

MAKENA STRATEGY INSIGHTS NOTE

ELUSIVE ALPHA

Q2 2017

Alpha, Where Art Thou?

Given the generally “difficult” recent performance record of hedge funds (and more broadly active management), we have decided to focus this quarter’s analysis on deciphering and identifying environments in which active management strategies should flourish. The investment community has been abuzz with various theories attempting to explain the growing disappointment around the amount of alpha generated by active management strategies such as hedge funds. Rather than add another opinion piece to that cacophony, we decided to take a rigorously analytical approach to understanding market environments and then mapping those environments to various active investment strategies. Our analysis shows, among other things, that the current environment is unusually fertile in alpha opportunities - as far as we can tell the environment has not been this favorable to alpha generation since sometime in late 2006, nearly 11 years ago. Of course it is important to distinguish between alpha availability and alpha being captured by investment strategies – just because alpha is available does not mean it will necessarily be delivered by investment managers, which is where manager selection steps in. We now turn to introducing our analytical framework in an intuitive way, before turning to the results and implications of the analysis.

Dispersion

Many of the opinion pieces on the topic of poor active management performance blame low “dispersion” as the reason for poor fund performance. Unfortunately, dispersion is a vague concept that cannot be tested analytically on its own: one needs to specify which particular type of dispersion might be the cause of poor alpha generation by active managers. We therefore started with the most familiar and commonly used measure of dispersion, volatility, which is a measure of dispersion over time. Since active managers typically select a subset of assets to buy within their investable universe (aka security selection), the type of volatility we focus on is volatility inside that universe. Said differently, for active management one should focus on the volatility between securities in an index, as opposed to the volatility of the entire index, to determine whether there is an opportunity to generate alpha relative to the index as a whole. Unfortunately, as we will show, volatility alone is not sufficient to drive alpha generation opportunities. This finding led us to search for other metrics to fully describe environments in which alpha can be generated, which takes us to our next concept.

Cross-sectional Correlation

After searching across several metrics, we settled on cross-sectional correlation as the other indicator to determine whether a particular market environment has alpha availability. Cross-sectional correlation indicates how each stock is moving in relationship to other stocks within an index at a particular point in time. Using volatility and correlation as our two key metrics, we can conceptually construct a 2x2 matrix as shown in Figure 2 below.

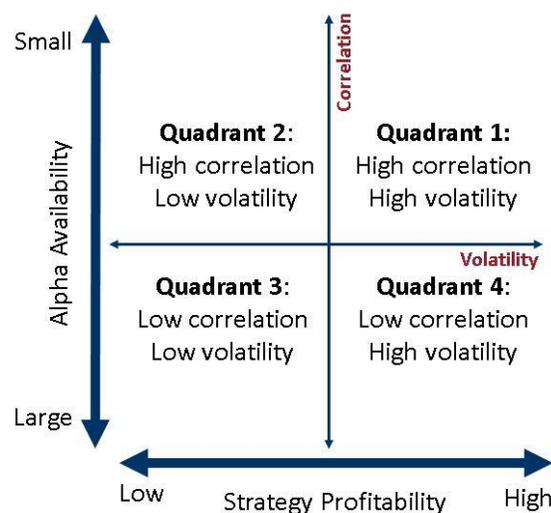


Figure 1: Alpha Determination Matrix

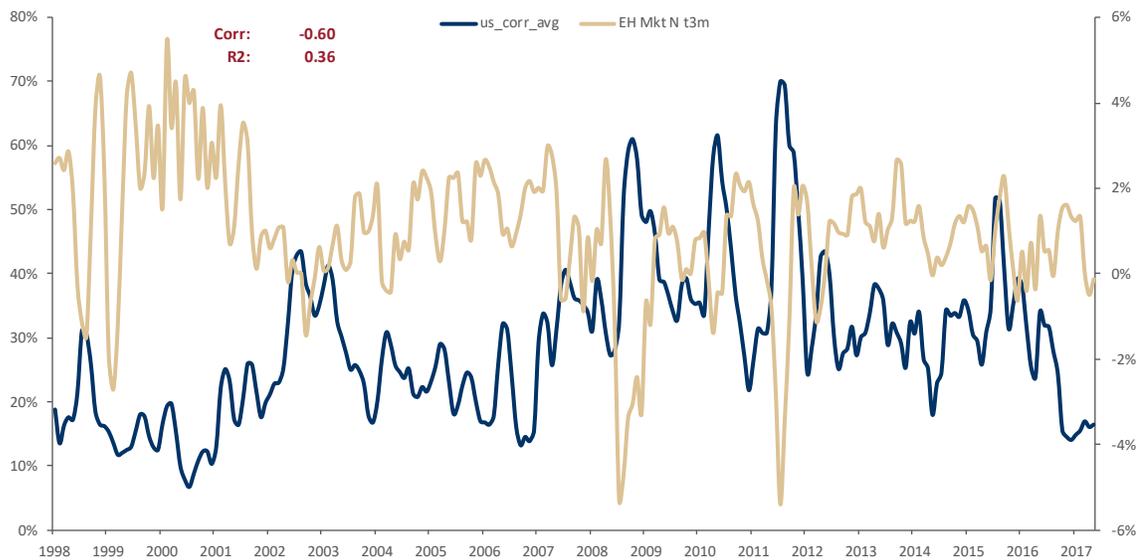
To help build an intuitive understanding of this 2x2 matrix, let us consider a simple index with two stocks, A and B, and a simple portfolio, 50% long stock A and 50% short stock B. Such a portfolio's P&L is therefore straightforward: $P\&L = 50\% * (\text{Change in A stock price}) - 50\% * (\text{Change in B stock price})$.

