Cliff's Perspective

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A Gut Punch

December 22, 2020

Sure, the last nearly three years have hurt, but at least the explanation was straightforward. A core part of our process, value, suffered. So when value rebounds, we will too, right? Well, not necessarily. To be clear, if value makes a prolonged major recovery, we certainly believe we will as well, but over short periods that doesn't have to happen. Unfortunately, this is what we have experienced since the end of October, making what I'm about to cover excruciating. While it does not change my view going forward one drop (more on this later), that doesn't mean it's not a gut punch.

I'm not going to focus on the last nearly three years in their entirety. We've already written ad nauseam (literally) about how that was mostly a value debacle with our versions of value suffering even more than simple versions of value and while our other factors helped, they did not help enough (unlike the long but shallower value drawdown from 2010-2017 during which we prospered[1]). Instead, I'm only going to examine this year, with its two very different phases (January to October and November to present) where we (and many quants in general) have managed to stink in both. I'm going to focus my analysis on publicly available indices. The only "AQR-ing" I'll do is take a combination of these indices that vaguely, kinda sorta looks like weights we like (my strong guess is we're far from alone among quants here).

The Set-up

I use the Dow Jones total return factor indices. They are as follows (with tickers and descriptions[2]):

- DJTLSVT – The long value index (cheap stocks)
- DJTSSVT – The short value index (expensive stocks)
- DJTLMOT – The long momentum index (recent winner stocks)
- DJTSMOT – The short momentum index (recent loser stocks)
- DJTLQUT – The long quality index (high margins, etc.)
- DJTSQUT – The short quality index (low margins, etc.)
- DJTLABT – The long BAB index (low beta stocks)
- DJTSABT – The short BAB index (high beta stocks)

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[1] We did well because over this prior period our value factors did better than simple value (i.e., one factor book-to-price without industry adjustments) and our other non-value factors helped a ton.

[2] If you want to go deeper into these indices look here, here, and here.

I choose these indices because:

a) It's nice to use an independent source. It lets other people check your work and shows the results clearly aren't specific to you.

b) As indices go they are pretty reasonable from our perspective. In particular, they use multiple measures for value and attempt (it can never be done perfectly) to eliminate sector bets. These are two design features we, and we think many quantitative managers, believe help long term.

These indices are available daily starting on 12/31/2001. That means they miss what was a very strong period for factors in the mid-to-late 1990s, a very bad period for the value factor and for most reasonable combinations of quant factors during the tech bubble, and a big part of the recovery from the tech bubble craziness from 4/2000–12/2001.

To create long-short factor returns for all but BAB it would be reasonable just to subtract the returns of the short index from the long index. None of those simple long-short portfolios have large (positive or negative) market betas. For BAB, since the long portfolio is by construction lower beta than the short portfolio, this simple method would create a long-short portfolio that was very short the market and where short the market was, in fact, the main bet. Thus, to use a consistent methodology for all four factors, I compute the in-sample daily beta of the returns of each index to the S&P 500,[3] scale the short portfolio's returns by the ratio of the long portfolio beta to that of the short, and subtract the scaled short portfolio returns from the long (this creates long-short returns with an in-sample market beta of zero).[4] For the rest of this note I'll call these long-short factors from the DJ indices simply: VALUE, MOMENTUM, QUALITY, and BAB. I'll use lower case when referring to things like "value" in a more general sense.

I'll also be looking at a combination of the four (in fact that's the main point). The weights I'm choosing for this exercise are:

- 40% in VALUE
- 25% in MOMENTUM
- 20% in QUALITY
- 15% in BAB[5]

Let me mention a few things about this construction. QUALITY and MOMENTUM are both negatively correlated (MOMENTUM much more so) with VALUE over the long-term, and BAB has been trading that way over recent times, so think of them together as balancing VALUE (i.e., the seeming plurality of weight in VALUE isn't as big as it looks). Next, the total weight in VALUE plus MOMENTUM in reality is not quite as high as the above looks, as those two are so negatively correlated that together they have less impact than the notional weights make it seem (they are still the big kahunas though). If you think of them as a system, that negative correlation lowers their combined volatility and means they aren't really getting quite 65% (40% plus 25%) influence on the whole combination. Finally, 40% in VALUE is a bit high versus what I'd likely use over the long term and is meant to reflect our "sinning a little" towards the VALUE factor this year.[6]

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[3] This would be cheating if the main point here was to create real-world portfolio strategies. If that was your goal, you would use some type of rolling estimate of beta based only on prior data. But then you'd give up examining long-short returns over however long it took to estimate the first rolling beta, and results would be sensitive to the look-back window chosen. Since our purpose here is just understanding what's going on, not creating a fully implementable strategy, I just use the in-sample full period betas. I promise it doesn't matter for our purposes here. Plus, the in-sample beta adjustment assures zero market exposure over the period, whereas a rolling beta adjustment does not, and the point of this step is simply to take out the fluctuations in the overall market for analysis.

