



Cliff's Perspective

Liquid Alt Ragnarök?¹

September 7, 2018

Introduction

This is one of those notes. You know, one from an investment manager who has recently been doing crappy. I've written them before, but not for a while and so I am a bit out of practice. I must admit up front that they all sound kind of alike to me. Performance attribution sounds like an excuse; as if describing what's causing the pain is an attempt to avoid responsibility for it. There is often at least a dash of a tone of "we're losing because everyone else is an idiot." Optimism for the future often sounds forced and self-serving. I write this in full knowledge that some will react that same way to this note. I might, were I the one reading not writing it. That said, I do hope the below is different from the norm.

For instance, this note is less about specific recent events and more about tough times in general, the psychology that makes them so tough, and what to do during such times.² It's mostly not about specific performance attribution (we do that in lots of other places). It doesn't claim that you better hurry up and get in or stay invested now as a big rebound is coming any day. It does more basic (and hopefully more useful) things. It makes the case for including liquid alts from scratch, something we can all need reminding of during tough times. It argues that this case is still strong and unchanged by recent travails.³ It discusses at length the psychology that makes sticking with a good investment process through bad times so difficult, often using my own psychology as an example of how hard this can be (and, admittedly, a bit of a cathartic admission for me).⁴ I hope that this note provides useful discussion of some very important and very general issues in investing that also happens to

¹ For the poor benighted souls who didn't read the comics or see the movie (or studied actual mythology which is much harder) [Ragnarök](#) is basically the end of the world in Norse Mythology. Think "Apocalypse" with horned helmets. Also I'm using the jargon "liquid alt" in this piece as is common in some sectors of the market – but the discussion is really about lowly correlated alternative investments in general. Specifically, while this term may be one used globally in mutual funds in the US and UCITS funds in Europe, this discussion is broadly applicable to the investment strategies used by institutional investors, including Equity Market Neutral, Alternative Risk Premia, and Managed Futures/CTAs, to name a few.

² I write from the perspective of a quant and do address some of the specific difficulties of those strategies this year, but I really try to make most of this more generally about sticking with any good, but not perfect, investment process through its ups and downs.

³ This [piece](#) is a good review of many issues in value investing, including its poor multi-year run, including why the reason to invest in it going forward is not because you're trying to time some huge short-term rebound.

⁴ If anyone is annoyed that even in tough times I pepper this piece with some attempted humor, you'll likely be mollified by this section. I ain't having a good time either!

accurately convey my honest conviction that well-constructed, low-correlated liquid alternatives are an important part of a portfolio. Recent performance does not change this fact. But I'm conscious of what I'm up against, unless you readers are less cynical than I am!

There have been a [few recent articles](#) on quantitative strategies' tough 2018 and more generally on [liquid alts'](#) tough performance over a longer period. I expect more to come. You are probably expecting a blistering sarcastic rebuttal from me. That's understandable seeing as, let's face it, such fiery salvos have long been one of my go-to moves (most of these salvos having nothing to do with recent investment performance). Not this time. The articles I've seen so far are fair and are reporting reality.⁵ In particular, some classic "factors" like long-short systematic value investing in individual stocks and trend following are indeed suffering.⁶ This essay reviews the situation. Here's a preview: It's not Ragnarök — unless you think Ragnarök is expected to occur occasionally and that living through it occasionally is a necessary evil to achieve your long-term goals.⁷ Of course, you're free to question the wisdom of me starting this piece with an eschatological reference I immediately dismiss.

This is not a general defense of liquid alts as an investment category. "Liquid alt" only means those two words. They are (or should be) liquid investments (it's in the name) that have low correlation to traditional investments (low correlation is the "alt" part). Now, any of us could create a liquid alt. For instance, we could choose common stocks by flipping a coin with our teeth⁸ and go long/short each company based on whether it comes up heads or tails. It would indeed be liquid (assuming your universe is liquid stocks) and would indeed have low correlation to traditional markets. It would also be useless (harmful actually). So, while not trying to get into specific investment processes too much, my discussion and defense is much narrower than "anything that could be called a liquid alt." It's a defense of why you'd want a well-constructed liquid alt, and admittedly why I think ours are indeed well-constructed.

Here's how this discussion is going to go. I first review the basics: why you'd invest in liquid alts in the first place, and what you need to believe in to do so. In this section I briefly describe with a bit more detail what many (not all⁹) "quants" do in the liquid alt space, again not delving into specifics too deeply.¹⁰ Then I discuss, in a general sense, what kind of return to expect for the risk taken, an important context for any further discussion. This section may be the most original of this work. Then I move on to the important issue of what we do when tough times hit and, importantly, what we try very hard **not** to do. Next, I further discuss investor psychology during tough performance periods (including my own). Here's a preview of this section: a strategy you're absolutely

⁵ While it has some very good parts, I do have some quibbles with [this one](#). It carries out a good discussion of how to think about alternatives and, in particular, notes that one of the problems with them, as a category, is that they're nowhere near uncorrelated with traditional portfolios. With that observation, they're singing from our [hymn book](#). But in evaluating liquid alts, they look at a five-year strong bull market for traditional assets and a particularly weak period for liquid alts. If we did the same exercise after a five-year bad run for the markets would it mean liquid alts were the thing to do going forward? The article is wise enough to acknowledge this issue, but it's still a big problem. Also, the article is looking at liquid alts in general. More on this later, but I can't and don't defend a whole category. I explain and defend the goals of liquid alts, what they can do for a portfolio if well-constructed (low correlation and attractive risk-adjusted return). I do (obviously) believe there are some strategies that fulfill this goal (admittedly many of the ones I believe in look like ours). But that's not the same as recommending the whole category. In particular, if liquid alts are largely just porting over the liquid part of the hedge fund world then as a category they will perpetuate the sins of the hedge fund world (e.g., high correlation to traditional assets, as we pointed out many years [ago](#), and still very high fees for many) and not be as useful as they should be. So, I guess I actually like the article, just not the five-year comparison.

⁶ While we've, of course, already been reviewing specifics with clients, we'll likely also be writing separate reviews of some of the specifics as they do vary. Trend following is not particularly terrible this year but follows a long-term frustrating period. It will surprise nobody that we think periods like this are pretty normal. Long-short systematic value investing (only a subset of what we do in individual stocks) is quite bad this year. In fact, it has been doing quite poorly since a little after the GFC ended. What's different this year versus prior years is that until 2018 other systematic long-short factors more than made up for it (after all, we only really care about the net). Again, it will surprise nobody that long tough periods like this for single factors are common — they are also common for markets though that's hard to remember after such a bull run — and a short tough period for multiple factors combined is unpleasant but entirely normal. A very long very tough period for multiple factors combined would be more shocking, and thankfully **not** what we've seen.

⁷ You can't live through the real Ragnarök as nobody living through it is pretty much what Ragnarök means. And by "real" I mean pretend.

⁸ It is unnecessary that the coin be flipped with our teeth. It just adds to the imagery for me.

⁹ I can't even discuss "quant" in general. There are a multitude of quantitative strategies, only a subset even known to me. What I can discuss is the pain this year in some of the well-known factor strategies for going long and short individual stocks. I think that's highly relevant to much of the quantitative liquid alt and the long-only smart beta world (though I don't address this much). But, I don't want to imply it's close to exhaustive.

¹⁰ Again, we can, have, and will do deep dives into specific strategies, just not here.

convinced is uncorrelated with traditional markets and has attractive, but not astronomic, risk-adjusted returns is way harder to stick with during bad periods than many might imagine. Here's another preview: I personally experience all the psychological biases that many of our investors experience. While I highlight how I experience the psychological difficulties as much as anyone, I must stress up front that I don't let it affect how AQR runs the portfolios. I'm just admitting that I'm subject to all the same frustrations and short-term irrationalities as most others. It's my day job not to give in to these. Nearing the end I highlight, as a case study, one of our strategy families giving us serious trouble this year and driving much of recent difficulties. Penultimately, I conduct what amounts to a Frequently Asked Questions (FAQ) section of things I didn't already cover that we, uh, get asked frequently. Finally, I conclude (and repeat myself a bit more).

When things are lousy, my notes get longer. However, it's for what I hope is a good reason — because it's about much more than what's been happening in 2018. I hope the below has some relatively timeless commentary on the difficulty of investing well and how you can mitigate and benefit from that struggle.

Why Would You Want a Liquid Alt in the First Place (and how might you build one)?¹¹

Let's start with the wrong reason to pursue liquid alts. You do not want a liquid alt because you're bearish on stocks or, more generally, traditional assets. That kind of [timing](#) is difficult to do well. Plus, if you're convinced traditional assets are going to plummet, you want to be short, not "alternative." In other words, liquid alts are a "diversifier" not a "hedge." The better reasons for owning liquid alts are rather mundane in that they are the same reasons for owning any other part of your portfolio. You should invest because you believe that it has a positive expected return and provides diversification versus everything else you're doing. It's the same reason an all-stock investor can build a better portfolio by adding some bonds, and an all-bond investor can build a better portfolio by adding some stocks. For me, it's easiest to think about the case when the alternative in question has close to zero correlation to your existing portfolio, though that's not literally necessary.¹² If you can add an asset with a non-trivial positive expected return that's not correlated to the rest of your portfolio, you can achieve, for the same risk, a higher expected return, or for the same expected return, a lower risk (or improve both). Importantly, even if you can't lever, you can often increase overall expected return by reallocating among other assets. For instance, you can invest in the alternative, reducing the risk of the whole portfolio, while moving some assets from cash or bonds to stocks, which brings the risk back up but at a higher expected return.¹³

So how does one construct an uncorrelated investment? Well, there are a few ways. One can, of course, search for an investment that stand-alone isn't very correlated to stocks and bonds. For instance, adding commodities to your strategic portfolio is one well-known option. Another popular approach is to add illiquid assets such as private equity, real estate, or timber. We sometimes quibble with these, arguing that the inability to mark things to market, even if useful for managing your own psychology, exaggerates apparent diversification.¹⁴ Here, I restrict the conversation to "liquid alts," so whatever your view of illiquid privates, they're not the topic anyway.