1. Starting with the top of the Y-axis: imagine we are in an extreme world where all stocks are perfectly correlated, i.e. stock A and stock B move in exactly the same direction 100% of the time. In that case, gains from the long position in A would be exactly offset by losses in the short position in B. For example, if A moves up \$1, then so will be B, and therefore the $P\&L = 0.5 * (\$1) - 0.5 * (\$1) = \$0$. In a perfectly correlated world, there is no *opportunity* to generate alpha. The implication in such an environment is that there is very little benefit to active management in general.
2. At the other extreme, imagine we are in a world where stocks are all perfectly inversely correlated, i.e. stock A and stock B move in exactly the opposite direction 100% of the time. For example, if A moves up \$1, then B will move down \$1. *If* the manager selects the right stocks to be long and short, then the $P\&L = 0.5 * (\$1) - 0.5 * (-\$1) = \$1$. On the other hand, if the manager selects the wrong stocks to be long and short, the $P\&L = 0.5 * (-\$1) - 0.5 * (\$1) = -\$1$. In a perfectly inversely correlated world, there is alpha opportunity, but capturing that alpha is guaranteed. The implication is that in such an environment manager selection, and more generally active management, is of utmost importance, because even though there is large alpha opportunity, it will not necessarily be captured if the investor is not skilled or the investment strategy is misguided.
3. Now moving along the X-axis, with the more familiar concept of volatility. Imagine we are in a world with zero volatility, i.e. stock prices are constant. In that case, whether there is ample alpha availability or not, if the stock prices do not change, then any investment we make will have a zero return. As volatility increases, *the size of the investment's potential P&L increases*. Seen from this perspective, the implication is that while volatility can magnify profits, if there is no alpha opportunity to start with, then there will be little profits to reap. To use the language of mathematics, volatility is necessary but not sufficient to guarantee strong investment returns. In other words, correlation is the key factor to watch, since volatility can be "manufactured" via the use of levered strategies. Any scenario with strong alpha availability is a scenario where manager selection will be a key factor in determining ultimate returns for investors. In Figure 2 above, Quadrants III and IV are where manager selection can make a substantial contribution to profits.

To validate our analysis, we compared the performance of market neutral hedge funds in relation to correlation (alpha availability). We selected market neutral hedge funds since they are the closest expression of a pure alpha return stream relative to other investment strategies. If there is alpha availability one would expect an index of market neutral hedge funds to reflect that availability more readily than other investment strategies.

Figure 3 below illustrates this exercise. Note how our correlation measure has been a good historic indicator of alpha availability, with periods of low correlations corresponding to periods of high hedge fund profits. Furthermore, whenever correlation spikes, such as in 2009, 2010, and 2011, hedge fund performance suffers with significant losses registering in those years. Finally, note how since early 2016, correlations have fallen dramatically, and now sit at 1½ standard deviations below the long-term median, a level not seen since late 2006.

US Correlation & Equity Mkt Neutral Returns

**Figure 2: Low Correlations Drive Alpha Generation***Labeling the Quadrants*

If one happens to be in the lucky space of Quadrant IV in Figure 2 above with low correlation and high volatility, about as close to investment “nirvana” as one could be, then profits from active investment strategies should be plentiful. If on the other hand, the environment is in Quadrant III, characterized by strong alpha availability but low volatility, then investors can still find plentiful alpha opportunities, though volatility will need to be magnified through levered strategies to generate meaningful P&L. In other words, Quadrant III is where Private Equity, Real Estate, levered hedge funds, and structured transactions should do well. These are all active strategies that require strong manager selection skills to ensure that the alpha opportunity is captured by the investor.