[4] This step implies long-short portfolios that would not be dollar neutral. Thus, I also need to subtract or add a cash return on the net implied imbalance to create a true long-short return.

[5] If the weights seem oddly specific, they aren't. Well, maybe they are, but they're just the first thing I tried. Feel free to try varying the weights yourself. Anything but big alterations won't change much of the analysis to come. I did choose weights such that the realized volatility of just the value part was roughly equal to (normally, it would be less, if not for "sinning a little" as I will discuss) the total volatility of the combined non-value factors. That's just something I think is reasonable. Again, build a spreadsheet and try it yourself!

[6] For consistency this is the portfolio I show results for back to 2002. Again, before the end of last year it would likely have slightly less VALUE if I was trying to be super-realistic. By "sin a little" we mean a tilt done only at fairly giant valuation extremes and of a size where we'd be OK (if not our absolute first choice) holding the portfolio forever (the second part is what constrains us to only sinning a little). For instance, moving to 100% VALUE because it's super cheap might or might not be a better portfolio for the next year, but we're very convinced that long-term it is a vastly inferior portfolio to a combination of the four long-short factors. Therefore, to us, such an aggressive tilt would be a giant cardinal timing sin, not a venial "little" sin.

The Analysis

The below graphs the cumulative excess (additive) return to the portfolio of the four long-short factors. It's a story of long-term success with a very painful last few years (in amber).

Cumulative Excess Return of the Four Factor Long-Short Portfolio
January 1, 2002 – December 15, 2020
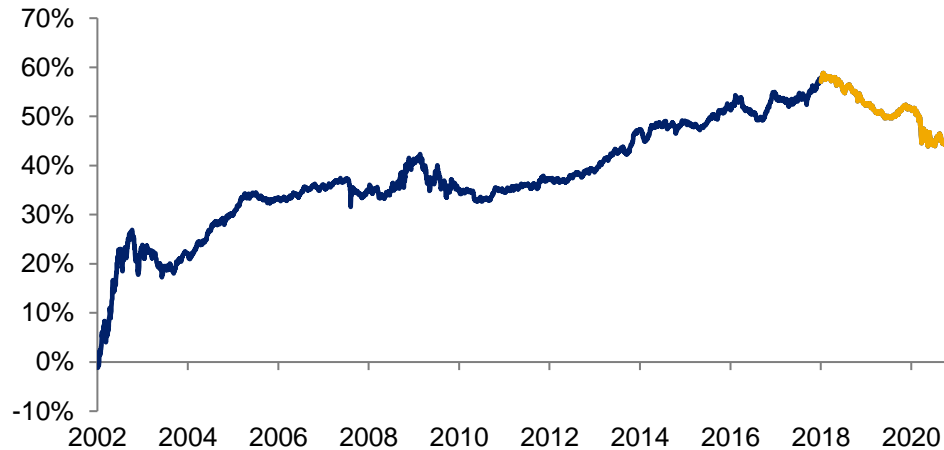
Source: AQR, Bloomberg. January 1, 2002 – December 15, 2020. Based on daily returns of the Dow Jones indices and weights listed above, portfolio rebalanced daily. Please see index descriptions in the Appendix. Past performance is not a guarantee of future performance. For illustrative purposes only and not representative of a portfolio AQR currently manages. Hypothetical data has inherent limitations, some of which are in the Disclosures.

As I said, I'm going to focus on 2020, but I will first briefly review the post-2010 period (generally acknowledged as the big value drawdown). From 2010–2017 when traditional value (let's call that the book-to-price[7] factor without industry adjustment) suffered, multi-factor value that neutralized the industry bets was only flattish (a relatively good result if not exciting in the absolute), while the other three factors, particularly BAB, were quite strong. Hence 2010–2017, despite it generally being regarded as terrible for value, was a pretty darn good period for quants (like us!) who looked anything like this combination of the DJ indices. Seven such years makes it clear that multi-factor quant can work fine even when the famous book-to-price value factor is failing.

