LIMITS TO ARBITRAGE AND THE DANGER OF INVESTING IN VOLATILITY

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Short selling is not easy. As a short seller, you face not only a market that has stacked the odds against you, but you have a limited time horizon and the possibility of unlimited losses. Yet, you also play a vital role in the market. Your selling pressure keeps prices from rising too high, even if such an approach is high risk. Effectively, you are an arbitrageur.

What stocks would you most like to short? Likely, you would avoid the most volatile stocks, because short-term price fluctuations could force you to take losses and transaction costs could be high. Instead, you would prefer the least volatile stocks. The result of this behavior is that the most volatile stocks are also the most overpriced and thus have lower returns than the least volatile stocks. This results in the volatility stock anomaly.

Should higher volatility result in higher returns?

All of this, of course, is in contradiction to traditional asset pricing theory, that volatility equates to risk, and risk and return ought to be correlated. In fact, one of the academic publications to receive the most practitioner attention recently has been AQR's "Betting Against Beta." A copy of that paper can be accessed through AQR's website, here. It asserts simply, that an equal weighted portfolio of low beta stocks outperform an equal weighted portfolio of high beta stocks and that a strategy that goes long low beta stocks and short high beta stocks produces impressive abnormal returns.

In addition to beta volatility, though, all stocks have another component of volatility that is often overlooked. Idiosyncratic, or firm specific, volatility represents the component of a stock's movement that is unrelated to market movements. This type of volatility has the most pronounced impact on discouraging short selling, due to limits to arbitrage, a finding documented in a paper by

Stambaugh, Yu and Yuan from 2015. Because of this "arbitrage asymmetry" stocks with high idiosyncratic volatility will underperform by the most if they are first overpriced, and similarly they will produce excess returns when they are underpriced.

Yet often investors pay little attention to idiosyncratic volatility because theory holds that this type of risk can be eliminated simply through diversification. Yet recent research by Liu, Stambaugh and Yuan suggests that the underperformance of high beta stocks is related to the stock's idiosyncratic volatility. Specifically, stocks with high idiosyncratic volatility also tend to have high betas, and high idiosyncratic volatility is actually the driver of the underperformance.

Does higher volatility result in *lower* returns?

Why idiosyncratic volatility is the driver of performance is evident in the tendency for the Betting Against Beta strategy to only work among overpriced stocks. If overpriced stocks are the result of the absence of short sellers willing to short stocks they deem "too risky" (perhaps because the stocks have high idiosyncratic volatility), then it follows that the reason high beta stocks underperform is because they also tend to have high idiosyncratic volatility, and not because they have a high beta.

In summary, the most volatile stocks tend to be more overpriced than safe stocks are underpriced. This is because it is harder to arbitrage to the downside by shorting overpriced stocks. The result is that the riskiest stocks are often the biggest drag on a portfolio. A portfolio that avoids such stocks will thus outperform.

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