Finally, Quadrants I and II are environments where there is little alpha availability, so more passive / beta-seeking strategies are generally the safest bet, in particular Quadrant II where volatility is low. Quadrant I is more “dangerous” because there is volatility but it is not rewarded with additional alpha, so risk management overlays and long-biased long-short strategies (or any other strategies with some sort of hedging in place) should be the more rewarding strategies in those environments.

This conversation begs the question: where are we now in relation to Figure 2 above, and how have we moved about historically amongst the Quadrants? To get statistically robust results, we went back as far as we could historically, collecting daily and weekly price data – in the process completing over 2.5 billion correlation and volatility calculations.

Figure 4 below shows the results of our calculations and highlights in red the current market environment: an alpha-rich environment but with low profitability. A couple observations worth highlighting: (i) the range of volatility is substantial, with some markets exhibiting six standard deviation extremes – the implication being that if an investor is patient enough, the profitability of an active strategy has a solid chance of jumping up at some point in the cycle (ii) on the other hand, correlations are more “well behaved” with very few markets exhibiting more than two standard deviation extremes – implying that alpha availability is rarely at extreme levels, which makes sense intuitively as one would expect investors to quickly move into high alpha opportunities, thereby exhausting the opportunity.

US Market Environment Matrix

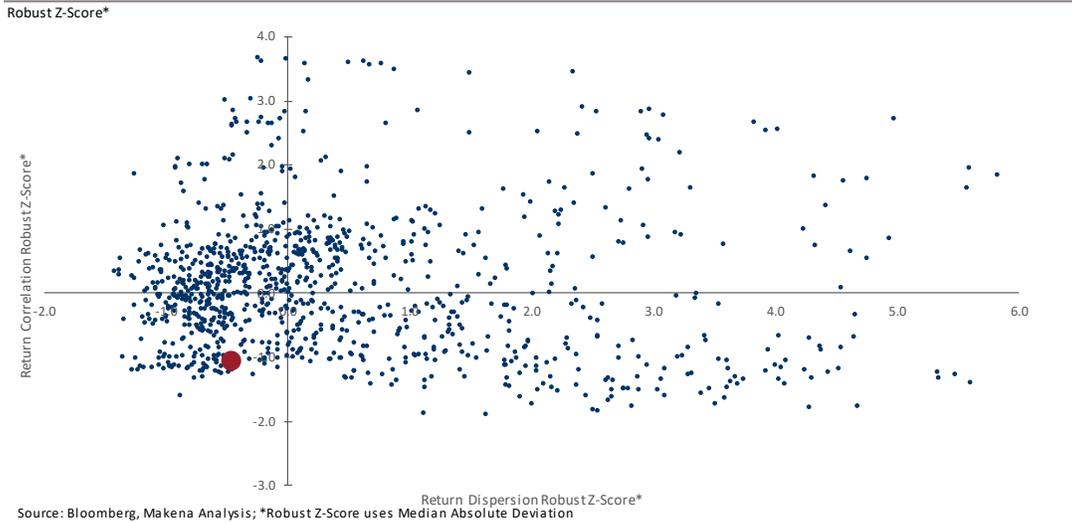


Figure 3: Historical Environment Standard Deviations

One finding that surprised us is that environments are fairly stable over long periods of time. Figure 5 below shows the S&P 500 over time with the different Quadrants superimposed. Note how in some instances the environment stays in a particular Quadrant for years at a time. This implies that the periods are long enough for the trend to be recognized and captured by portfolio managers. Furthermore, note how we have recently shifted environments: after a period of approximately 6.5 years in Quadrant II, where passive strategies dominate, we have now shifted into Quadrant III, a high alpha availability quadrant, after nearly an 11-year hiatus (barring a few weeks in 2014). Intuitively this seems to make sense, as it coincides with the end of QE and the signaling of the unwinding of central bank balance sheets. Pragmatically, as investors, this makes us optimistic that hedge fund strategies are on the cusp of a new period of high profitability, which if our observation around stability of Quadrants holds, implies that this period of high hedge fund profitability may be quite long-lived.