That's up to 2017. Now, looking at the first two years of the drawdown (the first two years of the amber part of the graph above, which is roughly 2018 and 2019), the pain was largely a tale of VALUE factor losses while the other factors failed to make up for those losses (they weren't terrible but weren't nearly good enough). Obviously, this is a terrible outcome for such a factor mix. While not a formal definition of "rational," we do think, loosely, that 2010–2017 was a more "rational" loss for simple value (and was greatly mitigated by having value factors we believe are better than simple unadjusted book-to-price). In a "rational" loss for value, other factors, like quality, earnings momentum, and low-risk investing, have a real chance of helping (and they did). We think of the post-2017 (the ugly amber part) losses to value as much less rational (we note that the value spreads we track didn't appreciably widen until starting around 2018, an indication that nothing too "irrational" was going on before). In fact, as late as 2017, when others were yelling that value must be cheap given how bad the traditional measures had done since 2010, I was writing that this just wasn't so. When something loses for rational reasons it doesn't necessarily get cheaper.[8] OK, my bragging is definitely over as I move to the h-e-double hockey stick time of 2020 (this applies to the world in general in 2020, but here I'm focusing just on multi-factor quantitative stock selection).

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[7] As I've mentioned many times, there is way, way too much emphasis on book-to-price when discussing value. It is one of many possible valuation indicators and many, even most, quants use a wide range of other measures along with book-to-price (if they use it at all). There is some irony here, though. By our measures, book-to-price over the long term is not one of the better value factors and was one of the worst from 2010–2017, but over this very hard recent period it is actually one of the better value factors (better means less bad here), exactly when the whole world seems to be criticizing it!

[8] I often use the highly over-simplified example of someone who buys a stock because it has a low P/E (warning: don't buy a single stock on a single value measure!). If the price falls 50% it usually means it has cheapened, but usually isn't always. If the earnings fell 75% over the same period it actually got doubly expensive on this, again over-simplified, measure.

OK, deep breath, on to 2020. Below is the performance (measured in standard deviations versus half the full-period 2001-2020 mean[9]) for the four long-short factors and the combination of them (called "Portfolio") in the first ten months of 2020:

	L/S Mom	L/S Value	L/S Quality	L/S BAB	Portfolio
January – October	2.09	-4.23	1.57	-0.18	-2.21

A neat, if greatly depressing story. VALUE was utterly crushed,[10] and MOMENTUM helped but at half the rate of VALUE's losses. QUALITY helped but again not close to offsetting VALUE, and BAB, after years of being the best factor of the bunch, didn't help at all. Obviously this leads to a pretty bad result for the combination portfolio.[11]

OK, let's now look at the next two months (November and December to date[12]):

	L/S Mom	L/S Value	L/S Quality	L/S BAB	Portfolio
January – October	2.09	-4.23	1.57	-0.18	-2.21
November – December	-2.62	1.78	-2.95	-1.55	-1.56

This is what I referred to in the title as a gut punch. We have seen a value comeback, albeit smaller and over a much shorter period than the fall from January through October (so cumulatively it has only come back a bit). But MOMENTUM and QUALITY lost more than value gained, and BAB lost too! Obviously, when more than half the portfolio loses and a large proportion loses more than value makes, it's not good. While it only adds up to a -1.56 standard deviation event over about a six-week period (small potatoes in the grand scheme of things, we have a lot more to go!), losing while value does well really hurts. Adding the year-to-date (YTD):

	L/S Mom	L/S Value	L/S Quality	L/S BAB	Portfolio
January – October	2.09	-4.23	1.57	-0.18	-2.21
November – December	-2.62	1.78	-2.95	-1.55	-1.56
Full YTD	**1.01**	**-3.31**	**0.41**	**-0.72**	**-2.62**

Source: AQR, Bloomberg. January 1, 2002 – December 15, 2020. Based on daily returns of the Dow Jones indices and weights listed above, portfolio rebalanced daily. Please see index descriptions in the Appendix. Past performance is not a guarantee of future performance. For illustrative purposes only and not representative of a portfolio AQR currently manages. Hypothetical data has inherent limitations, some of which are in the Disclosures.

Of course, if you take two bad periods and add them together you get an even worse result. This 4-factor combination lost for ten months because VALUE lost well more than MOMENTUM/QUALITY/BAB made, and then lost since October for precisely the opposite reasons.

We knew this could happen (which is, of course, a far cry from forecasting it). Even with a "sin a little" tilt on, value does not utterly dominate what we do, and this specific VALUE long-short strategy does not utterly dominate the four-factor portfolio we have been examining. We know that seeing this type of offset is particularly likely at short, sharp turning points when value is very negatively correlated with momentum (and in this case quality and BAB as well). Of course, turning points don't have to be short and sharp, but this one has been so far (not so much cumulatively, but for a few days in November it was certainly short and sharp). If, still an if, as we hope and

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[9] We often use half the historical mean as a reasonable, if obviously very coarse, metric for success going forward, recognizing the inherent optimism of backtested strategies.