In liquid alts, the main method of attempting to construct truly uncorrelated investments is by going long some assets and short different but related assets (in relatively equal amounts to hedge the market exposure) with a reason to believe that the longs on average will outperform the shorts. While there are other approaches, we think the main way you create a diversifying asset is to actually short something! Imagine there's a characteristic of firms (or markets, currencies, commodities, etc.) that is correlated with future investment performance. It may be one generally known to the world (like the tendency for low price-to-fundamental companies to outperform their

¹¹ When I started my career in fixed income 27 years ago I had a boss who was a bit flighty. Say we recently bought a bond that just had a bad day. He would, I assumed rhetorically, ask "why would we want to own this &#%! in the first place?" He never found my and a colleague's repeated response of "for principal and interest" even remotely amusing.

¹² Recall we believe the hedge fund world is [too correlated](#) to the long-only stock market. We do strive to make our alternatives close to zero correlated (of course that's a goal, not an every-time outcome). In some cases, we strive for "total return" (a conscious combination of uncorrelated alternatives and market exposure), but in those cases we charge an appropriate blended fee (the real criticism of hedge funds isn't that they are correlated, an investor can adjust for that in their portfolio, it's that they're implicitly charging very high fees for market exposure).

¹³ Though leveraging the whole, even a bit, is usually the more efficient course of action for those willing. Also, "less risk for the same expected return" doesn't get enough respect.

¹⁴ Of course, there may be true diversification in privates — just not nearly as much as it appears from the actual slow moving marks. We've noted for years that our type of liquid alts would become, ironically, more attractive to some if they were more difficult to mark-to-market!

opposites¹⁵) or unique and proprietary, or somewhere in between (e.g., proprietary attempts to improve well-known factors). Using that characteristic in a simplified approach, one can go long the companies attractive on the measure and short their opposites. If the resulting long-short portfolio is less than perfectly correlated to the rest of your portfolio it will likely be return-enhancing and diversifying. Basically, if the market was made of two groups of stocks, A and B, such that the total market was A+B, and you had a way to say “on average firms in A will beat firms in B” then adding some amount of long A and short B (i.e., A-B), as an independent position, to the market made of A+B, might be a very good idea.^{16,17}

The strategic case (let’s call this a 10-year horizon, though precision isn’t necessary here) for this kind of investing may actually be stronger now as we believe the expected long-term prospective return on stocks and bonds is lower from today’s high prices than in the past. Remember, we’re having this discussion after an amazing bull market for stocks (U.S. stocks in particular). Finding alternatives with low correlation to equity portfolios is particularly important, if it can be done with a positive expected return, as most portfolios are quite dominated by equities.¹⁸

Even modest amounts of truly diversifying investments matter. The math says the first small move towards “theoretically optimal” gets you more bang than the last small move (in theory you literally stop when adding more of the new asset gains you nothing extra). However, there is more to sizing these investments appropriately than what the math tells you (literally going to the “optimal” amount isn’t always long-term optimal). Even if the math says you should invest X%, if X% is too painful to stick with when they don’t work (and everything will have times they don’t work — hence the impetus for writing this piece!), then X% is too much. But that doesn’t make 0% the right answer either.¹⁹ Of course, the rub is, even if you’ve successfully created an uncorrelated investment with an attractive expected return, doing it this way has added unconventionality to your world. When it goes through its inevitable tough times, such unconventionality can make your world more difficult in many subtle ways (more on this soon, too).

What Kind of Risk-Adjusted Return Should You Expect?

The most popular measure of risk adjusted return is an investment’s Sharpe ratio, which is the ratio of its arithmetic average excess return over cash divided by its volatility.²⁰ However, it’s far from perfect. For instance, you get odd results if the investment is very, as most are to at least some degree, “non-normally” distributed. An extreme example might be selling out-of-the-money put options — a strategy that has many small positive returns and every once in a while a very large negative return. The realized volatility of this strategy is a very weird beast and realized Sharpe ratio is an inappropriate measure. Still, we think the Sharpe ratio is very often useful if care is taken not to apply it to highly non-normal processes. Like it or not, it is often the lingua franca of discussing strategies. I will use it here recognizing that it’s imperfect and rarely gives the final word.

¹⁵ Not calling this “value” here is a shout-out to [Tren Griffin](#). I will revert to standard “quant” terminology going forward where I’ll call any ratio of “price-to-something-fundamental” a systematic value factor.

¹⁶ Again, I’m oversimplifying. For instance, if A tends to beat B, but A tends to be “higher beta” than B, you might not want to add A-B, or at least test if this beta difference was the true driver of performance. These details matter. Also, there’s an open question whether to utilize the power of A-B that you need to invest in an alternative versus simply tilting your traditional portfolio more towards A. At AQR we do both versions with the strength of long-only tilting being its comfort level (no leverage, no short-selling) and the strength of A-B (liquid alts) being its efficient use of capital, higher level of impact on the portfolio (particularly when multiple low correlated factors are employed), and full exploitation of the short-side of factor investing (traditional portfolios can only not own something and thus not benefit from net short positions).

¹⁷ What I’m calling “A-B” corresponds to a liquid alt that attempts low correlation to the market at all times. Another kind simply tries to be uncorrelated on average for the long-term, but not at every point in time. An example of this type is trend following which is almost always not market-neutral at a particular point in time (it depends of course on which way the trends are going) but goes long and short with roughly similar frequency and is thus not very correlated to markets over longer horizons.

¹⁸ Note, this is not a tactical case and I’m not making short-term predictions. We are very stingy with strong timing predictions, making just a couple per career!

¹⁹ One of the great errors in investing is focusing not on the whole portfolio, but on each individual line item. When it comes to modest-sized investments, the question is not “would I bet my portfolio or career on this working?” but “would I put 5% of the portfolio in this investment to make a modest, but real, ex ante improvement?” We are highly confident in our process (as this piece discusses: the amazing amount of long-term evidence supporting it and the lack of evidence, despite looking hard, for a clear reason anything has changed today). But it’s vital to recognize that the bar to believe as we believe is not “would I bet the ranch on this?” but “would I diversify a bit into this?” We’re obviously not neutral on this, but we think this bar is cleared by a mile.

²⁰ I know this is review for many but it’s nice to put all this in one place.

The Sharpe ratio of the [U.S. stock market](#) from 1926 to mid-2018 is just over 0.40 (0.43 using monthly data). The Sharpe ratio of the global stock market from 1986 to mid-2018 is almost the same. That's pretty good. It's enough to make "stocks for the long-run" a very powerful argument, even if occasionally oversold. That's because if you stick with a 0.40ish Sharpe ratio for the long-term, it's very likely (though never certain) to work out for you.

Let's look at some statistics. Assuming you can create an investment process with a true 0.40 Sharpe ratio, and assuming a normal distribution (which is usually a better assumption the longer your horizon), your chance of positive returns (over cash) for any given day is 51%.²¹ For any month, it's 55%. For any six-month period, 61%. For any year, 66%. For five years, 81%. For ten years, 90%. That sounds pretty great, no? It is. But there's also a 10% chance that the investment strategy you created is as good as investing in the stock market and yet you fail to make a dime over cash for a decade. Still, the math would show, and basic common sense would agree, that finding an investment process you truly believe is as good as the stock market, yet not correlated to it, would be a pretty great thing.

Managers, particularly of alternatives, often strive for more than that. For instance, across many of our various offerings²² we usually are striving for at or above a 0.50 Sharpe ratio for some strategies and up to near a 1.00 for others.^{23,24} Some in the alternative and hedge fund world scoff at such numbers, preferring to start at claims of 2.00 and work their way up from there (in fact, I'll generically refer to super high risk-adjusted return strategies as "three Sharpe ratios" slightly, but not entirely, tongue-in-cheek). But, imagine you found an alternative that you truly believed was a true 0.40 (stock market level). Well, you've just found something **as good as** the much-heralded equity risk premium but **uncorrelated with it**. In that case you'd literally want to take as much risk in your new discovery as in stocks themselves. Now, few do this, and I'm not recommending it. For one thing, you must be able to stick with the strategy (more to come on this). When an "optimal" approach comes up with allocations you know you can't reach, I always recommend doing the amount you really believe you can stick with through a very bad period. But the point remains. We know that strategies with this level of risk-adjusted return can improve a portfolio. The trick is living with them.

We, and most of the investing world, are not usually claiming to have three Sharpe ratios, though for some they remain the holy grail.²⁵ Three Sharpe ratio uncorrelated investments may exist in reality, or appear to exist, for several reasons²⁶:

- Very small capacity proprietary strategies.
- Strategies with a temporal first-mover advantage that might have a very high risk-adjusted return, but only for a short period until the world catches on.
- Vol-selling strategies²⁷ that look very high Sharpe over benign sub-periods but that you know aren't.²⁸

²¹ The actual U.S. stock market since 1926 beats cash in about 54% of the days. That may sound like good news. Well partially it is, as recall the real market delivered a 0.43 not the 0.40 I'm now assuming. But there are other less wonderful reasons for the difference. Daily returns are not perfectly normally distributed but slightly negatively skewed with changing conditional volatility. Also the U.S. stock market has held up better at long horizons than this Sharpe ratio because of a small amount of negative long-term autocorrelation in returns. All of this makes this useful but less precise. But as we're not really discussing the U.S. stock market here but a generic 0.40ish Sharpe ratio investment process, it's ok.

²² Some of our offerings use more strategies than others or are targeted to specific markets or styles.

²³ Our Sharpe assumptions for individual factors and strategies are actually much more modest — but by diversifying across many of them, we believe we can achieve these higher goals long-term, the higher end achieved with more strategies.

²⁴ We believe in a core set of "factors", many well-known but implemented in proprietary ways, a few we think are still relatively secret, and most, if not all, that have long-term efficacy across and within many markets. We put them together differently for different investors with different goals, constraints, or other holdings that make some combinations better diversifiers for them than others. But they all share a common DNA (we're customizing for clients more than diversifying for ourselves) as this year, rather annoyingly, shows.

²⁵ Obviously, I'm picking "three" out of the air. Fill in whatever you think of as "really high."

²⁶ Of course, an obvious additional example is true scams before they're uncovered.

²⁷ Or any highly negatively skewed strategies.

²⁸ There's nothing wrong with vol-selling strategies per se, we're [fans of some](#), except when they're not clearly presented as such, sometimes looked at over only short periods when an unrealistically high realized Sharpe might be observed because nothing very bad happened over that time.

- Illiquid strategies that falsely appear very high Sharpe because estimates of their risk are vastly understated.
- A handful of firms seem to have truly found decent capacity sustainable very high Sharpe ratio investment processes.²⁹ I'm guessing that these look like a combination of many of our first category (very small unique...) and a series of new or evolving versions of our second category (temporal first mover strategies that don't last long). But even in the rare instances these appear to be real, they are still not high enough capacity to move the dial in a serious way for a significant number of major institutions (or broad swaths of individual investors).

