



ALTERNATIVE INVESTING

The Hedgeie in Winter

May 31, 2018

Once again, I will review why hedge fund returns shouldn't be compared to 100% long equities and how to do a more proper comparison. Analysts and authors often compare hedge fund returns to 100% equities (most often, the S&P 500). Then, almost always based on the last nine years since the global financial crisis (GFC) lows, they declare hedge funds an epic disaster. That's just flat-out wrong. Comparing hedge funds to 100% equities would be a bad comparison at any time. To make things worse, this comparison is done over a cherry-picked time period. So this one has it all! An always fallacious comparison conducted over a particularly extreme period for that always fallacious comparison.

While I'm harshly critical of the above ubiquitous, but broken, comparison, I certainly don't rescue hedge fund performance since the GFC. Not close. Actually, I show that doing the comparison correctly, hedge funds have petered out in the last third to half of my sample, adding little to no value. "Petering out" means not adding or subtracting much value. This is far less extreme than the commonly reported epic disaster of hedge funds destroying many billions of dollars of their clients' money, which follows from the aforementioned fallacious comparison. But it's still not very good. I go on to endeavor to figure out why, if not just a random occurrence which is always possible, this "petering" has occurred.

I compare hedge fund returns with the returns from traditional long-only stock-picking. I argue that much of the "petering out" of hedge funds in the last third of our sample is likely due to hedge funds transforming from something mostly different from traditional stock picking (from say the early 1990s to the early 2000s – and likely even more true earlier in time, but unfortunately we don't have reliable data much earlier) to something far closer to traditional active mutual funds (early 2000s to now) ... but with higher fees.¹

Much of the "right" way to critique hedge funds I study here is ground I've covered before. That is, we must compare hedge funds to the right beta (not 1.0) and, perhaps, adjust for other well-known factor exposures. But part is new, critiquing hedge funds not simply for providing far less alpha in more recent times, but, partially and provisionally, explaining why. It's not just their returns that have gotten more pedestrian, but the actual strategies they employ have as well. This is different from, and more concerning than, say, still relatively unique strategies just having a poor period (which, of course, can happen).

The Wrong and Right Way

Legions of journalists, pundits, bloggers, FinTwits, famous investors, and other financial glitterati, have made very critical comments about hedge fund performance — most, if not all, is based on incorrect analysis.

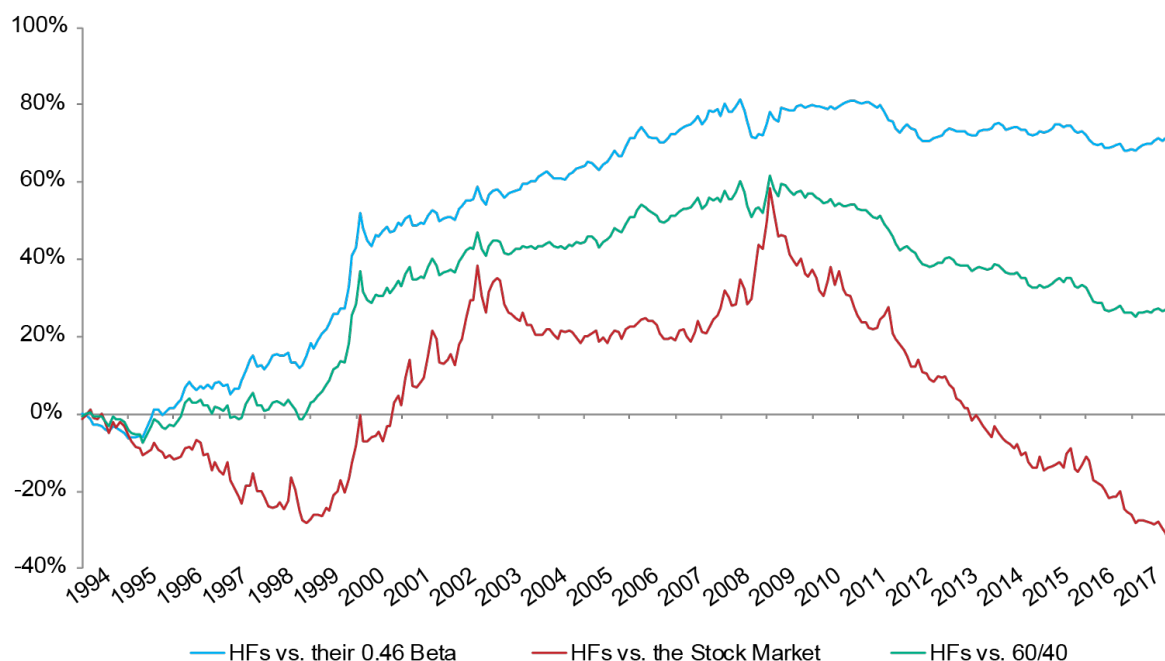
I have tilted at the windmill of this silliness before (two examples are [here](#) and [here](#)).² But, apparently, shockingly, I have not had great influence on the dialogue as the bad comparisons and histrionic statements that follow them still dominate the discourse. So, once more I raise my lance, spur on my faithful destrier, and charge, dreaming the impossible dream that this time I'll be more convincing. If a picture helps, try this one (I'm the squinting dude):