[10] Despite some famous maniacs thinking most quants don't understand that investing is a fat-tailed activity, we (not just AQR but the quant world in general) really do. Among others, one of my mentors, Eugene Fama, wrote half his dissertation on this topic. Even he is also often accused of not getting that markets are not "normally distributed" despite his writing this before I was born! Of course, we can all still argue about how fat-tailed investing is and what, if anything, to do about it.

[11] Since it happened around the world, these numbers understate the statistical and economic pain of the combination to global factor portfolios.

[12] Updated through 12/15/2020.

expect, value continues to perform well over the next 6+ months, we should see the drag from the other factors greatly lessen and the net, we believe, turn sharply positive. During the tech bubble, value and momentum were very negatively correlated (in absolute and versus their history) at the turning point (March of 2000) but soon were working together. Of course, despite this explanation, it's still highly disappointing ex post to see the non-value factors more than offset the modest (so far) value comeback. Despite the issue of turning points it did not have to be this way. Speaking informally, it's clear this recent (mostly November) value run is more a selling of momentum and quality (where value benefits from the negative correlation but less than the others get hurt) than a buying of value. That's an ex post explanation and certainly wasn't, and isn't, our ex ante prediction. And despite it making sense, and despite knowing it can happen ex ante, it's still distressing ex post.

Of course, the question is about going forward. To discuss that I'm going to do a brief, but I think important, detour into the psychology of painful drawdowns, including into the heart of darkness (i.e., my own emotional/behavioral reactions at times).

To the Pain

I know my personal psychology isn't particularly important to others. I'm not so solipsistic and arrogant as to think that what I have been going through holds a candle in importance to the reality of how we are doing for our clients (and our employees).[13] But I have written about it in the past, never hiding my flaws, and will again here, as I think I represent a lot of investors. I've just never rid myself of the biases, the emotions, and the sometimes nearly unbearable pain of sticking with, for the long haul, what you believe with all your head and heart to be a very good investing strategy. Importantly, not once in twenty-six years of implementing these strategies have I made a change to the process or portfolio because of these occasional short-term feelings, and I have always sought out and listened to the consensus opinion of my calmer colleagues (except, perhaps, for this blog which some of them are leery of me writing!). I think such struggles that I, and I think so many others, go through are common and, ironically, key to why some strategies actually work long term and why they don't get arbitraged away. So, I will discuss my struggles here, but please, take it as the example I know best, not just personal whining or cathartic ranting.[14]

Running quantitative investment processes for more than a quarter of a century[15] and studying them since 1988, I've seen the good times outnumber and outweigh the bad times. But, I have seen bad times. I've seen short, sharp "crash" events and much longer bear markets for things we believe in. This may be obvious, but while the short-term, "non-normal" moves are scary, the long-term bears are far harder to take. We have long used the term "time dilation" (yet more physics envy from finance) for the feeling that something that has been going on for a few years is now the permanent condition. During these times, a bad week feels like a month. One-year drawdowns seem like five years. Two- to three-year drawdowns seem like all the years you have left. Every day you're not bouncing back, or worse, falling more, feels like proof you're an idiot.

I've never been known for my even temper in prior drawdowns but this period has been different, if not in kind then in degree. This may be TMI, but I'll share some anecdotes. Many days when we've been down during this drawdown, I walk into my co-founder John Liew's office (actually now I do it over the phone with a mask on – belt and suspenders stuff) and say "I can't believe we're *&#%ing down again!" He responds calmly with something very much like "Cliff, you know even if we're as right as we think we are, the edge on any given day, week, month, or even year isn't that big, right? This is not a shock, right?" I kind of acknowledge he's right but give him a look like he's a naïve little child who doesn't get it (all the while still knowing he's right!).[16]

Now, on a really, really bad day I have even had ridiculous moments where I worry to John that multi-factor quant investing doesn't work (either anymore, or that it never did and we've just net gotten lucky since the data in my dissertation ended in 1990). I think everyone (save John) feels this way at times. And, for good measure, in my tilted state, I add that "not only does quant not work, but we are particularly bad at it." In other words, on days like this I think we taste lousy and are more filling. On those days John has his work really cut out for him. Those conversations go something like this:

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[13] I mean, directionally I'm certainly solipsistic and arrogant, but not nearly this bad in magnitude.

[14] I carefully said "just" as it's certainly part whining and cathartic ranting.