In fact, we argue that "three Sharpe ratio strategies" are an overrated holy grail, at least for outside investors if not the managers themselves. Besides sometimes being very hard to differentiate from vol-selling, even true ones tend to be smaller capacity and more fleeting than other good but not so incredibly high Sharpe processes. They also, not surprisingly, tend to be much higher fee, thus ameliorating their net return advantage. Too many think that Sharpe ratio is the final arbiter of value-added rather than something closer to the total expected dollars you can add to client portfolios. And, in a final irony, even if they are medium-capacity and sustainable, the managers who find these strategies seem to soon kick out all the investors and keep all the three Sharpe goodness for themselves. So, we should all be careful what we wish for.

We'll never stop trying to improve the Sharpe ratio of all the things we do. If we ingeniously discover, or stumble across, a 3.0 Sharpe strategy we'll certainly be very happy. But in our view, the investing world over-lionizes the quest for super-high Sharpe; and, it greatly underappreciates the value of more modest, but still impressive risk-adjusted returns that are truly diversifying to the rest of your portfolio, and that are sustainable for long periods at large capacity. Combining all of that means real dollar returns to your institution or individual clients that can have a meaningful impact on their wealth. Now, of course, to make this relevant we must argue that these strategies really exist. But we think the evidence for some of them (in our humble opinion) is very strong, and I discuss it in the next section.³⁰ And, of course, we also must deal further with the big problem of sticking with them during the tough times that are part and parcel of good, but not ridiculously high, risk-adjusted returns. However, what shouldn't be arguable is that if you have really found a 0.50-1.00 Sharpe strategy with very low correlation to the rest of your portfolio, it's a wonderful thing.

So, What Do We Do When Tough Times Hit? (and they will hit)³¹

The whole impetus for this review is the tough year for many liquid alt investments, with my focus, of course, being on quant strategies like ours. So, what do you do in a bad year?

First, consider why you believed in this investment process to begin with.

This may sound trite, but your first line of defense is the evidence and intuition that convinced you to do these things in the first place. I'm bragging now (always dangerous during a tough time) but we think the evidence that factors like value, momentum, quality/low risk, carry, and trend work over the long-term is incredibly strong. The academic literature, to which we've significantly contributed, showing that these things have [efficacy, goes way beyond](#) choosing U.S. stocks where many of them were first discovered. That these same factors show success in non-U.S. stocks, equity index selection, sovereign bond market selection, commodities, currencies, credit, where to be on a yield curve, etc., is simply a gigantic set of evidence. Moreover, while obviously (given this note) tough periods occur, these results have held up [out-of-sample](#) since they were discovered.³²

I'm not going to leave it there. There is always a chance that the world has changed and that this time is truly different and what was once true is no longer so. But you must start with the amazingly powerful amount of

²⁹ "Where have you gone, Jim Simons, our nation turns its lonely eyes to you. Wu wu wu."

³⁰ Though I discuss it mainly by referencing the literature and not repeating the literature here (this piece is long enough). To really discuss the specific strategies, I'd recommend about two hundred other things we've written besides this note, some of which I link to in this piece (and you could even read one or two things by non-AQR authors :)).

³¹ I mean, besides whine and hit inanimate objects. Or is that just [me](#)?

³² Furthermore, as more data has become available, researchers have been able to test these factors further back in time than what the original work was able to do. The fact that these strategies have also held up in this setting is even more out-of-sample evidence.

evidence of a modest (not [hundreds of factors](#) in an orgy of [data mining](#)) set of economically intuitive strategies done in a ton of places over the long-term.

As a blunt example, in general we believe in choosing individual stocks with good value, good momentum (both price and fundamental), low risk, high quality (e.g., profitability, margins), and positive views from those we think are “informed investors.”³³ We like to under-weight or sell their opposites. When it doesn’t work, or even hurts a lot for a while, we don’t suddenly prefer expensive stocks with bad momentum, high risk, low quality, and negative views from informed investors. What I’m saying is, admittedly, our base case is to rely on the (in our humble opinion) overwhelming evidence we started with.

How we should, and do, worry that this time is different is important. But it’s also important to say upfront that your first defense is, of course, designing an investment process that you deeply believe in for hopefully rational evidence- and theory-based reasons.

What do the numbers tell us?

So, conviction in what you’ve built is great, but how do you even begin studying if “this time is different” and things shouldn’t be expected to work going forward? Step one is to ask purely statistical questions. Have recent returns been shocking or something we expect to see on occasion? Advanced warning, neither answer tells you precisely what to do.

It seems obvious that when you have strategies that have worked long-term, in historical simulations and in [real life](#), and that are experiencing a painful but not off-the-charts period, performance alone shouldn’t change your views on what to do going forward. If you believed in something before a bad 6-8 months³⁴, it’s frankly just odd to change your view because of the tough period. Yet it’s incredibly common and very difficult to combat.³⁵

Well, what if the strategy has been bad over longer horizons? This is **not** the case for the full multi-factor type of quantitative stock selection we’re discussing, but is true for some individual factors (like systematic value for stock selection and trend for markets). Even here the actual loss itself often tells you little. Take the value factor in individual stocks. Unlike for our overall individual stock process, it’s been a bad post-GFC (Global Financial Crisis) period for systematic value investing, particularly in the U.S. From the post-GFC peak for value at the end of April 2010, the Fama-French HML factor is down -1.7 standard deviations versus its full period mean (1926-present). If you temper the backtest, as we’ve long assumed to reflect the likelihood that the future may be bright but not as bright as backtested results, by say comparing recent returns to ½ the backtested historical average

³³ Of course, we measure these things in many ways and are always working on improving the specifics. Some of these ways are well-known, some more proprietary. Also, I don’t mean to imply these categories represent our full approach, or that they are all used for all portfolios (some of what we do is designed to give cleaner, simpler, “style exposures”).

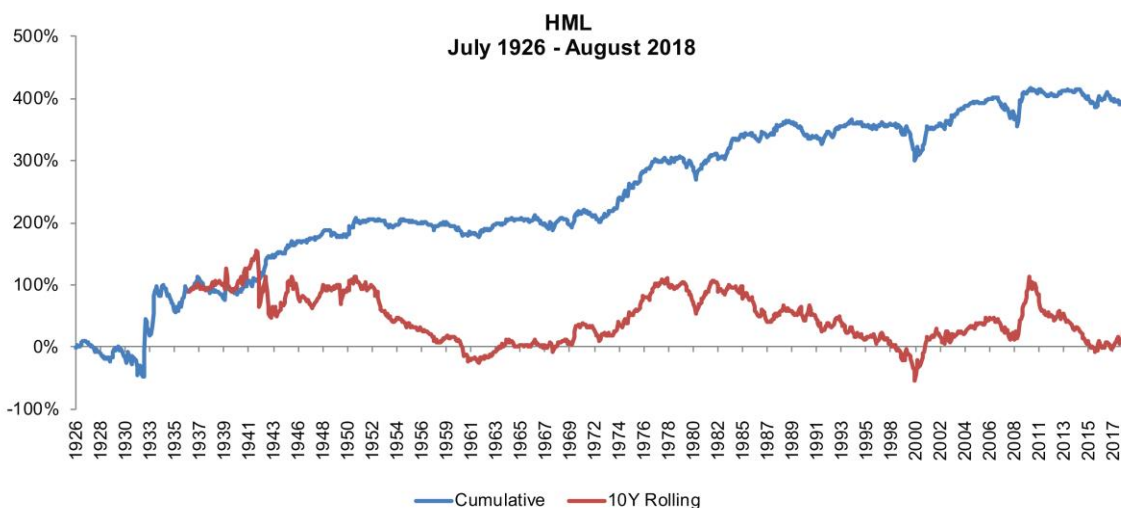
³⁴ That’s the time frame for the recent pain in our overall stock selection process (not very long at all). Single factors (value for stock selection, trend following) can and have been in pain longer (and some, like low-risk stock selection, have worked for quite a while now too).

³⁵ An interesting hypothetical that doesn’t apply now is what if you see something truly statistically rare? I mean say a -3 (or much more) standard deviation drop over a meaningful period. That’s clearly a much more trying situation and one more difficult to chart a course of action through. And, unfortunately, they happen in financial markets (and not just to liquid alts or quant!) more than “normal” returns would predict, particularly as evaluation horizons get shorter (many strategies and traditional markets get very non-normal at say the daily, weekly, or even monthly horizons). I’ll only spend a drop of time on this, as it’s currently not what we’re experiencing, but your first instinct might be that if it’s statistically truly shocking it means get out because the strategy must be “broken” (by-the-way, this would’ve gotten you out of traditional stocks after many historical “crash” events). This may be the right move and you should consider it. But it may also be simply an extreme market event that’s testing your ability to withstand pain (again, markets do that). Even in these extremes, performance/returns alone won’t be enough to convince you it’s broken. You need to look for other clues, like some other shock (regulatory, demand-based including the possibility of a bubble or irrational depression, a banking panic, etc.) to markets. Remember, we expect non-normality in returns. And if you do decide it’s “broken” versus the past, it should be from more than observing some big returns, you should have a hypothesis and evidence of how it’s broken. In fact, if not broken, such an extreme period may represent a better, not worse, opportunity going forward (think of any time near the peak of the tech bubble in early 2000 when value had trailing returns, not just for days but for many months, that were well worse than “normal” distributions would say reasonable). At times like those you must look at what’s going on and make a judgment, hopefully as quantitatively and as rationally as you can but not purely so, about what things look like going forward.

return, the post-GFC drawdown is a -1.2 standard deviation event.³⁶ Even for one factor on a much ballyhooed near decade long swoon, a statistician would not be particularly worried. A bit? Sure. Worth investigating further? Sure. But the event itself should change no minds.

To hammer this point home a bit more, see the cumulative return and rolling 10-year return graph below for the simple Fama-French HML factor (using the improvement from [Asness and Frazzini \(2013\)](#)) going back to 1926.³⁷ Would you sign up for that return (over the next 100 years) even with the poor performance over the past decade or the drawdowns it has experienced at other times in the past? I certainly would (as part of my portfolio, not all of it).

More to the point, I can conceive of changing my mind about this factor for other reasons. But its recent performance is decidedly not one of them.