As just one example, let's start with a quote from [here](#) (itself quoting a [Businessweek article](#)) that is clearly meant to be very damning: "Hedge funds that invest in stocks returned 7.2 percent annually from 2009 to 2017, which was less than half the S&P 500's return, according to data from Hedge Fund Research." Here's another quote from [here](#) about shorter period returns: "Hedge funds delivered an average return of 5.6% in 2016, falling well short of the 11 percent gain of the S&P 500 last year." Hmm, both imply that hedge funds delivered returns consistent with a beta of somewhat less than about 0.5 and little alpha.³ Does that sound terribly damning? Well the lack of alpha isn't good, but not adding is not the same as massively subtracting which the articles imply is occurring. I'm picking on these few recent articles as I need some illustrative examples. But the problem is precisely that these aren't exceptions.⁴ These very bad comparisons are everywhere.

Comparing hedge funds to 100% equities is flat-out silly.⁵ Hedge funds have historically, rather consistently, delivered equity exposure (beta to my fellow geeks) just under 50%. In fact much of their point is, supposedly, to be different from equities. I mean that they are at least partly hedged investments. Put more bluntly, *it is in the freaking name!*⁷

Let's dig into this further. Below I graph the cumulative return since 1994 (when we think decent hedge fund index data is available that's not riddled with survivorship bias⁸, of 1) long-short equity hedge funds⁹ versus 100% in the stock market (the red line,¹⁰ 2) long-short equity hedge funds versus 60/40 stocks/bonds (the green line), and 3) long-short equity hedge funds versus a 46% exposure to stocks (their realized beta from a full period monthly regression,¹¹



Source: AQR. Hedge fund long/short equity index return series are from Credit Suisse and Hedge Fund Research, returns for stock market (MKT), size (SMB), and risk free rate are from Ken French's website, bonds are 10-year U.S. Treasury returns from Datastream, and active manager mutual fund returns are from Morningstar. Data from 1/1994 through 12/2017. See text and disclosures for additional important information. These are not the returns of an actual portfolio AQR managed and are for illustrative purposes only. Past performance is not a guarantee of future performance results.

The red line is just ridiculously non-informative, except if you want to know which way the stock market was heading. It almost always goes down when stocks go up and vice versa, as we see very clearly, but certainly not exclusively, over the last nine-year bull market.¹² This is because it is just [frakkin](#) silly to compare a significantly hedged investment to a 100% net long one.¹³ Nevertheless, the red line above, often examined **only** over the last nine years, is the line that launched 1000 silly inflammatory articles.

The green line, hedge funds versus 60/40, is less biased, but still tends to rise when equity markets fall and vice versa (it's less biased as 60% is closer to, but still a bit above, the actual equity market beta of hedge funds).¹⁴ Now, finally, the blue line is where it gets interesting. It's the proper comparison (though, as we'll see soon, you can enrich the model beyond just comparing to the market). And it's not just of theoretical interest. If you have a reasonable ex ante idea that the beta is around 0.5, you would likely fund any investment in hedge funds only half out of equities (otherwise you're also making a conscious permanent asset allocation or a market timing decision, both of which should be judged separately from judging hedge fund performance).¹⁵ Now well this investment does *versus this beta* is the direct measurement of how this decision mattered. Looked at properly, the story is more complicated and less dramatic. Over the full 20+ year sample, hedge funds have handily outperformed their exposure to the market (that is, the blue line ends substantially positive). Thus, over the full period, hedge funds, at least according to these indices,¹⁶ helped anyone who allocated to them and who also had a clue that they were about 40-50% net long stocks.