[15] That sounds more dramatic than since 1994.

[16] Many of you who know John know this, but John is pretty much a Vulcan when it comes to what we do. He does the rational thing and doesn't get perturbed in the bad times if he thinks we ex ante did the right thing and going forward we still believe it. I can be a Vulcan, too, but unfortunately I'm always suffering from what looks like a bad case of Pon Farr (in a P&L, not a mating sense!).

"Cliff, you've seen the evidence, out of sample since the original work across time, asset classes, and geographies, that what we do has worked long term, right?"

"Yes, John."

"And Cliff, we don't do anything we don't understand, right? I mean, we think there is economics, both classical and behavioral, and common sense behind what we do, right?"

"Yes, John."

"And Cliff, we have put a ton of work, both before the drawdown and of course at DEFCON 1 during this drawdown, into trying to determine if something has changed? If human behavior is now more rational? Or if too much capital and knowledge of the strategies has arbitraged them away?[17] Or something else?"

"Yes, John I've actually done much of that myself."

"And Cliff, you, and the rest of us, have done this with an open mind, done it pretty obsessively, and keep concluding there's no story that holds up for the investing world being that different going forward than in the long-term past, right?"

"Yes, yes, John, I know."

"And, Cliff, you do believe that the twenty-six years we've put into working on this live, and thirty years of studying it, have led to an excellent implementation of multi-factor quant, not one that 'tastes lousy,' right?"

"Yes, John."

"Then Cliff, why are you so upset today, and so many other days, and why do you entertain doubts that you know you have zero evidence to back up – quite the opposite actually?"

I usually reply something like "John, I agree with everything you say, but why are you not upset and how do you not go to the same dark place!!!?"

He has no great answer for that one (i.e., for explaining his superiority to me). Even after these discussions I often leave him and redo everything from scratch (the long-term evidence, the stories for why the world might have changed, the case for AQR implementing a very strong version of multi-factor quant, etc.). I'm self-conscious about all this but, in truth, do you really want someone running things that will not entertain the idea that he and his firm may be wrong? I ultimately bow to John's obvious wisdom and am always embarrassed over my very short-term anger and frustration-driven doubt.[18,19] Then we lather-rinse-repeat.[20]

I share this all as I know we all experience (ex John) something similar. In some sense it should be easier for me than most, given I'm allegedly really well versed in how these things work (many of you know a ton more than me about so many things, but I'm supposed to understand this stuff better!). But, in another sense it should be easier for others who, unlike me, only have a few percent of their portfolios undergoing this multi-year torture. My guess is that those two kind of balance out, and it's similarly hard on us all (ex John again). The bottom line is that bad things sometimes happen to good, long-term processes over anything short of the very long term. We know this, and it still doesn't fix everything. If you still believe they're good ideas, and you've come to that conclusion after

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[17] By the way, as an aside, most stories for the strategies "going away" (stories we have tested with an open mind and consistently rejected) are usually stories for why they are mean zero (worst case slightly negative after trading costs) going forward, not stories that explain a big and long-lasting drawdown. That may seem obvious, but it often gets confused. For example, if your valuation indicator has been compromised to the extent it's a random number, it doesn't automatically lose for three years. Random would stink, and again we don't believe for a second it's now random, but this often gets confused, as explanations for why a strategy has been ameliorated over time become tacit explanations for why they've really stunk.

[18] When he's really being harsh he literally re-asks me where I've invested for my kids. He knows the answer. He's too nice to then ask the obviously sarcastic "and do you like your kids?" but it's implied. I do by the way. Though I'm very glad they aren't yet old enough to have demanded a portfolio review over the last few years.

[19] At this point I usually also offer to pay for whatever I broke in his office.

[20] Has anyone else ever worried about shampoo bottles encouraging an infinite loop? Do they still say that without qualification? It's been a while since I've used shampoo…

considering the opposite with a truly open mind, your job is, as you've heard me say before, to "stick with them like grim death."

Of course, as I've made abundantly clear, I have days where I find this very hard to do myself (again, to date I have never allowed those days to lead to stupid investing decisions, instead only whining, angst and couch time with John!). But those days are the behavioral beast talking. Thankfully, I have John (we all need a John[21]).

What are the Alternatives?