Source: AQR. Returns are from a long high Book-to-Market, short low Book-to-Market factor using the adjusted definition (HML Devil) of Asness and Frazzini (2013), "The Devil in HML's Details." *Journal of Portfolio Management*. For illustrative purposes only.

So, barring long-term poor returns that wipe out the amazingly large multiple sources of evidence for the strategies we're discussing, something we thankfully don't even begin to approach today, realized recent returns just don't tell you very much. Luckily, returns and their standard deviations are not all we have to go on.

When should you change your mind?

The above doesn't mean you just dismiss anything less than a -10 standard deviation event as pure statistical fluctuation.³⁸ It just means those events alone are not particularly a cause for major concern. It's important to keep an open mind about whether "the world might've changed," rendering a strategy (or factor or investment process) that was a good idea for a long time seem like a bad one now.

At the risk of sounding cheeky, how "open a mind" to keep is a good and difficult question. Too open and one never sticks with any good strategy through its tough times. This is quite common where many of us who are suffering through any adverse period immediately start to give tremendous credence to all stories that, ex post,

³⁶ Even these numbers exaggerate the negative case. When you ex-post identify a very bad period for a factor and measure its statistical "shock" from that ex-post determined peak, you are bound to find big standard deviation events. In fact, we are currently working on getting a better handle on the distribution of "worst events looking back over ex post selected variable length periods" to get more perspective on tough times. It's less simple than it sounds.

³⁷ Please recall that we don't measure value as simply price-to-book.

³⁸ Of course, there really are no "-10 standard deviation events." There are, however, non-normal distributions.

explain why everything is different now. But not open enough isn't good either, as, obviously, one risks sticking with a strategy that truly no longer works. Admittedly this is art, not science. Although in our experience we believe we see minds that are [too open](#) way more frequently than not open enough. "It's different this time" are the most dangerous words in investing. However, that doesn't mean it is not, in fact, different this time. It just means you have to remember that the overwhelming majority of times it likely isn't "different this time" when [placing your bets](#).

Of course, keeping an open mind about whether a strategy still works means actually thinking about how a strategy might stop working (sorry if that seems obvious). Again, simply observing a bad period is not nearly enough as by definition that means you're throwing out good strategies after periods you know will occur on occasion. Trying to be specific in our hypotheses is something we've poured a ton of time into.

For instance, one obvious possibility is that these strategies used to work but now too many people do them. The problem with that argument in the current environment is the lack of evidence for it. And it's not for want of looking. We [pioneered](#) a common way of looking at this back in the 1999/2000 technology bubble (a time when value investing was questioned heavily but ultimately recovered). The gist of it is that you can measure how expensive a factor is (including the value factor itself) by comparing your value score for the securities the factor likes to the value score for those it dislikes. We call the formal measure the "value spread" of the factor. For the value factor itself, the value spread is always positive (otherwise your algorithm³⁹ is broken), but the magnitude of the spread can vary dramatically over time.

So, in the case where the world completely arbitrated away any factor, we would likely see the value spreads of these factors get way worse than historical experience.⁴⁰ Well, we are not generally seeing this and certainly not for the value factor.⁴¹ Spreads are mostly uneventful and within the range of historical experience.⁴² Furthermore, and again particularly for value strategies, what we've seen is simply not the strategies being "arbitrated away." Had this happened for value over the last 5 to 10 years we'd expect to see better than average returns over this period followed by a desultory (if not doomed depending on how far it went) future.⁴³ This is decidedly inconsistent with what we have observed. If value had been arbitrated away, where were the windfall profits?!

Frankly, we do not dismiss that future long-term, risk-adjusted returns to these strategies might be lower than history. Even without poor value spreads, simply being more known and popular seems to call for some circumspection. However, we believe there's a lot of room for future returns to be good, but not as good as a backtest, and still find a significant allocation to these strategies attractive.

Another possibility related to being more known and popular is that too much money is indeed chasing these factors, but the value spreads we examine don't pick it up as the impact of inflows on price is transient, not permanent. In this case, we might see normal value spreads but the transactions costs of trading these factors could be higher as too many managers try to do the same trade too often, thus eating into returns from a different

³⁹ I had originally written "spreadsheet" not "algorithm" but my colleagues said it made me sound ancient.

⁴⁰ Here, worse would mean the longs are much less cheap than usual versus the shorts.

⁴¹ One exception [detailed here](#) is the low risk/beta factor where it does look expensive versus history. Though, it's still not outside of historical experience. And, historically, trading on this information at similar times would've gained nothing. Also, ironically, that factor has been doing well through a few years of looking expensive. It seems like [factor timing is hard](#).

⁴² We have [looked hard](#), and within this range we find very little added value from tactically predicting factor returns.

⁴³ I've had a [debate](#) with Rob Arnott about his view of the effect of factor richening (factors producing good returns when they get more expensive). This debate may add some useful context. [Rob claims](#) that factor "richening" (the value spread of factors I describe above getting less attractive as what's long gets more expensive versus what's short) was responsible for many well-known factors' very long-term success (like for 50 years). I think he greatly overstates this effect. The relationship between factor richening and factor returns is much less than 1:1 and his main line of argument basically assumes it is 1:1. But while we disagree on magnitude, he did not get the sign wrong! We may disagree at times, but he's good at this and wouldn't make that mistake (which many others implicitly make when they worry value has been arbitrated away). Factor richening, particularly over the short horizon when other things cannot mitigate it and its impact can be concentrated, does on average lead to better than normal, not worse than normal, returns over the richening period. This is, again, not at all what we've seen for the value factor.

direction. The problem with this theory is once again the complete lack of evidence to support it. We track costs [extremely closely](#) and nothing abnormal is occurring. Value stocks have not underperformed their counterparts because they have become more expensive to trade.⁴⁴

Yet another possibility is that we're all just measuring value (or any other factor) wrong. In particular, people worry that old methods of measuring value don't apply to the modern world. If true, this means value still works, but we might need to change how we measure it (with the extreme being some old ways are now irrelevant or even backwards). We don't dismiss this, but don't think it is the major issue. We measure value in a large variety of ways⁴⁵, some well-known, some proprietary. Also, we take our value risk generally [intra-industry](#), meaning we don't use it to make big sector or industry bets but more for relative bets within industries. This way, many critiques of specific value measures should be, at least, mitigated.⁴⁶

What tends to generate the most criticism is using price-to-book (or, if you're academically inclined, book-to-price). Some [criticize it](#) for the long-term. Some have more [topical critiques](#). Others [defend it](#).⁴⁷ Finally, some get [quite subtle](#), analyzing when it makes more or less sense versus other valuation measures. Frankly, book-to-price gets outsized attention because it's the canonical value measure used in many academic studies (following the path breaking work of [Fama and French](#)), and related, is used in constructing some of the most followed [value indices](#). Still, it's always been a minority shareholder in our composite of value factors, and while it may have been hurt more than other value measures in the last few years⁴⁸, value investing measured in most ways has suffered. We simply don't think the problem is related to any specific approach to measuring value.

Simply put, we believe value wins on average over the long-term but not all the time, even for a near decade. Poor periods in the past have never meant that the factor shouldn't work going forward. The logic, historical track record, etc., all are intact, and no story for now being different seems to hold water (no weird value spreads, no super-high transactions costs, it's not all driven by outdated value measures). So, while it's been hell to go through for a value investor, we're going [Winston Churchill](#) on this one.⁴⁹

In sum, as trite as it sounds, at times like this, your first defense is having a process you have deep belief in — hopefully for both economically intuitive and evidentiary reasons. After this first defense, you keep an open mind. Even hundreds of years of evidence can cease to apply if giant permanent changes to markets and investing practices truly occur. However, you need to be clear about how you think the world has changed and evaluate the impact that change would have on your strategy. It's not productive to just generically worry things are different now. We have looked hard and just haven't come up with anything that supports the idea of a significant structural break in relative valuation or how we measure it (especially when comparing companies within the same industry).

To answer the section title, one should change their mind based on evidence, big enough numbers to change the long-term historical evidence, or a theory going forward that is supported by observation. None of these seem to

⁴⁴ Less important as it gets less weight in our processes, stocks favored by investors we measure as “informed” have also underperformed because they've underperformed (not because they're gotten super expensive to trade). Yes I know that's the lack of an explanation not the presence of one!

⁴⁵ We [generally find](#) more robust results using this approach and, while not this year, we believe it has really helped longer-term versus simpler approaches.

⁴⁶ For instance, if book value for technology companies means something different today, but not materially so for most other companies, then intra-industry comparisons would mitigate, not eliminate, any issue.

⁴⁷ As an aside, many assume that if a factor is “broken”, meaning it doesn't measure what it used to, that you just lose gobs of money automatically. Not true. A “broken” measure would be far more likely to deliver random returns than systematic losses. Now random isn't good, but it's not what many commonly assume.

⁴⁸ Though actually it has held up a bit better than other measures this year.

⁴⁹ If he really said that, which seems [dodgy](#). Though if he didn't, he should have.

apply today. Frankly it's not particularly close. We'll keep looking.⁵⁰ If the world has changed, we want to know it. As the old saying goes, keep an open mind, but not so open that your brains fall out.

Let's Review the Psychology (or, why are these strategies so difficult to live with?)

So, these strategies have tremendous long-term evidence, are economically intuitive, and after trying hard, while keeping an open mind, we can't find anything beyond just the kind of painful year⁵¹ we expect to see on occasion. The obvious thing to do is stick to your process, right? Of course, to nobody's shock, we absolutely agree with that. This section contains some thoughts on why it's so damn hard to do.

First let me admit that I'm not just lecturing. I don't find it psychologically easy at all, quite the opposite. That's embarrassing considering I'm supposed to be one of the experts on these ups and downs. I spend a lot of time, like in this note, encouraging people to be "long-term" while trying to put in perspective how we expect the short-term to be ugly on occasion. I mean, this is my job! Nevertheless, I have, on occasion, [shown the stress](#) of tough times in ways I'd like to forget (or, more important, have everyone else forget).⁵² I hope this personal weakness is a sign of caring, passion, and human frailty, not hypocrisy. After all, I've never claimed that understanding behavioral biases makes them easy to overcome.