But, clearly, even looking at the strong full-period blue line, the last third of the sample is a big disappointment. Not a disappointment on the scale of foolishly looking at the red line and concluding hedge funds have incinerated trillions in wealth. Nope, this is more a fizzle (or the aforementioned "petering out"). And it's a net of fees fizzle too. So, they've added some value even over this last period, just not enough to cover fees.¹⁷ This is certainly not going to pass as a ringing hedge fund defense. Nobody has ever marketed a fund or asset class with the tag line "we'll likely tread water net, which is actually pretty impressive after we take out our massive fees." But it's not nearly the disaster that's so often claimed.

Let's Use Regressions

Some definitions¹⁸

ELS = the monthly return over cash to equity long-short hedge funds¹⁹

ACTIVE = the monthly return over cash to traditional active stock picking mutual funds²⁰

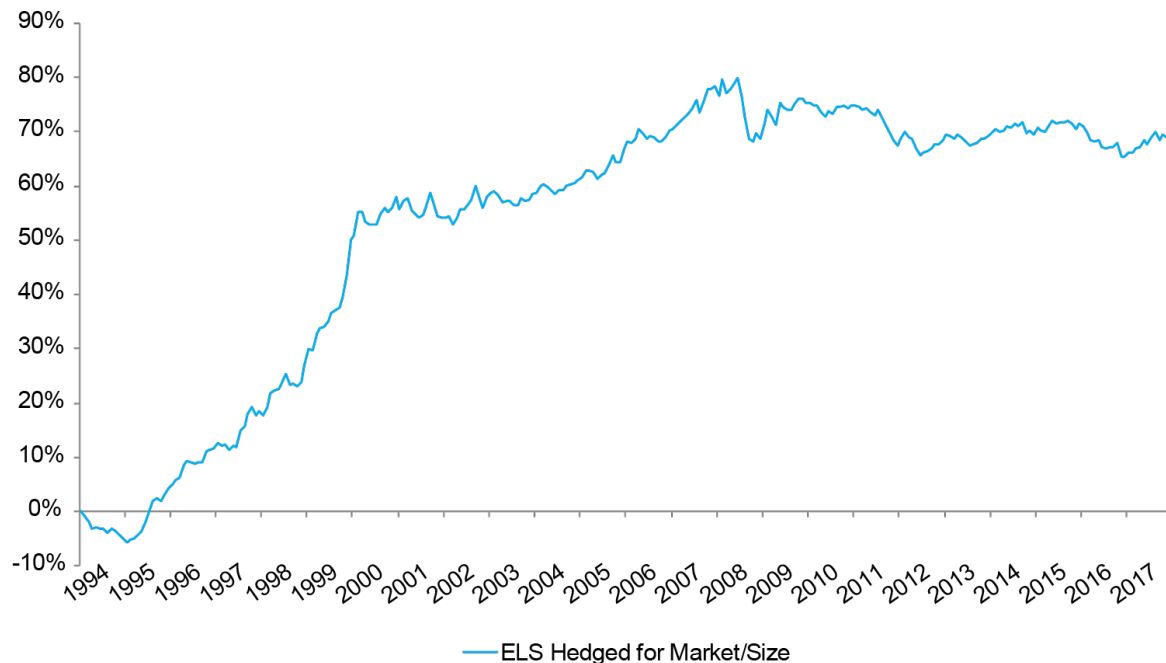
MKT and SMB are the excess returns from two of the factors in the standard Fama-French 3-factor model (MKT is the capitalization weighted U.S. stock market over cash and SMB is the spread of small over large stocks) both from [Ken French's website](#).

All regressions are run over the period 1994-2017. Reported are annualized alphas, betas to market and size (SMB), corresponding t-statistics (in parentheses below the coefficients), and the adjusted R^2 from the regressions.²¹

$$\text{ELS} = 2.9\% + 0.46 \times \text{MKT}, \quad R^2 = 64.0\% \\ (2.74) \quad (22.60)$$

$$\text{ELS} = 2.9\% + 0.42 \times \text{MKT} + 0.22 \times \text{SMB}, \quad R^2 = 72.6\% \\ (3.10) \quad (23.22) \quad (9.51)$$

Clearly hedge funds are long the market and have a strong bias to small vs. large stocks. Now we create something I call a “hedged hedge fund.” Imagine the 0.42 and 0.22 coefficients in the second regression above were known at the outset. If one went long hedge funds (ELS) but shorted 0.42 of the market factor and 0.22 of the small vs. large factor, one could create a fund that rose and fell independent of the market or small vs. large spread (two things presumably attainable at less than hedge fund fees). The cumulative return of such a hedged hedge fund is plotted below.