Not to be catty, but what are the alternatives? Do you want to solely be in what has been (note the tense) the best, or do you want to be in what looks best going forward?[22] Looking ahead we, and many others, think the prospective return to traditional assets is quite low, particularly when viewed as a portfolio of expensive stock markets and miniscule yielding bond markets.[23] You can try to escape to the world of private markets. Some of that may be additive but much seems like yet more exposure to very expensive stocks at very high fees, albeit with the salve of no mark-to-market perhaps helping people stick with it (if we were private equity, I'd still be refusing to admit we're down!). But, smoothing does not magically increase the long-term expected return and may indeed have precisely the opposite effect as investors perhaps pay a premium for such smoothing, bidding up today's price and lowering future expected returns on private assets. Even commonly held beliefs like "but hey, there's alpha in things like active fixed income" turn out to be mostly just loading up more on expensive equity markets.

To bring these points home and make a direct comparison, the below graphs the expected return of a traditional 60/40 portfolio alongside a value spread,[24] which is a measure of the "value of value." We show (in purple, using the left hand scale) our estimate for the forward looking long-term real return to a global 60/40 stock/bond portfolio and next (in blue, using the right hand scale), the standard deviation event, or z-score, of a global value spread using a composite of several valuation indicators:

Expected Real Return of Global 60/40 Stock/Bond Portfolio and Global Value Spread
January 31, 1990 – November 30, 2020
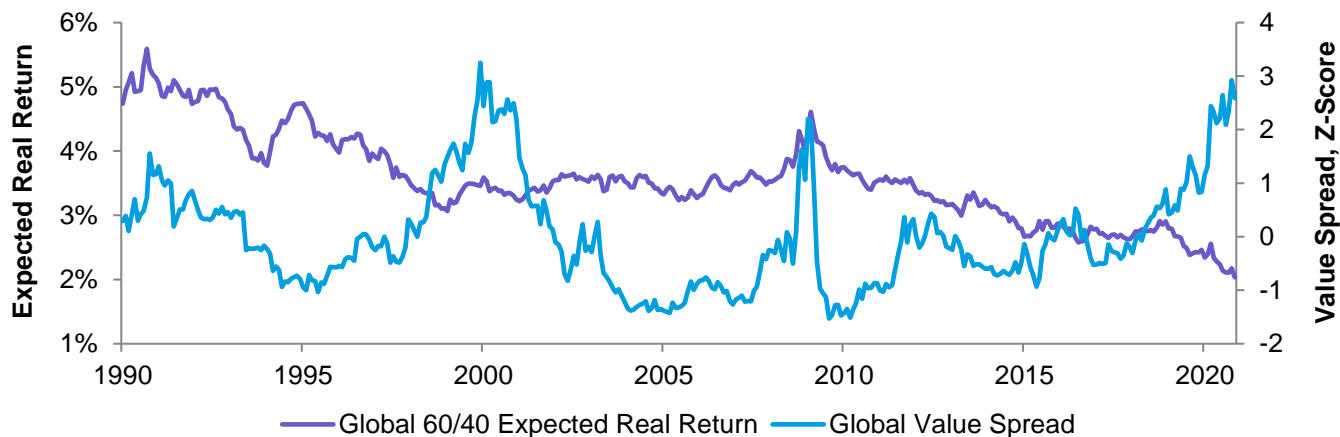
Source: AQR, Bloomberg, DataStream, MSCI, Consensus Economics, CRSP, XPressFeed, IBES. Monthly data, 1/31/1990–11/30/2020. The 60/40 portfolio is 60% global equities and 40% long-dated global government bonds. The Value Spread is a ratio spread using four individual measures of value. Please see the Appendix for more details on the construction of each series. Past performance is not a guarantee of future performance. For illustrative purposes only and not representative of a portfolio AQR currently manages. Hypothetical data has inherent limitations, some of which are in the Disclosures.

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[21] Compliance is concerned that in a very serious note I just made a bathroom joke. I didn't mean to, but I will tell you a true story. It wasn't until John Liew met my sister-in-law, at the age of about thirty, that he ever noticed, or someone ever told him, that his first and last name (in a homophonic sense) are both slang for a bathroom. I don't think it changed his life.

[22] In investing we seem to get our tenses wrong. One of my standard comments for many years is too many investors are "momentum chasing but at a value time horizon." (As you know we think momentum is efficacious but not at the horizons it's often used, like prior 3- to 5-year returns.)

[23] We've seen more expensive stock markets, and similarly miniscule yields before, but never at the same time and to nearly the extent as today.

[24] It compares the valuation ratio (or ratios) of a cheap portfolio to that of an expensive portfolio.

