. If one is serious about investment, it's more mathematically sound to simply remove the underperforming stocks on the left – the losers.

The New Age Alpha Human Factor Methodology is specifically designed to identify and avoid those stocks we believe are likely to be losers and make the odds work for the investor rather than against. The methodology may not always pick the Double 18 (the next Amazon or Facebook) but it may still outperform because it aims to avoid the Triple 4s – (the more common stocks on the left side of the distribution).

#### Disclosures

This commentary is accurate as of its publication date (3/02/2022) and has not been updated since its original release.

This document is provided for informational purposes only and should not be construed as investment advice or an offer or solicitation to buy or sell securities. We discuss general market activity, industry or sector trends, or other broad-based economic or market conditions and this should not be construed as research, securities recommendations or investment advice. Investors are urged to consult with their financial advisors before buying or selling any securities. Any forecasts or predictions are subject to high levels of uncertainty that may affect actual performance. Accordingly, all such predictions should be viewed as merely representative of a broad range of possible outcomes.

No client or prospective client should assume that any information presented in this document serves as the receipt of, or a substitute for, personalized individual advice from New Age Alpha or any other investment professional. Any charts, graphs or tables used in this fact sheet are for illustrative purposes only and should not be construed as providing investment advice and should not be construed by a client or a prospective client as a solicitation to effect, or attempt to effect transactions in securities, or the rendering of personalized investment advice.

Past performance is not indicative of future results. Current and future results may be lower or higher than those shown. An investor in the strategy may experience a loss. Information contained herein does not reflect the actual performance of the strategy. All research and data is simulated and should not be considered indicative of the skill of New Age Alpha. You cannot invest directly in an index. This presentation does not include the deduction of any fees and expenses because an index does not have any such fees or expenses, such as management fees or transactions costs. Investments in securities will generally include fees and expenses that will decrease investment returns. The performance results reflect the reinvestment of dividends and interest.

All New Age Alpha trademarks are owned by New Age Alpha LLC. All other company or product names mentioned herein, including S&P®, Dow Jones®, GICS and MSCI are the property of their respective owners and should not be deemed to be an endorsement of any New Age Alpha product, portfolio or strategy. S&P Dow Jones S&P® is a registered trademark of Standard & Poor's Financial Services LLC ("SPFS") and Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones").

The mention of any specific individuals, books, or related references in this article is for informational purposes only. It does not imply any endorsement or affiliation with the mentioned individuals or entities.

No retrospective has been done since the article was published. The information was accurate as of the date of publication, March 2, 2022.

#### Human Factor

Human Factor™ "H-Factor" scores are being provided for illustrative purposes only and should not be construed as providing investment advice or as a recommendation to buy or sell any particular security. Human Factor scores are hypothetical in nature, do not reflect actual investments results and are not guarantees of future results. Human Factor scores measure the probability that, according to the Human Factor algorithm, a company will deliver the growth necessary to support its stock price and are not alone a recommendation about how to invest. The Human Factor is a risk that comes from humans interpreting vague or ambiguous information in a systematically incorrect way. We believe that the Human Factor causes stocks to be mispriced. We measure how the Human Factor affects stock prices to identify which stocks are over or under priced. We apply our methodology to over 5300 stocks and global indexes to identify a risk that impacts stock prices and is caused by human behavior. Investments not included in the H-Factor tool may have characteristics similar or superior to those being analyzed. The accuracy of the Human Factor is materially reliant on the integrity of the information utilized in the calculations, including any assumptions and or interpretations made by the user about the data. Data discrepancies, user assumptions, and data input by user can all contribute to differing outcomes. The underlying assumptions and processes presented herein are subject to change. Furthermore, any Human Factor score referenced herein is a snapshot taken at a particular point in time and any analysis or information contained in such score is outdated and should not be relied upon as investment advice as such information may have materially changed since publication.

#### Third Party Sources

Information contained herein has been obtained from sources believed to be reliable, but not guaranteed. It has been prepared solely for informational purposes on an "as is" basis and New Age Alpha does not make any warranty or representation regarding the information. Investors should be aware of the risks associated with data sources and quantitative processes used in our investment management process. Errors may exist in data acquired from third party vendors.

#### Ownership Of Any Companies Mentioned

The discussion of any companies mentioned in this document is not an endorsement of any company or a recommendation to buy, sell or hold any security. The views stated herein are only current through the date stated and are subject to change at any time based on market or other conditions and New Age Alpha disclaims any responsibility to update such views. New Age Alpha may own positions in any company mentioned and will disclose this when applicable. New Age Alpha typically holds securities in its portfolio only if it becomes part of the established universe of eligible securities that are part of each specific investment strategy (e.g. the S&P 500®). It is important to note that there can be no guarantee that the application of The H-Factor to produce profitable results.