Source: AQR. Hedge fund long/short equity index return series are from Credit Suisse and Hedge Fund Research, returns for stock market (MKT), size (SMB), and risk free rate are from Ken French's website. Data from 1/1994 through 12/2017. See text and disclosures for additional important information. These are not the returns of an actual portfolio AQR managed and are for illustrative purposes only. Past performance is not a guarantee of future performance results.

Of course, this looks a lot like the blue line in our first figure as all I did differently here is also hedge for SMB, an empirically less important factor. That the total return over the full sample is a strong positive is the same thing as observing that the regression intercept above is 2.9% per annum (3.1 t-statistic). But, obviously, again, the concern is the post-GFC returns. While not the disaster many claim, we can comfortably say that recent returns on hedge funds are disappointing vs. their goals and their history.²² Now let's look at traditional active stock pickers.

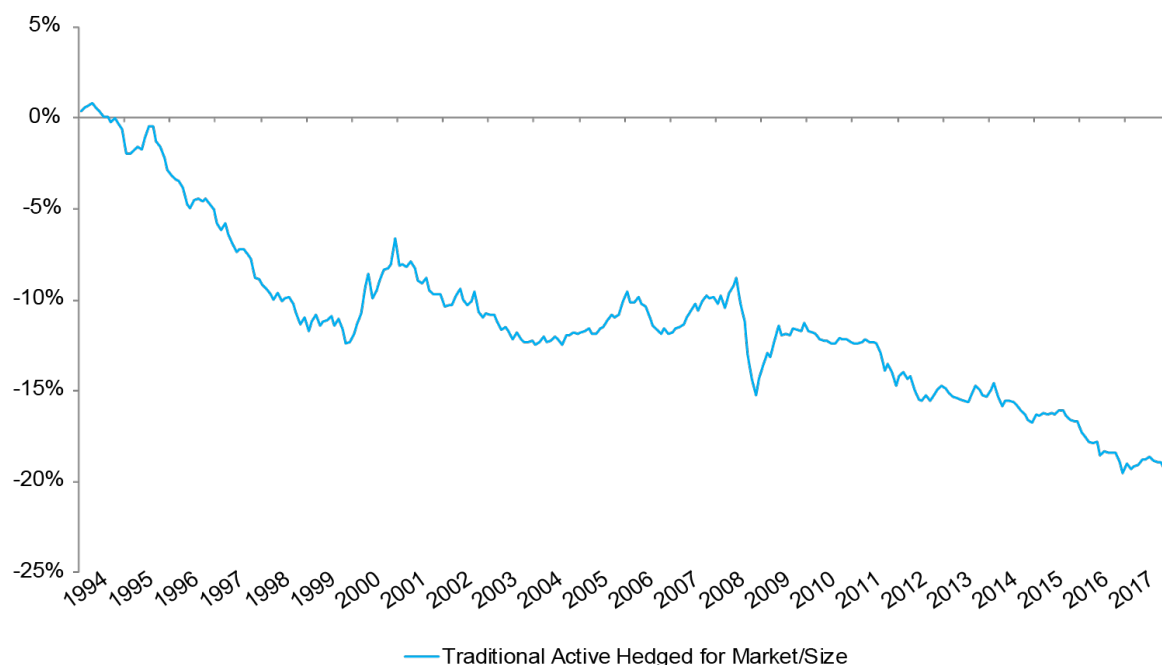
Traditional Long-only Stock Picking

Let's run the same two regressions but, this time, on the left-hand side put the returns to traditional active stock pickers:

$$\text{ACTIVE} = -0.9\% + 1.00 \times \text{MKT}, \quad R^2 = 98.7\% \\ (-2.42) \quad (147.33)$$

$$\text{ACTIVE} = -0.9\% + 0.99 \times \text{MKT} + 0.06 \times \text{SMB}, \quad R^2 = 98.9\% \\ (-2.68) \quad (155.31) \quad (7.45)$$

Focusing on the second regression we see, not surprisingly, that traditional stock pickers are, in fact, quite traditional in their beta (very, very close to 1.0). Also, not surprising they lean towards small stocks. But, unlike ELS funds, their intercept is negative over the full sample and statistically significantly so. A graph of their “hedged” or value-added net performance (after hedging their MKT and SMB exposure) is below:



Source: Active manager mutual fund returns are from Morningstar, returns for stock market (MKT), size (SMB), and risk free rate are from Ken French's website. Data from 1/1994 through 12/2017. See text and disclosures for additional important information. These are not the returns of an actual portfolio AQR managed and are for illustrative purposes only. Past performance is not a guarantee of future performance results.