In fact, while I'm embarrassed by the fact that I can't rid myself of these, I'm proud of the fact that it does not affect how we run the portfolios. I hope not succumbing to one's own demons while doing the right thing isn't too shabby. Furthermore, I console myself that if I can't rid myself of these difficulties after all these years of managing and studying these strategies, then many others likely can't also. Remember, if these strategies were easy to live with, they'd likely be far more susceptible to being arbitrated away. OK, enough about me.⁵³

So why is it so hard? Well, first and foremost, there's [loss aversion](#), the well-known idea that losses simply hurt more than gains feel good.⁵⁴ This hardly explains it all as it doesn't distinguish between losing conventionally in traditional markets versus losing unconventionally in a liquid alt. However, it's a start for thinking about why these periods are so pressure-packed. Losses aren't fun, and beyond that obvious statement, they are more painful than a more classical "symmetric" theory would suggest.

⁵⁰ We're well aware that we're also up against the problem of "[confirmation bias](#)" which is particularly applicable when one's own [interest](#) is at stake. People prefer evidence that supports their prior beliefs versus that which questions it. We strive to fight this by, among other things, leaning quite hard towards vigorously pursuing all lines of inquiry, even ones we sometimes think ex ante are a little "odd." I know there are some at AQR who likely roll their eyes, respectfully of course, at some of my "can you check if this is what's happening?" emails! Furthermore, we are actually idealistic enough to believe our long-term interest is in discovering the truth, not defending a position. Still, one can view the battle between keeping your mind open but not "so open your brains fall out" as another way to describe the battle against confirmation bias without going too far the other way (we actually do think there's a, perhaps unnamed, bias to change your mind way too quickly when in pain).

⁵¹ Or longer for single factors like value or trend.

⁵² One way I can tell I'm over-stressing is when the sign of a fund's return intra-day flips from a small (say +5 basis points) positive to a small (say -5 basis points) negative. That is a trivial change that is statistically just noise. In good times I know that and am unaffected. In much harder times a stupid -10 basis point down move, and a switch from a green to a red number on the screen, is like a punch in the gut!

⁵³ Recently, as we've been suffering through this drawdown, I have found myself reading about the emotional and physical [hell Elon Musk](#) seems to be going through, and have found myself jealous in a very specific way. Yeah, I know that sounds odd. He's sleeping at his factory and working what rounds to 24/7 and is quite honest that it's ridiculously painful to him. In contrast, my main job is to do as little as possible. OK, I do some things. Every day I try to think about every way we might be wrong. I communicate to concerned clients (and write this blog). I manage a dedicated, brilliant team of open-eyed believers in what we do, who are also understandably stressed out. But what I must keep myself from doing or allowing is messing with the process in absence of discovering any evidence that it's called for. That's really hard because of the tremendous "bias to do something." We all have it. I have this bias about our process; you, as investors, have this bias about making the painful "stop or double down" decision many often obsess over during stress. Frankly, having a problem where more of the job was actually fixing it (you can't fix a statistical draw) strikes me as psychologically easier. I'm sure Musk would disagree. The grass is always greener.

⁵⁴ Though even this is not [without challenge](#).

It's one thing to look at 50 to 100 years of history and dispassionately observe all the short, and even medium-term, ups and downs as the strategy slowly drifts upward over the long run. The history shows a decent number of "negative two standard deviation six-month events versus the long-term positive mean" and worse. Looking at the data, it's easy to shrug your shoulders and say well that's part of the statistical properties of this strategy. At this stage it's easy to be rational (or imagine you will be so).

However, it's an entirely different thing to live it real time. In real life we experience all the months, weeks, days and sometimes hours and minutes that add up to a bad period. Another bad day during a drawdown can feel like proof something is fundamentally wrong, even if you know the odds on any given day are only a hair over 50% in your favor. If you're running multi-factor strategies, a tough period on the whole usually requires many difficulties in many places (or big difficulties in a few without offsetting positives). No matter how much you know better, you still ask yourself and others how can that happen?! We, perhaps suffering from physics envy, call this feeling time dilation. Time slows down in a drawdown. It seems like you've lost money every day forever (you haven't — I'm often surprised after bad periods to see that we actually didn't lose an extremely large fraction of the days, it only felt that way). You start being amazed how you lose in up and down markets of all variety (of course, that's part of the point of creating a diversifying investment process). None of this is truly surprising. It's what drawdowns are like. But living through it makes you look at the process you believe in, and the parts that make it up, and feel like Casey Stengel did when he said "[Can't anybody here play this game?](#)" When bad follows bad it can seem like incontrovertible proof that things are broken. You remember two months ago hearing about bad returns, and then when it continues, it feels like out of sample proof that you stink (or your managers stinks). Living it every day makes it seem like far more evidence than it really amounts to. If the long-term evidence is still intact, and you have no real compelling story for why the future will be different, these periods don't prove much at all.

It. Just. Feels. That. Way.

The realistic goal for any of us is not to eliminate the pull of irrationality. That's usually impossible.⁵⁵ The goal is to set yourself up to weather your own biases and profit from those of others. This is accomplished by measuring how much risk you take, thoroughly understanding what you've invested in, understanding the investment's long-term evidence and understanding how it may behave in the short-term.

The goal is not unrealistic sang froid, or God forbid apathy, but resilience.⁵⁶

Embrace the Suck

Successful scalable systematic investment strategies usually make money because of one of two things: (1) they compensate investors for bearing risk, or (2) they take advantage of some behavioral bias, basically other investors' errors. Here, my discussion focuses on behavioral biases though all that's necessary is that we take the other side versus some fraction of the investor population that favors the opposite because of risk reasons, biases, tastes, or simple constraints.

Now, evidence of persistent behavioral biases does not prove that market prices are influenced by them enough for you to profit (too many casually show some way "people are irrational" and think it automatically results in arbitrage opportunities). After all, rational investors (like all of us writing or reading this note) might just arbitrage

⁵⁵ I have to say "usually" because one of my co-founders, John Liew, puts me to shame here. I truly think the short-term, no matter how extreme, does not faze him. When I'm, well, "fazed", he asks questions like "Cliff, you believe in these for the long-term going forward, right? Why do you care what path we take to get there?" I have no answer but a somewhat ashamed "you're right, John." We carry on versions of this same conversation more than you'd imagine.

⁵⁶ A great quote I saw [here](#) goes "There are two pains in life: there's the pain of discipline, and then there's the pain of regret. You choose which one." I would add that the pain of discipline at least comes with the reward of better long-term results and giving in to regret minimization likely does the opposite. I'd also add that it's a false choice as I've obviously personally chosen both the pain of investing discipline and personal regret! By-the-way, the quote was not from a financial economist or Winston Churchill, but from a power lifter. Different tasks, often the same problems.

them back to zero.⁵⁷ It's possible that we all indeed have many systematic behavioral biases, but prices still don't, on net, reflect them.

But that runs right into several of the things we've been discussing. First, of course, is the enormous body of literature showing these biases do indeed get into prices. We always start with that! But why don't they get more arbitrated away? Well, we think a lot of the answer is in the very psychology we're discussing. Strategies that deliver real-life reasonable risk-adjusted returns can be incredibly difficult to stick with long-term. So, it's a paradox. They perhaps exist precisely because they are hard to stick with.⁵⁸ [Here's](#) a nice, and amusing, take on how hard it can be to stick with even very good strategies in practice, or build a business around them. Also, this is far from only about quant. Living through the tough times and staying disciplined to what you rationally believe in seems to be the secret ingredient in the success of [many historically great investors](#).

Which brings me to the title of this section. There is a crass but evocative term I borrow from the military for this phenomenon. It's called "[Embrace the Suck](#)".⁵⁹ Wiktionary defines it as "To consciously accept or appreciate something that is extremely unpleasant but unavoidable." Unstated, but implicit, is that you don't do this because you really want to, or as proof of your toughness, but because it's necessary to achieve your goals.⁶⁰ You don't do this because you enjoy the suck. You do it because, over the long-term, it's the only way to add value, and it likely exists precisely because many others can't tolerate it.

Losing unconventionally is hard

It's harder to suffer tough periods when there are no easy explanations. The irony is that precisely what we strive to create in liquid alts is long-term positive returns but a very low correlation to other investments, and in fact to any single or handful of themes/bets, particularly of the easily explainable macro variety, outside the ones we explicitly target. Yet, if we successfully create that (and nobody can do it perfectly), then when the tough times hit they will seem to appear out of nowhere. This can add to frustration. No explanation. Nothing simple for which to root. No great insanity that's causing all your pain that you just know must reverse if you can only hold on. All you get to do is root for the process to go back to delivering what it has delivered historically.

Having no simple story, beyond the trivial "these factors are down X standard deviations," for losses is, in some sense, our goal and one we think we [mostly achieve](#). The more independent the source of returns the better. But it makes explaining and living through tough times much harder. People want something to root for other than "the process." And, sometimes, you indeed do have easy explanations (e.g., the 1999/2000 tech bubble, convertible arbitrage deleveraging in the GFC).⁶¹ But when it's working right, in good times and bad, as it does most of the time, it defies easy one-liners and single headlines for which to root. Again, that's what you want in a liquid alt, but we must acknowledge the additional difficulty this quality brings. If you have created something that theoretically wins 2/3 of the time, but is unconventional, then 1/3 of the time you will find yourself trying to explain why you hurt the portfolio in this seemingly self-inflicted way. Of course, we all know that if you do create something that wins 2/3 of the time, independent of everything else, you really want to own that asset!

⁵⁷ Getting [really geeky](#), even the existence of rational arbitrageurs wouldn't take them quite all the way to zero. But I think it's fine to think of it that way for this discussion.

⁵⁸ It's often that I get asked in a public forum two separate questions. One, "how come everyone doesn't do this and make it go away?" Two, "how on Earth do I stick with this, and explain it to those I have to explain it to, when it suffers?" When they line up perfectly I point it out and ask them to work it out between themselves :).

⁵⁹ And have used [before](#). Sorry for repeating myself, but it's just so apt.

⁶⁰ Another great version of this concept is by Corey Hoffstein who sums it up succinctly and accurately as "[No pain, No Premium](#)." Also, the folks at Alpha Architect have some other [good stuff](#) on how hard this can be, and how true value-add over time in fact flows from discipline.

⁶¹ Easy explanations do not mean living through it was easy. When there were easy explanations, we tried hard to evaluate the facts on the ground (keeping an open mind!). [Bubble Logic](#) was my attempt to do so back during 1999/2000. I think it holds up ok.