C'mon man! The prospective expected long-term return on 60/40 is at a record low and the value spread is at comparable highs to 1999/2000 and the GFC. At the risk of begging the question, I think we all know what we're supposed to do here. What we tell ourselves in good times is that the next time there's a horrible period for something we believe in, we'd really stick with it, even add to it. And, conversely, the next time something we believe in goes on an incredible run and gets very expensive, we'd at least consider lightening up (or, if unwilling to even sin a little, at least not rush in to add). Not blindly of course. We know we'd need to investigate it. We'd entertain any reasonable and even some unreasonable hypotheses for why the beaten-up cheap alternative is not a good idea anymore. We'd re-examine the historical track record in light of recent results. And, if, if, if, that all holds up, again we'd stick with it, or even add to it. And while in those good times we believe this is how we would act next time hostilities break out, we don't actually do it when the time comes (and, as history proves, it always comes)! Honestly, I think everyone knows what they're supposed to do here. I just think all the behavioral stuff I discussed above makes it all really, really hard. As I've revealed with way too much TMI it's even very hard for me and I've studied this all just a bit… (so I'm commiserating not lecturing!).

Conclusion

Value (and in the example above, the specific VALUE long-short factor) has been the main cause of our troubles, and we have been right to focus on it. Still, it was never all we do, not even a majority. Unfortunately, post-October we've shown that in the wrong way (again, from 2010–2017 we showed that in the right way) albeit not at eye-popping totals. Again, we expect a continued value comeback to be much better for us, as turning points if they're very quick are the hard part (although a return to 2010–2017, what I called a "rational" loss to value with us prospering from all the other factors would be fine, too – we don't really care about value itself, we just care about doing well overall). But, after "sinning a little" towards value, talking about it constantly, and yes rooting for it with all our hearts, it is very tough to see its initial comeback not only fail to change our fortunes but hurt them a little more. Again, as I've discussed above, it changes nothing for what we do and for what we believe in going forward. Yet, that's only a perfect salve for John Liew and Spock.

One of the pillars of common sense is summed up by a quote often credited to Einstein: "The definition of insanity is doing the same thing over and over again but expecting different results." Yet, amazingly, over even multiple years, that's exactly what we do in investing, and it is exactly what we should do! The fact that this feels like it goes against basic common sense (it really doesn't) is a big part of what makes this so hard. But, in a much longer-term sense, hard is actually good. More than good, it's necessary.

Above I dropped one line about how the pain of these periods might actually be "key to why some strategies actually do work over the long term." This is worth exploring a bit more. If everyone were Vulcan-like rational, no behavioral-based[25] strategy would work long term as there would be no biases of which to take the other side. Conversely, if everyone were Vulcan-like rational it would also be easy to stick with modest (but real) Sharpe ratio strategies with low correlation, and they'd likely get arbitraged away as everyone recognized they improved a portfolio and would be unfazed by their tough times. In an ironic twist, the most common question I used to get before these terrible few years was something like "if these strategies are as good as you say long term, why don't they get arbitraged away?" Seems like a long time ago! Now the most common question I get (and these often come from fellow believers) is "how the heck can I stick with these strategies?" This is ironic, but not the paradox it first appears to be, as if the second didn't happen, then the first would indeed be true. Things that are easy to stick with are also easy to arbitrage away. Realizing this doesn't make it easy to live through, that's kind of the point, but it does get me through some tough nights (when John Liew isn't available).

So, I truly think the prospects for us are quite good, and the prospects for a lot of other things are quite bad (at least versus history, and note that this is medium to long term, not a market timing call!). Specifically, there is much less capital in quant now, and as shown above and in a few other blogs of mine (here and here), there are still very wide value spreads today versus the past. Lastly, we think the evidence that these strategies work on average, even without these absolute and relative tailwinds, is still very solid and undamaged by the legion of "the world has changed" stories (we've checked them all many times over). Again, that barely ameliorates the pain I discuss above. I know. It should but it doesn't. But, we also all know we're supposed to invest based on future prospects, not based on running from the pain that often creates the opportunity (and not just invest in what has worked the last three to five years because it feels good!). It's an open question how many can actually do it… (hopefully you all have your own personal John Liew).

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[25] As I have done before, I focus on the behavioral explanations, but risk-based explanations should be given their due, too.

For us to make money going forward, people need to be imperfect (not horrifically irrational, just have behavioral biases).[26] Strategies need to be not-arbed-away (we think quite the opposite is going on now). And, more generally, there has to be no first order, big reason why what has worked for many, many years on average won't work anymore (we can never be sure we've checked everything, but we've checked a ton). That doesn't make what we do riskless going forward. It's not just legalese, but common sense, to say there are no guarantees in investing. But we think it makes us a darn good bet in a world that needs some darn good bets.

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[26] Looking at the larger world beyond quantitative equity investing, do you see a lot of evidence we have all suddenly become stone-cold rational?