Obviously, traditional active stock picking differs dramatically from hedge funds in cumulative full-period return (very negative for traditional active versus positive for hedge funds). But, it also differs in the time pattern of returns over time. Unlike hedge funds, traditional active funds are remarkably consistent in their approximately 1% per annum subtraction.²³ Traditional active funds do much worse than hedge funds over the full period but, unlike hedge funds, they don't deteriorate in the second half of the sample (they just continue to consistently underperform both the market and hedge funds but at their normal pace of underperformance).²⁴ So, what's going on?

The Hedgie in Winter²⁵

So, we have an index of "hedged hedge funds" and one of "hedged traditional active stock pickers." In both cases what should be left is their ex post skill (or factor exposures we haven't accounted for or luck) after removing both of their biases to be long and more long small than large. An obvious question is whether they are related? To even begin this exercise, you indeed need to start with the "hedged" version of ELS and ACTIVE returns. If, rather, you just look at their total return correlations they will be automatically quite high as both ELS and ACTIVE are net long the market all of the time. Thus, we're really asking how correlated they are after accounting for their market and small vs. large exposure.

Let's call ELS* the "hedged" ELS fund and ACTIVE* the "hedged" traditional stock pickers.

We can form these using just the regressions on the market (so, following the regressions above we'd hedge ELS by shorting 0.46 of the market, and hedge ACTIVE by shorting 1.00 of the market). The full period correlation of these two hedged series (the correlation of how much they beat their market betas by) is 0.50. If you hedge for both their market and small vs. large exposure, the correlation drops to 0.38, as part of why they're correlated is the common small vs. large bet. But that 0.38 is still strongly statistically significant. In fact, using (from now on) ELS* and ACTIVE* hedged for both the market and small vs. large, the regression of ELS* on ACTIVE* looks like this:

$$\text{ELS}^* = 3.8\% + 1.1 \times \text{ACTIVE}^*, \quad R^2 = 14.6\%$$

(4.47) (7.08)

They are strongly related but hedge funds' full-period intercept vs. ACTIVE is quite strong. Of course, we saw above that ACTIVE* looked very consistent (negative excess returns) over time while ELS* seems to be a very different beast in the second half or last third of the sample (when its positive excess returns completely flatten out). So, regressing ELS* on ACTIVE* again, but separately over the first and second half of our sample, leads to:

First half (1994-2005):

$$\text{ELS}^* = 6.0\% + 0.60 \times \text{ACTIVE}^*, \quad R^2 = 3.5\%$$

(4.50) (2.50)

Second half (2006 - 2017):

$$\text{ELS}^* = 1.6\% + 1.72 \times \text{ACTIVE}^*, \quad R^2 = 38.1\%$$

(1.71) (9.44)

The correlation (of which adjusted R^2 is approximately the square) is about 0.20 in the first half but over 0.60 in the second half.

Dividing our sample into thirds we get²⁶

First third (1994 –2001):

$$\text{ELS}^* = 7.2\% + 0.34 \times \text{ACTIVE}^*, \quad R^2 = 0.3\%$$

(3.89) (1.14)

Middle third (2002 –2009):

$$\text{ELS}^* = 3.0\% + 1.82 \times \text{ACTIVE}^*, \quad R^2 = 41.8\%$$

(2.34) (8.32)

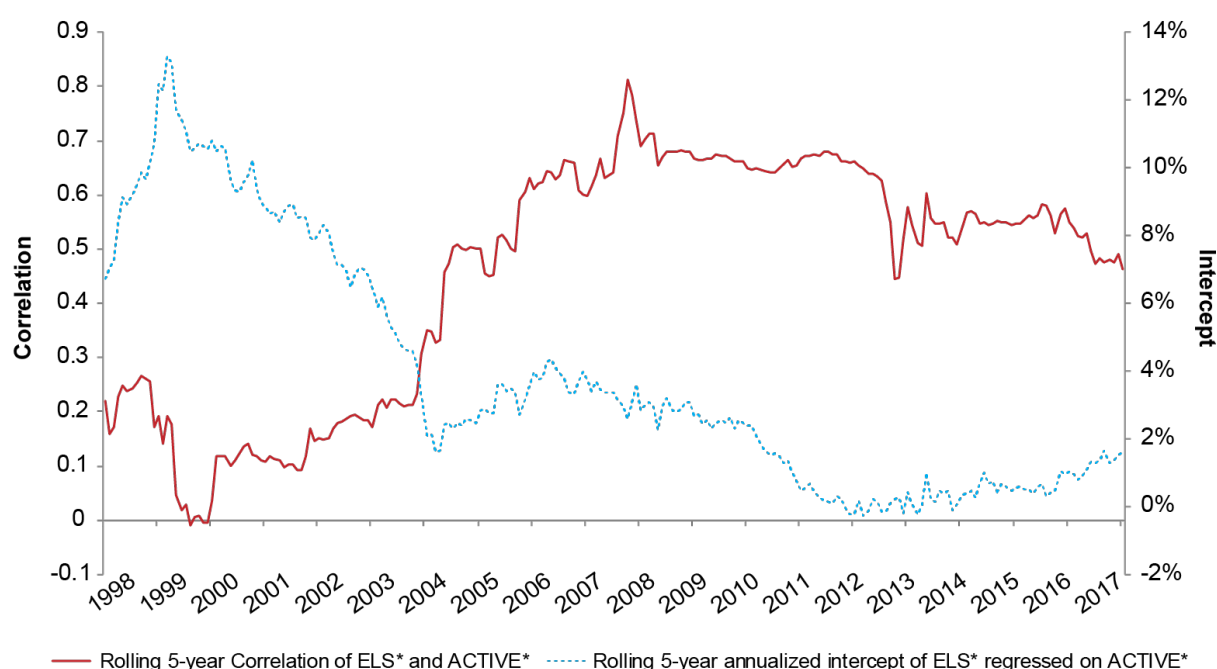
Final third (2010 –2017):