Going the other way, losing in more conventional form, as [Keynes](#) warned us about, is easier. We know this first hand because we manage both long-only and long-short versions of these strategies. In our long-only portfolios we use the same set of strategies to try to add value to a conventional benchmark (like the S&P 500 or MSCI EAFE) by overweighting those securities we like and underweighting those we don't relative to their weights in the benchmark portfolio. We call these active or enhanced portfolios.⁶² In the current market, where the strategies are suffering but stock markets are up, an active stock portfolio of this type would likely be trailing its benchmark. But it would also quite likely still be up as U.S. stocks continue their bull run.⁶³

In contrast, in a long-short or liquid alt portfolio, in this environment, you would actually be losing money — the market doesn't help you. Of course, when you win it's generally regardless of market direction too, and this is, of course, the actual point. Furthermore, if the long-short portfolio takes any decent amount of risk^{64,65} those losses might be significant (as the gains may be in good times). Many long-only implementations can suffer from the opposite problem — not taking enough risk to really matter (benchmark hugging). Even though precisely the same economics are driving the long-only relative underperformance and the long-short absolute underperformance, many investors just find the traditional long-only much easier to live with (and to justify to others).

We're happy to manage both kinds of portfolios and we believe there's still value to add in the traditional approach (and some investors can only invest conventionally). However, we never shy away from the fact that we do think that the long-short liquid alt format is generally the superior one because, assuming it takes enough risk, it is a more efficient use of capital, because it fully exploits the short side of factors, and, in some cases, because it can diversify across many more strategies. Once again, we're faced with a solution we think is long-term better, but much harder to live with. Embrace the suck!

In sum, doing something long-term right, but **different**, at a size that matters, that you can stick with, is the entire point. But that **different** part can be excruciating. In fact, it may be close to a tautology that doing something diversifying is unconventional.

You're up against a lot of stories for why you're wrong

To my knowledge nobody has ever said "we're getting out now as we can't take a -2 standard deviation event." Why? Because we'd all feel stupid saying that! So instead, in tough times people come up with stories, sometimes plausible ones even if not true, sometimes nutty ones, for why something that has worked for 100 years, in a robust set of out-of-sample tests, with great economic logic, no longer does anymore. Oddly, you don't hear these too often when a strategy has been doing well (in a perfectly rational world such examinations would be symmetric). Ironically, even very smart and knowledgeable managers and investors are not immune from this

⁶² Simple versions of them have come to be called "Smart Beta" a term [I fought and lost](#) to.

⁶³ Furthermore, it would be doing so without using any less-conventional techniques like shorting or leverage which also come under more scrutiny when a strategy is not working.

⁶⁴ A liquid alt, even if truly uncorrelated, that's run at very low risk versus the fees charged is the alternative world's version of "benchmark hugging."

⁶⁵ You usually, in theory, want them to take more risk for a given fee. More risk makes the investment cheaper from a fee perspective and a more efficient use of capital. Of course, you must do that consciously adjusting your allocation for the risk level. Plus, many of the "psychological issues" with sticking with a process can be harder at higher levels of risk. They shouldn't be. If you do this consciously you know the good and bad times will both be bigger. But they still are harder. When we first launched AQR, we did it with one market-neutral fund that targeted more risk than stand-alone equities (though targeting low correlation of course). I remember many potential clients asked me if we'd run it much less aggressively for them. I remember, probably smugly, telling them that we don't need to do that for them. They should just give us less money! I wasn't wrong on the math. Half the allocation cuts the actual dollar risk in half (and fairly adjusts the fee down by half). But I missed much of the point as down two standard deviations at north of 20% volatility is, in the real world, a different experience than at 5% volatility (even if the same to the statistician). So, targeting high risk is certainly not for everyone. If there's any clear takeaway from this, it's just that fees and risk should be matched well.

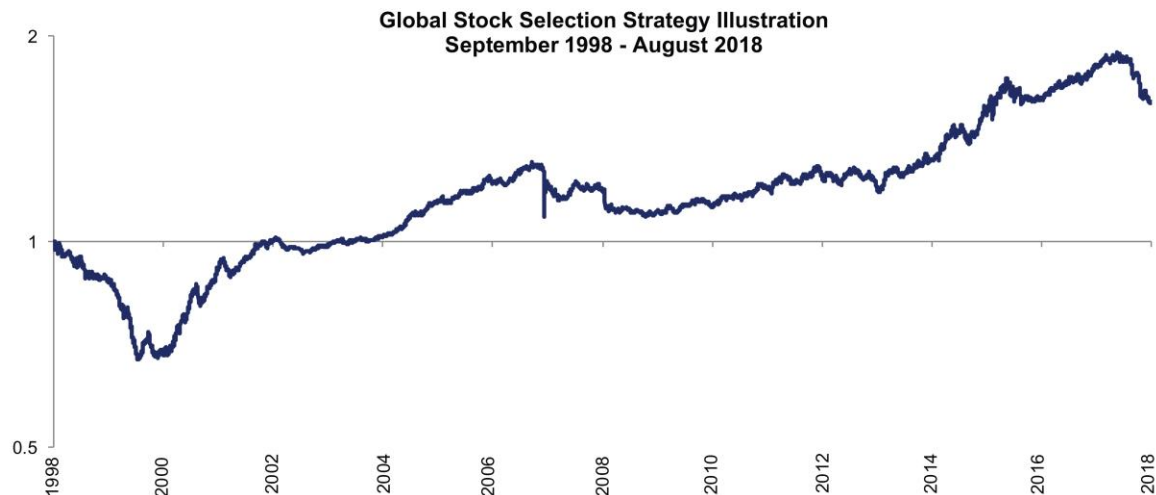
(I hope I fit this category). In fact, being smart often means being better and more creative at coming up with stories for why now is different.⁶⁶

What does this bias all add up to? We all know the drill. We all read about phenomena like the average fund investor grossly underperforming the average fund due to mistimed flows (getting in after good times, out after bad times) and we shake our heads at others' folly, not realizing that [Pogo](#) may be running our portfolios.

The bottom line of this whole section is that sticking with a successful investing process for the long-term is just way harder than it should be. That's actually a good thing as it's probably why there's a sustainable long-term payoff if you can do it. But just noting that doesn't make it easy!

A Case Study: Global Stock Selection (and a bit on trend following)

To further flesh out these ideas, let's look at a specific real-life example. It's our longest live track record for the market-neutral equity strategies that are the major source of pain this year. This strategy is part of a broader portfolio that also takes substantial risk in macro strategies. (So, the scale doesn't make a lot of sense as it's a gross contribution not a total return (and it's a log scale). But it's useful to see what running this strategy has felt like and to put the recent drop into some perspective:



Source: AQR. The GSS Strategy example is a carveout derived from the Global Stock Selection strategy's attribution to the overall portfolio, excess of cash, scaled to an 8% annual volatility target. This hypothetical performance does not represent the return to an actual fund or trading account that an investor could directly participate in and does not reflect the deduction of any fees or expenses, which would reduce an investor's actual return. For illustrative purposes only. Hypothetical data has inherent limitations, some of which are described in the disclosures. See additional disclosures at the end of this article. Past performance is not a guarantee of future performance.

This recent swoon isn't small compared to history. But it ain't huge either. It stinks to live through and all the psychological factors discussed above come into play. But we've seen it before, some not as bad, some much worse. They are present in the above figure. Some examples are the 1999-2000 tech bubble⁶⁷ and the "quant quake" in August 2007.⁶⁸ The first was a far bigger drop than we've seen recently and over 18 long months, the second a super sharp short-term drop that reversed quickly. We also saw a long stretch after the financial crisis of

⁶⁶ This is not a net argument against being smart. It has other advantages.

⁶⁷ The starting point of the chart sticks in my craw. I could argue that starting the chart in 1998 when AQR began understates the case as it starts and ends with a bad period, not random points. We started AQR right before a horrible period for quantitative stock selection but after a number of good years at our former employer that don't make the graph! And the analysis, by definition as that's why I'm writing this, ends with this bad period. Such endpoints bias you to find worse than representative results. Still, even with this bias, life has been pretty good long-term.

⁶⁸ I'm pretty sure that for about five years after its occurrence this was more often referred to as the "quant crisis" but then "quant quake" started to dominate. Alliteration always makes losses feel less painful.

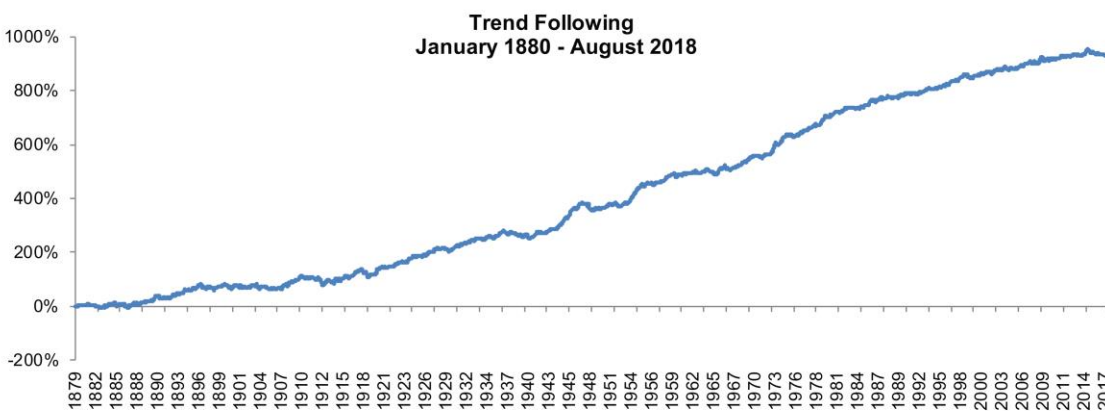
nothing terrible, but rather tepid returns (if that doesn't sound at least a little painful, you've never lived through it). However, this set of market-neutral stock selection strategies has been a solid positive long-term contributor with very low correlation to traditional markets over the long horizon (you can't observe the lack of correlation from a cumulative return chart, but it is there).

Each significant drawdown was quite painful for our clients, and for us, and we went through all the questioning and analysis described earlier, suffering all the psychological ailments that I discussed above. But we didn't give up in 1999-2000. We didn't give up in August 2007. We certainly didn't give up during smaller drawdowns and some annoying long flattish periods. And it wasn't blind faith. We didn't give up because of reasons discussed throughout this essay.

Frankly, we'd never recommend that these strategies alone should dominate an investor's overall portfolio. But who exactly wouldn't want to add some of the above to theirs over the last twenty years? But to achieve them we had to live through hell a few times.