Market Environment Quadrant and S&P500 P/E

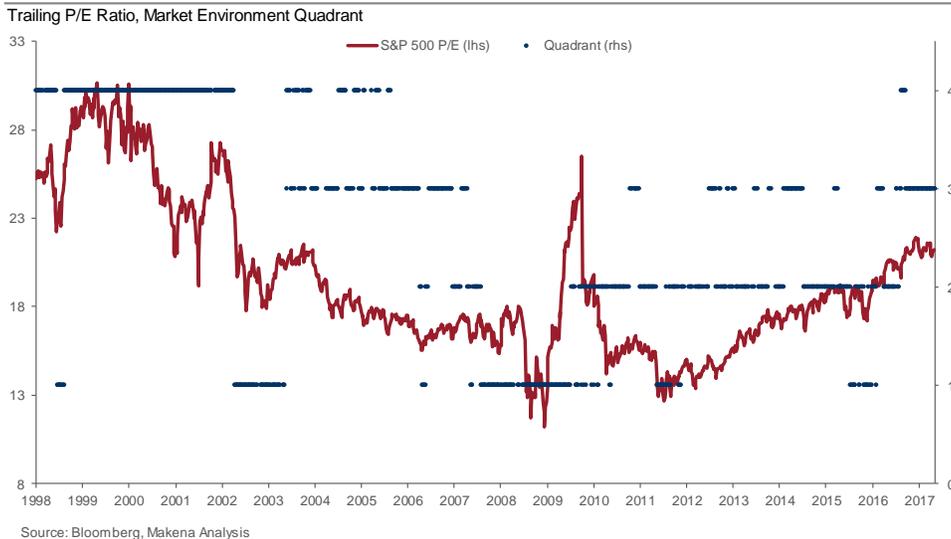


Figure 4: Persistent Market Environments

Summary of Investment Strategy

In our Q4 2016 letter, we outlined a series of investment recommendations. Many of those themes remain unchanged.

- i. *Caution over growth companies during the run-up to and immediate aftermath of the Fed's first hike*
Growth companies will likely exhibit heightened sensitivity to the effects of a rate hike. However, in a world of scarce growth, they may be able to attract and sustain higher valuation multiples than they have attracted historically, suggesting that risk is perhaps somewhat muted.
- ii. *Similar to (i) above, buy into long-term growth via EM equities*
Growth *countries* will also likely exhibit heightened sensitivity to the effects of a rate hike. Indeed, many EM markets seem to have already priced-in the effect of lift-off. Moreover, in a world of scarce growth, they should be able to attract and sustain higher valuation multiples than they have historically. Said differently, some EM countries currently represent "growth at a reasonable price."
- iii. *Longer duration vs. shorter duration in Fixed Income portfolios*
Uncertainty over the timing and pace of the coming Fed hiking cycle is likely to continue to generate substantial volatility in the short end of the curve and potentially less volatility in the longer end. Additionally, should market expectations price a lower growth rate and a lower inflation outlook following a rate hike, we could actually see a rally in the long end.
- iv. *US small and medium enterprises (including Private Equity) vs. large-caps*
With a strong dollar and therefore weaker commodity prices, the U.S. consumer will continue to favor more domestically-oriented companies.
- v. *Competitive EM over commodity EM (across asset classes)*
While weaker commodity prices hurt commodity exporting nations, it also benefits manufactured goods-producing nations through lower input costs. The stronger dollar and increased disposable income available to the U.S. consumer should also benefit manufactured goods-producing nations.
- vi. *Long Europe exporters and periphery intra-Europe exporters*
Between lower commodity prices and lower wages, thanks to internal deflation across most of Europe, European exporters should see margins continuing to improve. The weaker Euro will also bolster exports to outside the Eurozone and from peripheral Europe to the core as a substitute for imports from outside the Eurozone.
- vii. *Long U.S. services / non-traded goods companies vs. U.S. exporters*
The flip side of a strong dollar is that export-led U.S. companies will likely see earnings and earnings growth hampered from overseas operations. On the other hand, due to weak wage inflation dynamics, U.S. services will benefit from a slower unwind of high margins as it takes time for declining labor slack to drive wage pressures.
- viii. *Long EM reformers vs. laggards (across asset classes)*
Some countries have embraced reforms since the last few crises, implementing flexible exchange rates, minimizing interventions in their domestic economies, and in general fostering an environment where private industry can thrive. These countries should be able to navigate volatility driven by exchange rates and the Fed's moves more successfully than the laggards who have not reformed.

As always, we are thankful for your continued trust and support.

The Partners of Makena Capital Management

Analysis by Michel Del Buono, Global Investment Strategist

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