$$\text{ELS}^* = 0.9\% + 1.53 \times \text{ACTIVE}^*, \quad R^2 = 28.6\%$$

(0.99) (6.25)

Clearly the first half (and even more markedly the first third) of the sample was a different time — hedge funds had low (really very close to zero) correlation to active stock picking (in terms of their “hedged” or value-added return). Correlation goes way up and added value (the intercept to the above regressions) way down as we look into the second half or middle and latter third of the sample.^{27,28}

If instead of looking at halves and thirds we plot the rolling 5-year correlation of ELS* and ACTIVE* we get the following (we also include the rolling 5-year annualized intercept from regressing ELS* on ACTIVE*):



Source: AQR. Hedge fund long/short equity index return series are from Credit Suisse and Hedge Fund Research, returns for stock market(MKT), size (SMB), and risk free rate are from Ken French's website, bonds are 10-year U.S. Treasury returns from Datastream, and active manager mutual fund returns are from Morningstar. Data from 1/1994 through 12/2017. See text and disclosures for additional important information. These are not the returns of an actual portfolio AQR managed and are for illustrative purposes only. Past performance is not a guarantee of future performance results.

Perhaps there's some solace in these correlations coming down from their GFC peaks, but they are still, many years after the GFC, considerably higher than in the early (and most profitable) days of our sample. And, the intercept of regressing ELS* on ACTIVE* shows the opposite pattern. Hedge funds are far less value-added versus, and more correlated to, traditional active funds in the latter half of the sample.

Note that while the intercept for ELS* on ACTIVE* falls as time goes by, it remains positive (still 1.6% in the second half and 0.9% in the last third), albeit without statistical significance. This is in mild contrast to the value added for ELS viewed alone (not vs. traditional ACTIVE) which was essentially zero for the entire second half. That's because regressing ELS* vs. ACTIVE* is not a judgment about whether ELS actually adds value, but about whether it adds value *relative to its exposure to traditional active*. In this sense we're asking whether it's a better form of active management, not whether it's actually good on its own – a lower bar given the negative alpha of mutual funds in aggregate.

Considering the two lines at once, the clear increase in the correlation (after hedging the stock market and size factors) of hedge funds and traditional stock picking (the red line), coupled with the clear decrease over time in the value-add of hedge funds over traditional (the dotted blue line) tell quite a neat story about the hedge fund world becoming less different, and perhaps less special, versus the traditional stock picking world.

Conclusion

The reason to worry about hedge funds is decidedly and emphatically **not** that they've failed to keep up with 100% long stocks in a nine-year bull market. That was utterly predictable given a strong bull market. The legion of commentators effectively making this fallacious argument must now stop. I'm absolutely convinced that since I've finally explained it so clearly this time that they finally will cease.

But all is not well, and winter may indeed have come to hedge funds. The reason to worry is the evidence, from both their realized excess (vs. their positive beta) returns and, importantly, their correlations to traditional active stock picking, that hedge funds no longer are what they once were. There are no proofs above, just stories and supportive data. But I find the story that hedge funds as a whole are now much closer to regular old traditional active stock picking, and thus less special than before, quite plausible. Given traditional active stock picking is such a consistent long-term disappointment, this ain't good.^{2,30}

[1] For years I've quipped that hedge funds have a unique hypothesis to explain the common finding that active stock picking doesn't add value over and above fees. Implicit in their response is that they think the problem with traditional active management is that they just aren't charging enough!

[2] Some additional references to our older work on hedge funds are [here](#), [here](#) and [here](#).

[3] If you have a beta of 0.5 you actually want to compare your excess returns over cash to 0.5 of the market's excess return over cash — but that's not as elegant a sentence and with cash returns pretty close to zero for this period, it's a far less important adjustment than usual.

[4] These few cited articles deserve no special opprobrium as their sins are quite commonplace. Just the normal amount of opprobrium should be applied.

[5] It is fair **over the long-term** to make this comparison for individual hedge funds explicitly claiming, for instance, to deliver "equity like returns with bond like risk" (or to argue with those claiming this property for hedge funds as a whole). It, of course, is possible for hedge funds to have low betas but still have equity-like returns. That could arise as total returns are the sum of equity exposure times the equity risk premium plus "alpha." If hedge funds' beta is $\ll 1.0$ but they have sufficient positive alpha, it's possible that they could keep up with the S&P 500 over the long-term, but it's very unlikely over specific strong bullish periods (like, to pick a random example, 2009-2017). As we'll soon see in the first figure, hedge funds (despite low betas) were indeed keeping up with the S&P 500 from 1994 all the way through 2013, when the ongoing bull market in beta finally prevailed.

[6] In fact our nearly twenty year old critique of hedge funds essentially lambasted them for not being hedged enough, and we maintain this lambasting (which actually can cause a charley horse over this long a time). Had the world listened to us, and hedge funds hedged more, we think hedge funds would have been better and fairer (partly because they wouldn't be charging a performance fee for cheap easily available beta exposure) investments, but the comparison over the last nine years of bull market would look even worse for them (instead of merely being less exposed to equities in a bull market they'd have been unexposed). Of course, had they run historic betas close to zero, perhaps people would never have gravitated to this poor comparison?

[7] A separate issue that gets confused here is that some dismiss any asset with expected return less than all stocks as useless. For instance, [one](#) of the two unfairly singled out examples above says, "There simply is no rational basis for making the claim that hedge funds will deliver an expected return higher than equities." Maybe, maybe not, but if an asset is diversifying does it need to have as high an expected return as the most aggressive part of your portfolio? In a world where leverage is very expensive and/or scary and risk tolerances are quite high, this can be an interesting debate (if one wants higher return/risk but without the ability "or inclination" to lever, then risky unlevered assets like equities may be the preferred choice). If you want to make an argument that very long-term portfolios should be run at a beta of 1.0, or more accurately at much higher volatility, and thus diversification isn't so helpful, please do so (note I've already written [my retort](#)). For this piece, I'm going to assume that if an investment is believed to have significant "alpha" to the market and/or other known risk factors, then we all agree it can make your overall portfolio better.

[8] Aside from choosing this starting point I will ignore the issue of selection biases. It's a legitimate line of attack that hedge fund returns, particularly early in the sample, may still be inflated by this bias. Of course, hedge fund people will respond that the indices' returns aren't high enough as many of "the best funds" don't report (in truth many of the more famous ones are missing from the indices).

[9] For hedge fund returns I'm only going to look at equity long-short funds. They have been the biggest category for quite some time now, the one most consistently long stocks, and, arguably, the one most investors first think of when the topic of hedge funds arises. I average the long-short equity index reported by Credit Suisse and Hedge Fund Research. The returns for the long-short equity index are net of fees.

[10] The "market" I use is not the S&P 500 but the broader market portfolio from Ken French's website (it doesn't really matter). The returns I graph are additively cumulative monthly differences. For bonds, I use constant duration U.S. 10-year Treasury bond returns from Datastream.

[11] This realized beta, of course, moves around, both from randomness and, perhaps, real changes in the managers' targeted beta. Using a realized beta introduces a potential look-ahead bias. But, the realized betas are actually very stable so I'm not particularly concerned. If you split the sample in half the beta is 0.47 in the first half and 0.45 in the second half. If you split it in thirds it's 0.53, 0.40, and 0.48. I think we can say with some confidence that these funds have about 40-50% net exposure to stocks.

[12] Another way to say the same thing is the monthly correlation of the market with hedge funds minus the market is -0.84.

[13] Some will say it's damning to hedge funds that the red line ends up negative. Well, an easy retort is to ask if they loved hedge funds when the red line was positive (and thus beating the stock market since 1994) as it was for much of the sample? More subtly, this again fails to grasp the difference between value-added (alpha) and how much risk one should take.