I can remember during many of the bad times all the specific psychology I discuss here rearing its ugly head big time. For instance, the huge bias to "do something" came up in every drawdown. It's quite difficult to look at clients and say you're changing very little despite poor returns. In the tech bubble, a common critique we heard was that the "old fashioned" ways of measuring value were no longer valid in this new economy (or worse, that price simply didn't matter anymore). Instead of looking at price-to-book or price-to-earnings, a better way to measure value was to look at price-to-number of website hits (eyeballs!) or other such silliness. In hindsight, these ideas seem laughable. But, at the time and in the midst of a very difficult drawdown, many people took these things very seriously.⁶⁹ While today's debates about things like the ongoing efficacy of price-to-book strike me as more reasonable, but they still rhyme with these other times. During the tech bubble, it would indeed have been a short-term sugar high to be able to tell clients, and even perhaps for internal morale, "we found the problem and fixed it, from now on we're not using standard value criteria, rather we've switched to better more modern measures." Obviously, had we done this, it would have led to disaster.

Here's another one. Using a backtest we can test the simulated net returns to trend following for [more than 125+ years](#). Here are the cumulative net returns:



Source: AQR. Data derived from Hurst, Ooi, Pedersen (2017), "A Century of Trend Following Investing," *Journal of Portfolio Management*, and updated through a more recent period. For illustrative purposes only.

⁶⁹ To make matters worse, what do you do as a good quant? Well, you run a backtest to see if there is any empirical support to this idea. However, imagine running a backtest of price-to-number of website hits in 1999. You probably only had 5 years of historical data at most, and can you guess at what the results of that backtest would say about the strategy. Yes, it was phenomenal. Clearly, this is an example of how not to do quantitative finance. However, evaluating this kind of analysis and, when appropriate, arguing with it, in the midst of a drawdown, is no easy feat!

The dip at the end (can you see it?) actually makes for a long and painful drawdown, but does it seriously change your view of the long-term evidence (remember time dilation!)?

The bottom line is that if you look at either graph and say “wow, this last swoon really disproves the whole thing” then I’m not going to be able to convince you of anything here. But, if like me, you look and say “I’d take this, tough times included, again for the next score years” then all that remains, and it’s not a small thing, is to study reasons **other than the recent tough times** to potentially worry about the future. Again, that is always legitimate, and I’ve discussed it extensively. But the necessary perspective from the long-term can’t be overstated.

What’s Not Going On? (and some related FAQs)

We get a lot of specific questions that don’t fit very well into the above. But I want to make sure I address them, so, here we go:

Are you too big?

In stock selection, where we hear this question a lot, our answer is that we really don’t think so, although it’s always a fair question. Again, our trading costs don’t look abnormal. And what’s been going on this year has been happening for many quants of many sizes and even more generally for non-quantitative value managers for a while. We just don’t think this is it.⁷⁰

Of course, worries of too much money ruining a strategy exist in other places, too. We sometimes hear this asked about the difficulties in trend following. But the facts don’t play along. Assets in dedicated trend-following managers never recovered from their peak in 2008 (our best estimate is they’re about 40% lower). At the same time, measures like open interest and volume have increased meaningfully. So, while the strategy may be more well-known now, it simply does not have more direct capital deployed to it (admittedly it is difficult to estimate capital that may pursue trends in non-dedicated programs) and the markets in which we trade have gotten more liquid. Explaining performance isn’t complicated. Markets have simply had fewer large consistent (i.e., trending) moves over the last few years as compared to history while the frequency and losses incurred from smaller reversing moves has been similar to history. It is highly unlikely that too much money in trend-following funds would lead to fewer large macro trends in markets. Additionally, like for stock selection, our transactions costs, which we obsessively measure, haven’t changed materially (which might happen if there were far too many people trying to execute similar trades). Once again, when faced with little story or evidence to back up theories for why now is different, beyond the bad period itself, one must consider recent travails against at least [a century of evidence](#).

Finally, our strategies being too big wouldn’t imply large drawdowns. Rather, it would mean they are potentially not able to generate returns as expected over the next long-term. We don’t believe this is the case, but the story doesn’t even fit what we’re actually seeing.

Why bother with liquid alts? Why not just add high quality fixed income?

We think traditional portfolios should hold bonds. In fact, bonds are [underrepresented](#) in many strategic portfolios. You should also add lowly-correlated, positive-expected-return liquid alt investments by the same principle that says you should diversify across stocks and bonds. It’s simply not an either-or. They are not mutually exclusive, and we think it is better to add both.

⁷⁰ I’ve already discussed above whether we think too much money is chasing these strategies in general (even if no one firm is too big). We can’t find evidence of this problem in the value spreads or in the costs of trading.

Should we all be looking for “new uncrowded signals”?

When relatively well-known strategies suffer there’s always a call to find new edgier ones. After the Quant Quake of August 2007, there was a loud chorus advocating that quants move to these.⁷¹ We didn’t dismiss it then, nor do we now. We are always looking for new signals and ways to improve our old signals.⁷² However, it’s important to recognize that known strategies are still darn good, and you don’t find new uncrowded high Sharpe ratio signals just because you now really want to. “We should all find brand new big capacity sources of return that aren’t correlated with markets or each other” is a noble goal and effort. But it’s one unlikely to succeed en masse with the capacity necessary to move the dial for more than a few, if at all.

Frankly, I think the benefits of known strategies are just dismissed way too easily. The long-term evidence for them is simply staggering — something you will never get from a new signal. When an “old” signal doesn’t work for a while we can, as we do to exhaustion, look at it everywhere for 50 to 100 years, including its other tough periods, and get confidence it will work again. When a new signal doesn’t work for a while, where do you look? So, yes, keep trying, but again it’s not an either-or, and don’t dismiss the utility of strategies with solid theory, gobs and gobs of evidence, and that can be done in size enough to move the dial.

Is the pain this year in market-neutral stock selection from short covering? From deleveraging?

We really can’t find evidence of this either. Sorry, I don’t have much more than that. We’ve looked at data on whether short interest levels in heavily shorted stocks has changed materially (it hasn’t) and explored it more anecdotally (yes, we’re quants, but we have people who can talk to the humans, like at prime brokers and trading desks). This doesn’t appear to explain much at all.

Even if you post strong returns from here you’re going to be underwater, or at least behind your goals, for a while. Isn’t that a concern?

This is a real concern of some investors relatively new to us or these type of strategies (longer-term investors are generally not underwater!).⁷³ It’s common and understandable but it is really a pretty odd question. You must play the game going forward. If it makes your portfolio better today, for the forecastable future, you do it, and let the “since inception average” catch up when it catches up.^{74,75}

⁷¹ More generally, there have long been concerns that quantitative managers are too similar to each other. First, [we think](#) that worry is overstated. Or, at least, is not materially worse for quantitative managers than more judgmental approaches. Second, the much bigger issue is the correlation of the approach to traditional markets, still the bulk of investors’ portfolios. Here the track record of shorting about as much as you’re long (the way we create most liquid alts) has led to real diversification. As an example, in the famous “Quant Quake” some have tried to link that event to worries about the overall market and the (not yet really started) financial crisis. Nope. Over the whole quant drawdown the U.S. stock market was very mildly up. It was a quant, not a market, event (from which there was a quick recovery).

⁷² As an example, we are making a serious effort here to continue to expand and evolve our research effort including using machine learning and big data. Of course, again, this does not mean we don’t love the factors we’re betting on today, or even guarantee this new effort will bear fruit (such is the nature of research). But we are really, and truly, always trying to make things better. Also, we do believe we’ve significantly improved our signals over time and this impact has been quite positive (and we have a presentation on this we’re happy to do in person for clients, even we aren’t this publicly transparent!).

⁷³ In fact, all of this is particularly hard for relatively recent clients (and recent AQR hires too!) who didn’t personally experience the long-term good times. But, this changes none of the arguments.

⁷⁴ Here’s a true story with no names given to protect the crazy. During one tough period I was told by a client redeeming that he believed we were his most attractive investment going forward. But, and you knew a “but” was coming, since he got in recently it would be too long before the since-inception performance was good enough, so he had to get out. I kept saying “you’re selling your most attractive investment by your own forecast?” I still can’t believe I lost that argument. In fact, there are some investors, particularly some fund-of-funds, which market the track record of their current managers. That is, this is what your portfolio would look like if you invested in the set of managers we have today. The survivorship bias and plain silliness of this seems obvious, but it really happens (though thankfully I think it’s diminishing from the bad old days). If one is showing prospective clients the track record of their current managers in the past then the bias to get rid of any going through tough times and chase ex-post winners is obvious. This is a form of a known phenomenon called “window dressing” where some get rid of investments after periods of poor performance, and add investments after good performance, simply so a cursory look at their holdings seems to be winning. Yep, it really happens.

Why is this happening without a big global catalyst?

This is clearly related to the issue of “losing unconventionally” but it is worth discussing again in this subtly different context. Sometimes bad times have a big obvious reason (e.g., the tech bubble) and sometimes not (August 2007). The idea is that by being market-neutral and scaling your positions to target a relatively consistent level of volatility, something we do in liquid alts, you should be able to create a return stream that is less dependent on macro events, less dependent on market wide volatility, and more consistent in its own volatility. Volatility targeting or scaling means in high volatility times positions are smaller, so when big events are happening they often don’t have as big an impact (good or bad) as you might think. But we’ve been in a low volatility period for a while now, and economic events haven’t been very large. Here, volatility targeting makes the events that do happen more meaningful. The idea behind this scaling is an attempt to even out your risk over time. If you can do that successfully, you can make your process even less affected by what’s going on in the world, but, again, less explainable with simple stories. Better process but tougher story to explain. Again!⁷⁶

So, what do I actually own?

When a market, or individual stock, has a very bad run, it’s easy to know what you’re betting on (assuming you hold on). That doesn’t make it necessarily a good bet, certainly at the individual stock level, but it makes it an easy to understand one. Related to the difficulties that come with “losing unconventionally” and doing so “without an obvious catalyst,” it’s also sometimes harder just to wrap your head around what you own in a truly hedged liquid alt. Of course, again, that’s much of the point. What you own, using equity market neutral as the example, is a very diversified set of (and you know the litany) cheaper, improving on price and fundamentals, lower risk, higher quality assets and you’re short their opposites. The portfolio changes over time (which also means you’re not always rooting for prior events to exactly reverse) but that idea always remains the same. We absolutely commiserate that this is harder to visualize than, say, the turnaround of the market or a single stock. But this is how we create something with positive long-term expected returns that does not look like those other things. We can’t fix the difficulty this brings to some, but we can acknowledge it.

