Drop Your Shorts?

An Academic Wrecking Ball Aims at Hedge Funds

Short selling, a key plank of their strategy, is scarcely worth the bother if a new paper is correct.

By *John Authers*

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Gentlemen, Drop Your Shorts

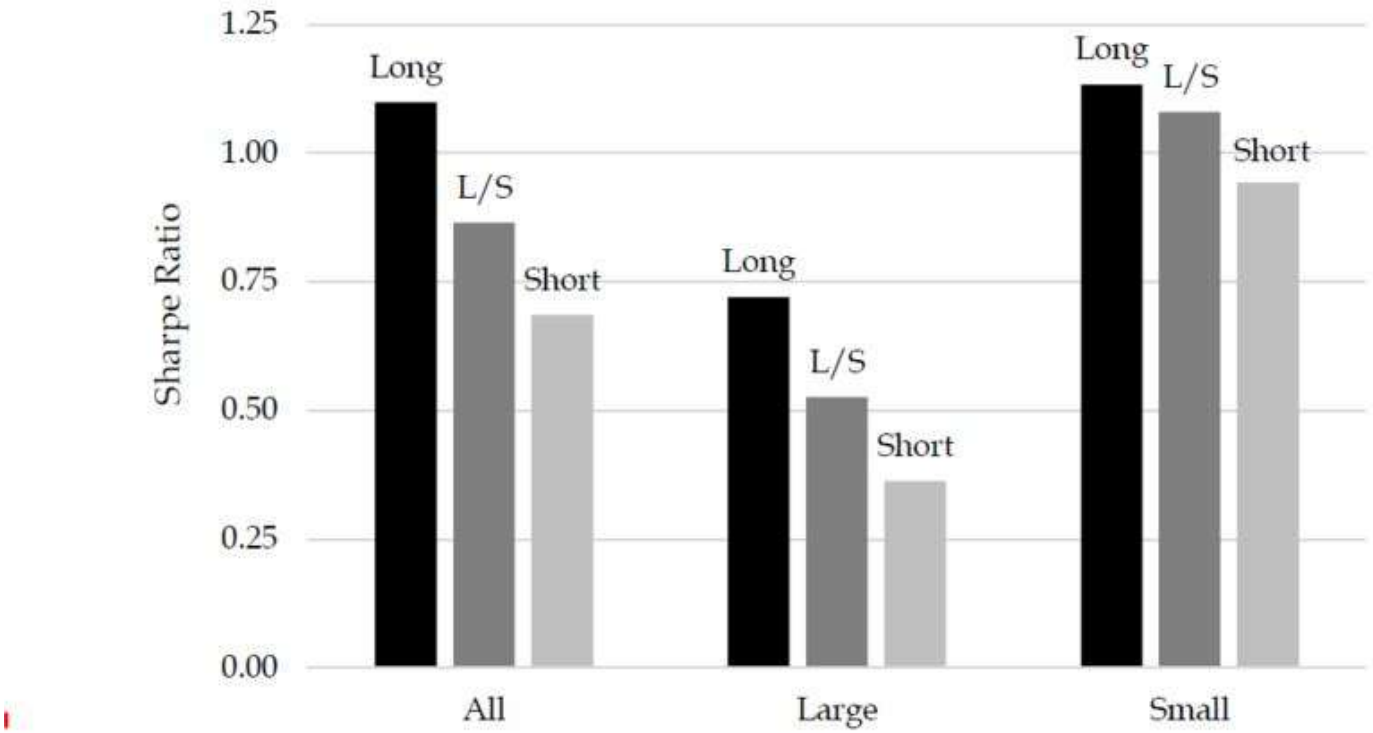
Quant investing, and indeed much of the hedge fund industry, is built on the power and freedom that come with the ability to sell short. When you short a security (borrow and then sell it, meaning you make money if the price falls and you then re-buy it), you can profit when markets go down as well as up. Hedge funds, unlike mainstream mutual funds, can sell short, and this opens exciting new strategies. In 2000 and 2001, as the dot-com bubble was bursting, equity hedge funds succeeded in making money, and many investors noticed. "Liquid alts" — hedge fund-like strategies on offer to retail investors — tend to be based on this, as is much of the emerging work in "smart beta" — tweaking well-known indexes to emphasize particular factors.