[14] When bonds are negatively correlated to equities it will reduce the equity beta of 60/40 a bit more, but not much as bonds are a low volatility asset.

[15] Say your asset allocation is 50% equities and 50% other (assuming the other isn't related to equities), and you choose to allocate 10% of your portfolio to hedge funds with an expected beta of 0.5. If you want to keep your market exposure constant, you would change your allocation to 45% equities, 45% other and 10% hedge funds (i.e., funding the investment equally from both original sources). The 10% hedge funds would provide 5% of market exposure (assuming 0.5 beta), which would keep you at 50% equity exposure in the aggregate.

[16] Again, one can take issue with the indices I use (survivorship bias overstates them or, going the other way, that they leave out many of the best funds who don't report), but they're generally the same indices used by those making the overwrought attacks.

[17] In fact it's all starting to look quite [Berkean](#).

[18] If this were an academic paper in a classy journal I'd spend a lot of time finding multiple data sources and checking the robustness of my results across them. Thankfully, it's a blog so I picked the most plausible (to me) and readily available source for each series. I'd welcome somebody else doing all that other stuff!

[19] For equity long-short returns I use the average of the equity long-short subcomponents of the HFR and Credit Suisse indices. Returns are net of transaction costs and management fees.

[20] For active stock-picking mutual funds, I use the Morningstar mutual fund database. The return series is the AUM-weighted return of all U.S. equity funds (so, in principle, no survivorship bias). Returns are net of transaction costs and management fees.

[21] In addition to the market, I'm only going to adjust for the size factor here. It's empirically the most relevant, and it is quite intuitive that both hedge funds and traditional active managers tilt to small stocks. It's possible, but I think quite unlikely, that adding more factors might change some of my conclusions. Again I welcome someone picking up the ball here. I'll start you off as I have done a preliminary look; hedge funds seem to be long growth vs. value, good vs. bad momentum, and poor vs. good quality. But I haven't taken it much further than a few regressions. In general, whether we care about total returns or returns "adjusted" for factors (and which factors?) is a difficult question. For me, it comes down to whether those exposures were known ex ante and whether exposure to those factors was commercially available at low fees. I think the market and size exposures pass this test, which is why I adjust for them here. I'm less sure about the others.

[22] For those who don't believe their eyes, or just like an element of statistical significance to their visuals, regressing these "hedged hedge fund" returns on a dummy variable that's 1.0 in the second half of the sample gets you a t-statistic of -2.9 (and an average value-added return of almost exactly zero in the second half).

[23] In [other work](#) we find somewhat less negative returns to traditional active management. Among other things this other paper also adjusts for international exposure (which has hurt active managers in recent years). The jury is certainly still out on the right way to do this analysis, and I choose an intentionally simple one here.

[24] Regressing the "hedged active" fund on a dummy for the second half of our sample gets you a t-statistic of +0.2 (recall it was -2.9 for hedge funds).

[25] Put differently, when it comes to hedge fund beta it matters whether hedge funds rise and fall with the market or are independent of it (and extra points if you saw the tie-in to my section title coming before you clicked).

[26] It's particularly worthwhile to check on both division into halves and thirds separately as the GFC falls into the second half of the sample but the middle third. So, the fact that higher correlations of hedge fund and traditional active returns (and lower hedge returns) holds up for the second half (containing the GFC) and the last third (not containing the GFC) is a nice robustness check.

[27] Actually, the correlation between ELS* and ACTIVE* peaks in the middle third but is still quite high in the last third. I have no story for this minor (and statistically not shocking) change.

[28] By-the-way, if instead of using the full-period ELS* and ACTIVE* I run the hedging regressions (ELS on market and small minus large, and ACTIVE on the same factors) over the sub-periods also, giving their factor exposures a chance to vary, the correlation story is very very similar, but the return story is a bit better for ELS in the latter part of the sample (as those managers ex post correctly had slightly different small vs. large exposure). This difference is slight. Another thing that might potentially paint a more positive picture for ELS is that they seem to have gotten more international over time (if you regress on both USA and non-USA indices over different sub-periods). That's ex post been a bad move as the USA has outperformed. If that's not been a market call, but rather is just bad luck as the industry has globalized, regressing against just the USA indices for the full-period may be too harsh.

[29] The negative evidence is for U.S. mutual funds. However, for non-U.S. mutual funds and for institutional funds, the evidence is more positive, but might reflect reporting biases. For more details, again, please see [our latest](#).

[30] Again, I will make the ritual, but genuine, call for more study. This blog is just a first pass at the correlation issue.

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