I admit that sometimes I am jealous of the stories you get to tell if you’re a more conventional discretionary stock picker. “We own these 22 stocks, these bad things happened to 3 of them causing a pretty bad few months, but this is why we still love them” might or might not be true or useful, but it is simple and clear!⁷⁷

Is this a huge tactical distress / opportunity?

Everyone wants me to say that it is. It would indeed be comforting to tell people “you have to stick with this or add more as it’s going to rocket upwards very soon!” FOMO can be a powerful inducement. But I just can’t do it.

In stock selection, value is still not super cheap (i.e., super-cheap would be if the cheap stocks were way cheaper versus the expensive ones than normal).⁷⁸ It would be fair to wonder why not, especially given the poor long-term value returns. Well, with any strategy, you can lose because either prices or fundamentals move against you. Unfortunately, more of this current drawdown has been about fundamentals. Value, at least using the behavioral

⁷⁵ Let me try the geeky explanation that has failed me in the past. Imagine you had a coin that was biased 60-40 to come up heads. Now imagine the first flip was a tails. Your best guess at any future finite time horizon is now that you find a bit less than 60-40 heads to tails (as one tails is already in the bank). But if you had to bet on that coin going forward 60-40 is still the way to go. Yeah, too geeky, no wonder it didn’t work.

⁷⁶ And, again, I must admit to some hypocrisy. My colleagues who, on any bad day, get an email from me along the lines of “we have to figure out what’s going on!” know that I am far from immune from this one. Still, I don’t think realizing the likely truth of what I discuss above, that this is just a bad period for a good process, yet being motivated to search for root causes nonetheless, is a bad thing.

⁷⁷ Though I may be suffering from a “grass is always greener” problem, I’m sure defending specific company decisions that turned out very wrong has its own big challenges.

⁷⁸ Recall that I bragged above that factors are not super expensive, so we don’t think they’ve been arbitrated away. Well they’re not super cheap either.

explanations, is a bet that prices over-extrapolate current prospects. The better companies deserve to be priced higher versus fundamentals, but even so, they're priced too high (and vice versa). However, sometimes prices are correctly reflecting this information, and sometimes they are actually underreacting to it (meaning what looks expensive is actually an ex ante good deal). Prices may over-extrapolate on average, that's why value works long-term, but not all of the time. Value wins more than it loses, but when price differentials underdo it (meaning, unlike most of the time, cheap companies aren't actually cheap enough versus the expensive ones) is a time that value fails.⁷⁹ Importantly, we find no signal from this analysis for timing value going forward. Value is not predictably bad or good following periods where fundamentals move against it. Our forecast, and it's not for want of trying for more, is value prospectively looks about normal versus history going forward. Thankfully normal is, on average, pretty good.

Another reason value doesn't look super cheap even after this drawdown is that the drawdown has been long and slow. Compared to the drawdown in 1999/2000, the post-GFC drawdown, while large and painful, hasn't been as extreme. The 1999/2000 loss was both very short and very sharp. Furthermore, it was driven by price movements against the value investor, not fundamentals. That time things truly did get stupid cheap/expensive, and not just for the stocks the value investor held but more broadly; value investors could rebalance their positioning into even cheaper stocks. A longer-term (like eight year) drawdown can (obviously!) occur. Again, that's consistent with its Sharpe ratio. But when it happens you don't necessarily own super cheap longs and super expensive shorts. Partly because there hasn't been the same decoupling of prices from fundamentals, but also the portfolio is very different now than in the past. A slow, non-dramatic, but long drawdown means you own a very different value portfolio today than you did eight or so years ago with much of your losses likely coming from fundamentals (expensive companies actually doing better than cheap ones fundamentally) not just re-pricing against you. That's ok, it's how all, even very good, strategies lose on occasion. Taking this a bit further, imagine value lost for 1000 years (but please don't believe it will do so!). At the end of the 1000 years you wouldn't say "gee, my value portfolio must be way cheaper than 1000 years ago." No, it would be a very different portfolio. And, before you ask, yes, 1000 years of evidence would indeed sway us against value!⁸⁰

So, the simplest tactical case defaults to the strategic. We believe systematic value, and more generally the kind of liquid alts we create, have a healthy normal positive expected return from here, and offer diversification from the equity and bond markets that are themselves expensive and won't always go straight up.

Frankly, I think that many are too quick to oversell the tactical case out of fear that it's the only way to get investors to stick with them. In fact, there were those calling value very cheap for the last several years. It would've been very painful to have listened to this and upped your value investing. We have argued that such timing is [deceptively difficult](#) anytime and that value was not as screamingly cheap as some others contended. This is not to say that value is never going to be cheap and worthy of a tactical call again. There are occasions when we would advocate some contrarian style timing. But things need to get to wildly excessive levels for us to have great conviction. We often say timing (think market timing but also factor timing) is a sin and we recommend "sinning a little." Thankfully we didn't sin this time.

Does this painful year presage a bear market for traditional assets, like in 1999-2000 and 2007-2008?

It's indeed true that our most difficult periods have come about 10 years apart, now again in 2018. It's also true that the prior two came before the severe equity bear markets of 2000 to 2002, and late 2007 to early 2009. Frankly, while I want to cover all common questions, I don't have much to add here. Two data points, and zero theory, makes a thin gruel for forecasting. I could jerry-rig up a self-serving hypothesis that when "really smart disciplined investors are taking it on the chin, it means something is wrong in the world and those chickens come

⁷⁹ This idea, along with why you might still favor the value factor going forward, is covered quite well by this [short piece](#).

⁸⁰ It might even sway John Liew.

home to roost” but I just can’t with a straight face.⁸¹ I think this one is largely coincidence. Still, I probably shouldn’t discourage this view too much as terrific short-term fears for traditional assets are a pretty good commercial for uncorrelated assets.

Conclusion

This has been a long post-GFC (call it near a decade) strong period for beta and a weak period for systematic value (and trend following). More diversified liquid alts, particularly market-neutral stock selection, have not suffered until this year. Basically, factors that made up for value’s multi-year slack in the past have not done so this year. Moreover, value measures we think are superior to the academic price-to-book ratio, which have indeed helped since the GFC, have not been better this year.⁸²

But the long-term evidence, in tons of places (geographies and asset classes), across oodles of time, is that value, and the other factors, are not so weak, nor is beta so strong, as recent experience would indicate. Furthermore, and it’s not for want of trying, we can’t find any substantive evidence that this recent period indicates “the world has changed” forever outside of returns we know ex ante that we’ll have to suffer on occasion.

Frankly, I think we all know what we’re supposed to do. And at the least, we all know that recent results don’t even move the dial on changing what we should believe (i.e., if you liked some liquid alts of the type I discuss before this year you still should now — if you never liked them, that’s legit, and feel free to continue disliking them!). However, acting on this rational conviction is hard. Like really hard. Acknowledging that is necessary and fair. As I’ve said many times above, I feel the pain and pull of irrationality as much as anyone. I just don’t let it affect how we run things.

So, what are we doing? Well, aside from communicating, measuring, monitoring, and considering every theory from the reasonable to the somewhat whacky, mostly we’re doing the hardest thing. Nothing. At least nothing in terms of radically altering our investment process. Doing nothing, in this context, runs against every bias out there, but we think is usually the right thing, particularly when done consciously after considering the evidence. In fact, if things get worse, but no new evidence of broken strategies appears, we pledge to do nothing with even more vigor.⁸³

In quick order:

- The case for diversifying positive expected return liquid-alts, if you can find them, is strong.
- The case you’ve found them in the classic quant factors is strong (though, again, I’m certainly not making a general case for the entire liquid alt universe).
- The case that recent results, while not remotely fun, changes the above a whit, is very weak.

Unfortunately, I can’t promise you that things won’t get worse before they get better (though getting better is indeed our expected case). I can’t promise you abnormally high short-term expected returns because our process is poised like a coiled spring to erupt. But I can promise that to explain these tough times, we’ve looked under every rock we could imagine, found no smoking gun, and wholeheartedly believe that the gobs of long-term evidence, theory, and intuition, still strongly support the case for these type liquid alts going forward. I can promise you that despite that we’ll keep striving to make our process better and better.

⁸¹ Another hypothesis is we’re [this guy](#).

⁸² And trend following, while not particularly terrible this year, continues its desultory ways.

⁸³ Consider the equity market. If equities suffer bad performance, we don’t (and shouldn’t) think equities are “broken” (though some still will). In fact, many of us think the opposite: the bad equity downturns remind us why we get paid to own equities over the long-term. How many investors wish, after some notable equity downturns, they had “vigorously” done nothing?

Honestly, I believe that navigating through times like these is a major way we add value for clients. Both by ourselves sticking with what we do like grim death, and also by helping our clients to do so. We're geared up, ready, and won't flag or fail.

But I admit I'm nervous. Not about the efficacy of our strategies. The long-term evidence for them, and lack of a credible case for now being different, is too strong. I am not nervous that the future is bright for expensive, poor momentum, low quality, high risk assets, or that all trends reverse quickly now. But I admit I'm nervous about how our clients will react (this is correlated with my writing this fairly giant essay). Will they truly stick with what we've started together for the long-term? We've built a business on extreme transparency, fair fees, and trying to set realistic expectations. Much of this design is precisely about weathering tough times like these. Our theory has long been that these attributes would contribute mightily to everyone taking a long-term outlook, versus promising (and charging for) "magic" returns that, when the magic doesn't appear for a while, are easy to lose faith in. I do believe this is going to be a test of our theory. I hope and expect we'll pass. So far, the reactions of most clients have been exactly as we would hope. We are gratified and humbled that so many share our vision (though still nervous!).

In 20 years at AQR, and near 30 years of working on quantitative factors, I can tell you we've seen this before (well, not exactly this, but they all rhyme). [All of this has happened before and will happen again](#). And that's ok. It's more than ok. It's necessary. The painful and difficult times are a big part of why we're convinced these things are real and can improve long-term results for those who can allocate part of their portfolio to them and then stick with it. We indeed must "embrace the suck" as it's likely why we can be long-term successful.

Thank you for wading through this tome. And, of course, thank you for your faith in us.⁸⁴

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⁸⁴ I'm just going to assume that so as not to end on a downer.

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