Academic finance is also implicitly based on the power of shorting. The investment factors identified in the academic literature are usually expressed on a "long-short" basis. For example, the value factor (buying stocks which look cheap compared to their fundamentals) is expressed as the gap between the performance of the cheapest (long) and the most expensive (short). The same is true of momentum strategies (long stocks that have been winning, short stocks that have been losing), and low-volatility (long low-volatile stocks and short more variable ones), and so on. The factors laid out in the massive empirical work by Eugene Fama of the University of Chicago and Kenneth French of Dartmouth College are expressed on a long-short basis, and so the rest of the academic community tends to follow.

Now comes an academic wrecking ball, from David Blitz, Guido Baltussen and Pim Van Vliet, a group of quants who work for the Netherlands-based fund manager Robeco. In this new paper, called "When Equity Factors Drop Their Shorts," the Robeco team breaks down the contribution to performance made by the long and short legs of equity positions — and finds that the short position is scarcely worth the bother.

The article is published today, and is about to go through the academic wringer (as have other pieces by the Robeco team). For now, I will outline the main findings. Very many people have an incentive to prove them wrong, so we can expect a robust academic and professional debate over this.

Arguably the central finding is contained in this chart. The researchers looked at returns on U.S. stocks from 1963 to 2018 which have already been closely researched. After testing a long strategy, a short strategy (merely betting against the worst stocks according to a factor), and a long-short strategy, risk-adjusted returns turned out better in all cases for the long-only strategy. As might be expected, though, returns were higher and the gap between the long and the short end of the trade was narrowest, in small-cap stocks, where we can assume there is less information and the markets are less efficient:



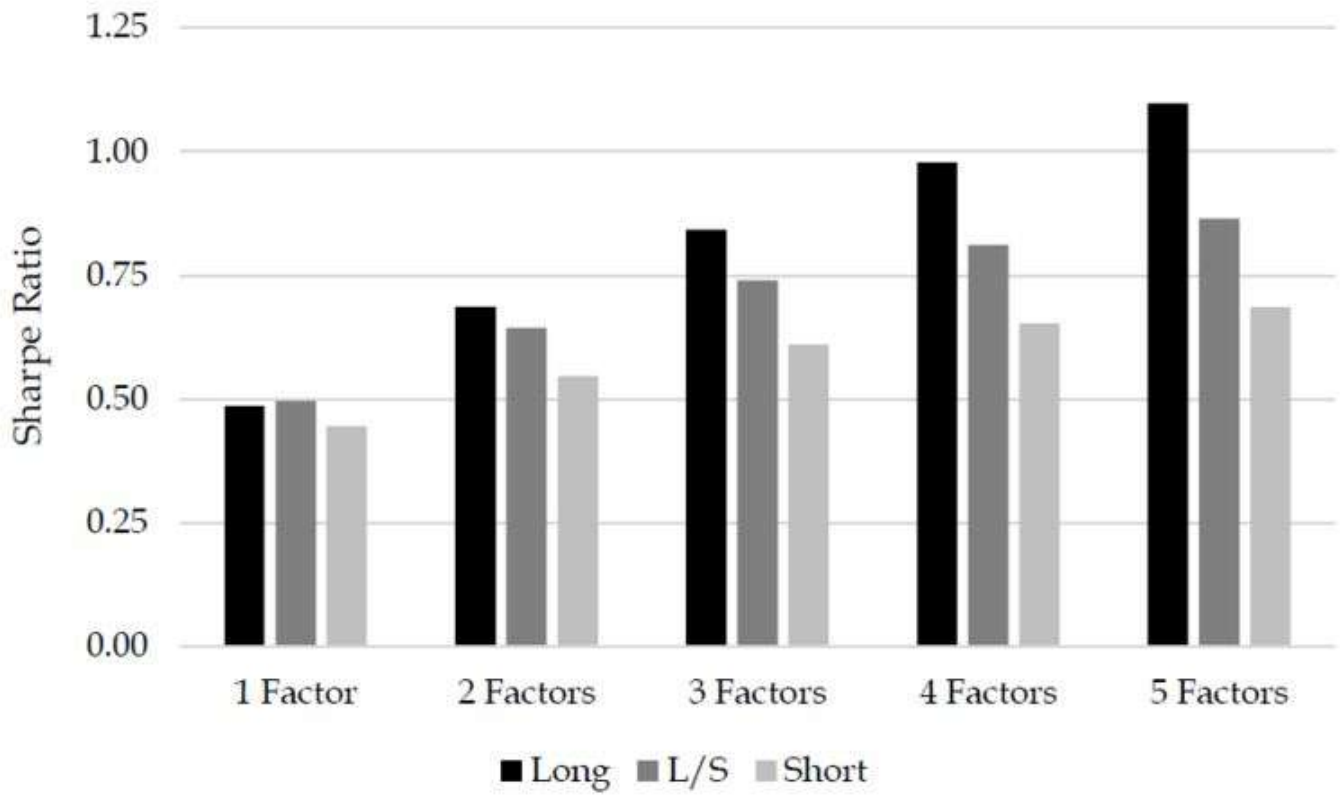
To be clear about what is being measured here, the "long" is compared to a straight long position on an index, while the "short" position is compared to a short position on the relevant benchmark. Markets tend to go up over time, so the long will naturally tend to do better, but that isn't what is being measured here. Instead, we see that the "long" side of a factor (that it is very cheap, and so on) is a better predictor of outlying performance than the "short" side of that factor. Extremely expensive stocks aren't as likely to lag the market as extremely cheap stocks are to lead it.