Appendix

Data Descriptions

Indices, data from Bloomberg, descriptions per S&P Dow Jones Indices LLC.:

- Dow Jones U.S. Relative Value Total Return Index (DJTLSVT): designed to measure the performance of 200 companies ranked as undervalued based on fundamentals. Value is calculated using a ranking process based on book value to price ratio, projected earnings per share to price ratio, and trailing 12-month operating cash flow to price ratio.

- Dow Jones U.S. Short Relative Value Total Return Index (DJTSSVT): designed to measure the performance of 200 companies ranked as overvalued based on fundamentals. Value is calculated using a ranking process based on book value to price ratio, projected earnings per share to price ratio, and trailing 12-month operating cash flow to price ratio.

- Dow Jones U.S. High Momentum Total Return Index (DJTLMOT): designed to measure the performance of 200 companies ranked as having the highest momentum. Momentum is calculated by ranking stocks by their 12-month historical total return, starting one month prior to reconstitution.

- Dow Jones U.S. Low Momentum Total Return Index (DJTSMOT): designed to measure the performance of 200 companies ranked as having the lowest momentum. Momentum is calculated by ranking stocks by their 12-month historical total return, starting one month prior to reconstitution.

- Dow Jones U.S. Thematic Long Quality Total Return Index (DJTLQUT): designed to measure the performance of 200 companies ranked as higher quality based on fundamentals. Quality is calculated using a ranking process based on the trailing 12-month return on equity and debt-to-equity ratio.

- Dow Jones U.S. Thematic Short Quality Total Return Index (DJTSQUT): designed to measure the performance of 200 companies ranked as lower quality based on fundamentals. Quality is calculated using a ranking process based on the trailing 12-month return on equity and the debt-to-equity ratio.

- Dow Jones U.S. Low Beta Total Return Index (DJTLABT): designed to measure the performance of 200 companies ranked as having the lowest beta. Beta is calculated using weekly returns for the previous 52 weeks.

- Dow Jones U.S. High Beta Total Return Index (DJTSABT): designed to measure the performance of 200 companies ranked as having the highest beta. Beta is calculated using weekly returns for the previous 52 weeks.

Global 60/40 Expected Real Return:

Source: AQR, Bloomberg, DataStream, MSCI, Consensus Economics.

Earnings data through 6/30/2020. Global 60/40 Expected Real Return is a combination of the Global Equity Real Yield (60%) and Global 10Y Bond Real Yield (40%), rebalanced monthly.

The Global Equity Real Yield is a simple average of two measures: (0.5 * CAEY * 1.075) + 1.5% and D/P + 1.5%, where CAEY and D/P are cyclically-adjusted earnings yield and dividend/price, respectively. CAEY is an inflation-adjusted ratio of the rolling 10-year average of earnings divided by price. Earnings and price data sourced from MSCI. Inflation adjustment based on CPI data sourced from DataStream. The 1.5% term is assumed long term real earnings per share (EPS) growth. The 0.5 multiplier reflects the long-term payout ratio. The 1.075 multiplier accounts for EPS growth during the 10-year earnings window. Universe represented by the MSCI World Index.

Global 10Y Bond Real Yield is represented by a GDP-weighted average of inflation-adjusted 10Y government bond yields. Government bond yields sourced from Bloomberg (from October 30, 1997 – Present) and DataStream (prior to October 30, 1997). Long-term inflation expectations sourced from Consensus Economics. GDP data sourced from DataStream. Universe represented by the MSCI World Index.

Global Value Spread:

Source: AQR, CRSP, XPressFeed, IBES.

Spreads are constructed using a hypothetical value portfolio. This portfolio combines four factors: book-to-price (B/P), earnings-to-price (E/P), forecast earnings-to-price (FE/P) and sales-to-enterprise-value (S/EV), at weights of a third, a sixth, a sixth and a third respectively (the idea being to assign equal weight to book value, earnings, and sales, and the earnings raw weights are lower as they're really two correlated versions of the same idea). Each of these four value measures is adjusted for cash and short-term investments, and each factor is built to be industry neutral and dollar-neutral, but not necessarily beta-neutral, by using within-industry value scores. The industry classification is based on MSCI GICS industry codes. Stocks are weighted proportionately to these value scores. The universe is a liquid universe of large- and mid-cap stocks roughly equivalent to the MSCI World.

This spread is computed as a ratio using the same four value measures: B/P, E/P, FE/P and S/EP. We take the z-scores of each series and then take the weighted average across the four measures to form the composite value spread. The final spread is reported as a z-score.

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