Also, the research stands up that there are diversification benefits from adding extra factors. All the strategies improve their risk-adjusted returns this way; and the advantage of the "long" over the "short" widens with extra factors.

One other important finding is that while the long sides of different factors tend not to correlate with each other, the short sides do. Put more in layman's language, there are a number of different ways to spot a stock with a good chance to outperform, but stocks with a good chance to underperform look bad according to a number of different factors. Expensive stocks ("short value") also tend to be volatile ("short low-volatility"), and so on. This again suggests that there is little point in using factors to identify individual stocks to short.

All of this research is on the basis of "zero friction." In other words, it assumes that it is as cheap to maintain a short position as it is to maintain a long one. In real life, this isn't true. Selling short requires paying interest to someone, and that interest will increase if the stock is a popular one among short-sellers. There is a risk that the lender will demand their stock back. And shorting requires a thick skin. Companies seldom complain about investors buying their stocks, but tend to get very vocal about being shorted. Finally, there is a risk-reward issue. The returns on a short position are capped at 100% (if the stock goes to zero), while the potential losses are infinite. So the balance is set against shorting even before starting.

None of this excludes forensic short-selling by specialists. Selling short isn't just the opposite of choosing stocks to buy; to short a company with confidence requires a close examination of its books and its business



confidence, and a conviction that it is fatally wounded. To be sure the strategy works, short-sellers need to be prepared to talk about their ideas a lot in public, and take a lot of flak. Some famous successes show that short-selling like this is a vital part of the market eco-system — think of Jim Chanos's attack on Enron, Bill Ackman's attack on the monoline credit insurers before 2008, or David Einhorn's attack on Lehman Brothers.

But this research shows that using factors to identify short candidates the same way that we identify stocks to buy isn't a good way to deploy capital. For those who don't want to expose themselves to the overall direction of the market, it is far cheaper and easier, and no less effective, just to take a short position in the index.

All of this implies that a lot of hedge funds and quants are wasting their time and money, so we can expect this paper to face a robust response. But the outline of the argument looks clear and persuasive.

John Authers is a senior editor for markets. Before Bloomberg, he spent 29 years with the Financial Times, where he was head of the Lex Column and chief markets commentator. He is the author of "The Fearful Rise of Markets" and other books.

Forbidden Knowledge: Long-Only Academic Factors are Also Cool

By Wesley Gray, PhD November 27th, 2019

When Equity Factors Drop Their Shorts

David Blitz, Guido Baltussen, and Pim van Vliet

What are the Research Questions?

The standard academic approach to factor analysis is through the lens of long-short portfolios (which often confuses practitioners!). For example, a researcher may take the universe of the largest 1,000 stocks and sort them on "value", as measured via book-to-market. The "value factor" portfolio may go long the top third cheapest stocks ("value leg") and go short the bottom third most expensive stocks ("glamour leg").(1)

Long/short academic factor portfolios are convenient because they capture the "spread" between two extremes associated with a given characteristic (e.g., book/market, past 12-month returns, gross profits / total assets, etc.). Researchers can study the spread and gain important insights on how markets work. In addition, long/short factors are usually uncorrelated to the market and play well in the statistics sandbox. This feature makes regression analysis easy and avoids multicollinearity problems (i.e., running a regression with highly correlated dependent variables will make interpreting factor coefficients impossible).

Of course, the problem with academic long/short factors is that practitioners often don't care about multicollinearity or the short side of a factor portfolio — they care about building long-only portfolios that solve investor needs/demands.(2)

What does this mean in practice? For the vast majority of investors, long-only factor portfolios are the most realistic path to capture the benefits of factors. And to the extent an investor has more advanced knowledge, one could seek to isolate the benefits of factors, by simply being long a specific factor portfolio and then shorting a broad market index (to minimize market, or "beta" risk). This "long the factor, short the market" approach can simplify the operational footprint of a strategy and tell us potentially useful information about long-only factors and their use in real-world portfolios. (We use this approach in our Global Value Momentum Trend Index, for example). But a natural question is whether or not long-only factors actually generate any expected portfolio benefits. One hypothesis is that all the factor mojo is isolated in the short leg and that the long-leg is worthless. This paper is an initial investigation into this question.

Up until this point, not a lot of formal research has been done on isolating the specific benefits of the long-leg and short-leg of factor portfolios. The crew at Robeco address this hole in the literature in their new research piece, "When equity factors drop their shorts." The research ditches the traditional academic conventions and investigates factor performance by going long the factor / short the market, or going long the market / short the factor.

The key questions addressed are as follows:

1. What is the performance of "long the factor and short the market" portfolios?
2. What is the performance of "long the market and short the factor" portfolios?
3. How are low-risk and value premiums affected?

What are the Academic Insights?

1. The long leg of factors drives outperformance and have a near-zero correlation across the factors (i.e., good).
2. The short leg of factors have low performance and are correlated across the factors (i.e., bad).
3. In contrast to recent research from Novy-Marx and Fama and French, the long leg of the low-risk and value premiums are NOT explained by the profitability and investment factors. The low-risk and value

premiums are actually unique. In contrast, the short-leg of the low-risk and value premiums (i.e, the high risk and expensive stocks) can be explained by the profitability and investment factors.

Why Does it Matter?

The paper's key findings are surprising and warrant a deeper dive (one can be sure AQR researchers will have a rebuttal in short order!):

In sum, short legs offer no value add once controlling for the long legs, as the factor exposure of short legs is fully subsumed by the long legs

Taken at face value, the author's findings are interesting and require a rethink of the traditional arguments for how and why factors exist in the first place. As many readers know, there are two finance religions: the efficient markets religion ("EMH") and the behavioral finance religion. EMHers have a ton of explaining to do, given the results in this paper: For example, why would the long-only factors have zero correlation while the short factors have a positive correlation? Aren't the long-only factors, which have all the positive returns, supposed to be the risky portfolios that contain all the systematic non-diversifiable risk? And aren't the short portfolios, which have much lower returns, supposed to serve as your human-capital hedge? (see "Why growth stocks are awesome").

EMH is coming out of this with a black eye, but the behavioral finance crew isn't exactly "winning." Behavioral finance, as understood in academic research, suggests that prices do not reflect fundamentals because 1) investors are constrained and make poor decisions and 2) exploiting these opportunities is costly (i.e. "limits of arbitrage"). Unfortunately, behavioral finance would suggest that the short leg of factors should have higher "alpha" because the limits of arbitrage are arguably more intense (i.e., shorting is expensive and very difficult). This paper seems to say the opposite — d'oh!

Where does that leave us? Well, apparently we still don't understand exactly how and why markets work. Maybe none of this is too surprising, as we have already outlined in the past that factor investing is probably more art and less science.

Abstract

This paper makes a breakdown of common equity factor strategies into their long and short legs, and finds that (i) most added value tends to come from the long legs, (ii) the long legs of factors offer more diversification than the short legs, and (iii) the performance of the shorts is generally subsumed by the longs. These results hold across large and small caps, are robust over time, carry over to international equity markets, and cannot be attributed to differences in tail risk. Moreover, we do not even account for the substantially higher implementation costs involved with the shorts compared to the longs. We also challenge recent claims that the value and low-risk factors are subsumed by the new Fama-French factors, as we find that this result is entirely driven by the short legs of these factors and breaks down for the longs. Altogether, our findings show that decomposing factors into their long and short dimensions is crucial for understanding factor premiums and building efficient factor portfolios.

References

1. This isn’t exactly how it always works, but close enough. See here for more details on the Fama French factor portfolios or read the data section of the paper under discussion.
2. There are obvious exceptions. AQR, for example, specializes in delivering long/short portfolios that reflect the construct of academic factor portfolios. The approach is considered to be “alpha efficient” because the user can capture “edge” on both the long and the short side of the portfolio.

Our thoughts

The one exception we've made to the above findings is AQR's QMNIX. This OEF, which we no longer use for clients, has been a major disappointment since the beginning of 2018, as shown below in Morningstar's chart. We've added the S&P 500 (orange line) for comparison: