

Never, Ever has Value been Cheaper

Compared to what? Growth. Says who? AQR's Cliff Asness. This is obviously not our first Worth Sharing on whether the Value Factor is broken, and as much as we would prefer that it be our last, hope does not spring eternal at HCM. Rather, we return to our favorite Damon Runyon quote, **“The race is not always to the swift, nor the battle to the strong, but that's the way to bet.”** Even after our substantial editing this analysis is a long read. The original is here: <https://www.aqr.com/Insights/Perspectives/Is-Systematic-Value-Investing-Dead>

Is (Systematic) Value Investing Dead?

May 8, 2020

No it's not. Quite the opposite. I didn't want to keep you in suspense. Now for some detail.

My colleagues have written a [great paper](#) (IMHUO) examining the issue (and sharing this blog's title). It goes without saying that we have a horse in this race (OK, we have a whole team of horses in this race). But I do hope you'll read their work and agree that the questions were asked and answered fairly. Their answer is frankly not surprising for a strategy that's "worked" through the 1920s – when a lot of stocks were railroads, steel, and steamship companies – through the Great Depression, WWII, the 1950s – which included some small technological changes like rural electrification, the space race and all the technology that it spanned – the internet age (remember these same stories for why value was broken back in 1999-2000?) Value certainly doesn't depend on technological advancement being stagnant! But in a time when it's failed for quite a while (again, that just happens sometimes even if it's as good as we realistically think it is), it's natural and proper that all the old questions get asked again. Is now different? For instance, are the accounting measures we use to measure value not capturing the fact that we are now living in an era when a handful of "global winners" are able to capture excess monopoly rents? Are too many people now aware of the strategy for it to work going forward? Might overreliance on the price-to-book factor, and the oft-alleged inadequacy of that factor for today's world, be the issue? These are quite common criticisms of value strategies today.

Besides just an inherent discomfort with randomness, part of the issue is confusion about why value works at all. It does not depend on getting big events or trends right. It does not depend on having perfect accounting information. Certainly, it does not require a lack of massive technological change over time. No matter what the situation, it simply needs investors to not overreact. Companies that are cheap need to tend to be a bit too cheap for whatever set of facts exists at that time, and expensive companies need to tend to be a bit too expensive. For instance, it's OK if there's more monopoly power for a few firms today than before (or any other thing being different this time), as long as humans will still tend to overdo estimates of how powerful and long-lasting those monopolies will be, and vice versa for cheap stocks that lack these advantages. We see no evidence that humans are now much more rational and less error-prone than they used to be. Furthermore, the systematic version of value almost always relies on extreme diversification. Therefore, stories that apply to a handful of stocks start out unlikely to be driving the overall factor performance or the cheapness of the factor we see today. But that is exactly what we need to prove or disprove below.

My colleagues' paper goes into great detail on these issues and, again, I really hope you read it. I can't add much directly to what they've already done. But I can do, if anything, a simpler, more brute-force experiment that I think is quite illuminating. This experiment constructs the classic Fama-French HML value factor (using the much maligned price-to-book factor) and then starts tweaking it – both in the direction of getting closer to

the way many of us quants actually implement it (e.g., using multiple measures not just price-to-book, and moving past just capitalization weighting), and then, the real meat of this post, systematically dropping stocks in a variety of ways. The stocks dropped will be ones that best fit the stories for why value is unable to be measured today like it was in the past. For each of these tests I report the historical value spread through time (which we [originated](#) way back in the stone age of 1999 when we went through round one, for us, of “value has been terrible and will never work again because everything is different now”).

Part 1: Simple Academic Value Portfolios

A. Value Spreads Using Price-to-Book

Let’s start with the very basics. Below is a chart of the value spread (the ratio of how “expensive” expensive stocks are vs. cheap stocks – a chart we sometimes call “the value of value”). ... These value spread analyses require decisions both on which value factor is used and how its attractiveness is measured. The simplest choice, and the one that aligns best with the academic and practitioner literature, is to use price-to-book sorting (the HML factor) and to evaluate it with a matching value spread based on price-to-book. This is indeed what I show in many of the charts below, but the tables will also report value spreads using multiple value measures for these price-to-book sorted portfolios. The idea is to stay reasonably consistent with the literature but also to check that price-to-book is not driving the bus In Figure 1, following Fama and French, I use the whole U.S. stock universe and do not exclude industries nor neutralize industry exposures.

Figure 1

Price-to-Book Spread, Academic Style

December 31, 1967 – March 31, 2020



So the expensive stocks are sometimes only <4x as expensive as the cheap stocks, the median is that they are 5.4x more expensive, but today they are almost 12x more expensive. For those first-time listeners, 12x is a lot! Here are some stats we’ll use repeatedly. It is now (March 31, 2020) at the 100th percentile vs. the 50+ years of history we have. Another stat I like to examine is the amount the current reading is over median, divided by the maximum ever reading over median. This complements the percentile as it includes magnitude. Sometimes the 97th percentile is pretty close to the maximum ever, sometimes it’s further away. Here, again obviously, this measure is now at 100% (when you’re at the 100th percentile there is no difference in these measures). Finally,

while it's a somewhat flawed statistic for an autocorrelated and somewhat skewed series, I'll report the standard deviation event (STD) of the final reading largely to compare across our various tests. Here it's +4.5.

So it's wide. Really, really wide. Who cares? Many criticize value, and in particular price-to-book as a way to measure value, arguing that it's no longer relevant today and therefore neither is this spread. Some of these arguments are that the strongest firms today have higher intangible value than in the past, something perhaps not captured in book value, and the related argument that the best firms have far more monopoly power today than in the past. That is, it's a global "winner-take-all" world and value measures just don't apply anymore. Some also argue that the flows into index funds have driven the biggest, most expensive names up wildly. This argument also implies this trend is just getting started and it's easy to predict it continues so the value spreads we report are going to infinity (otherwise it's just an explanation how value got cheap, not for why it's unattractive going forward).

B. Value Spreads Using Other Measures Tell Us Pretty Much the Same Thing

In order to address these critiques, step one is just to look at other measures besides price-to-book. We're going to continue with the Fama-French HML portfolio construction methodology (creating portfolios by sorting on price-to-book), but we're going to calculate its cheapness today and through time using some additional measures. I examine three others. One is price-to-sales. ... The next two are one-year trailing and one-year forecasted price-to-earnings ratios. Table 1 shows the statistics ... and adds them for these other three measures, as well as a composite of all four (note again, each time the sort is on price-to-book, what's different in each row is reporting the value spread of this portfolio using different measures).

Table 1

Various Value Spreads, Academic Style

December 31, 1967 – March 31, 2020*

Value Spread Measure	Current Percentile	(Current – Median) / (Max – Median)	Current STD Event
Price-to-Book	100%	100%	+4.5
Price-to-Sales	83%	21%	+0.7
Price-to-earnings (trailing)	100%	100%	+4.7
Price-to-earnings (forecast)	99%	82%	+3.9
Composite	100%	92%	+4.3

* Forecasted Price-to-Earnings starts January 31, 1976.

With the exception of price-to-sales ... things look pretty darn cheap no matter how we measure them (and even price-to-sales is 83rd percentile – not dirt cheap but not too shabby ...).

C. Excluding Certain Stocks Doesn't Change the Story

Using measures other than price-to-book should help a lot if price-to-book is flawed. But we can do better. Now we are going to systematically throw out stocks based on a variety of criteria. For instance, today we would like to examine the value spread versus history if you didn't include the likes of, say, Amazon, Apple, Facebook, Google, Microsoft, Netflix, or Tesla (MAGFANT). But we can't throw just those, and only those, out today as it's arbitrary and causes an apples-to-oranges problem when comparing to the past. We need to find systematic

ways of tossing stocks we worry might be hard to value today that we can apply consistently over the whole 50+ years. I try three (and mention some others in the footnotes).

Systematically Exclude Some Industries

First let's toss out the tech, telecom, and media industries. Note again we're not just tossing out tech today but from the whole value spread history from 1967-2020. Figure 2 shows this value spread using price-to-book (to create the portfolios and to measure the price of the expensive divided by the cheap) and always through time excluding these industries:

Figure 2

Price-to-Book Spread, Academic Style, Excluding Technology, Media and Telecom Stocks

December 31, 1967 – March 31, 2020



Note some intuitive features of this graph. Throwing out the tech (and telecom/media) industries reduces the overall median value spread a tiny bit (from 5.4 to 5.3) as tech has averaged expensive. But tech is not driving the extreme valuations today vs. the past. On price-to-book, today is still near the 100th percentile (I usually round but here I have to note it's the 99.8th percentile). Its current deviation over median is 91% of the maximum deviation over median (that maximum occurred near the end of the GFC). The composite of all four measures is even more extreme. Using all four valuation measures to judge this ex-tech HML spread, we're at the 100th percentile (so also the maximum deviation over median ever). Thus, we think price-to-book actually slightly understates the case!

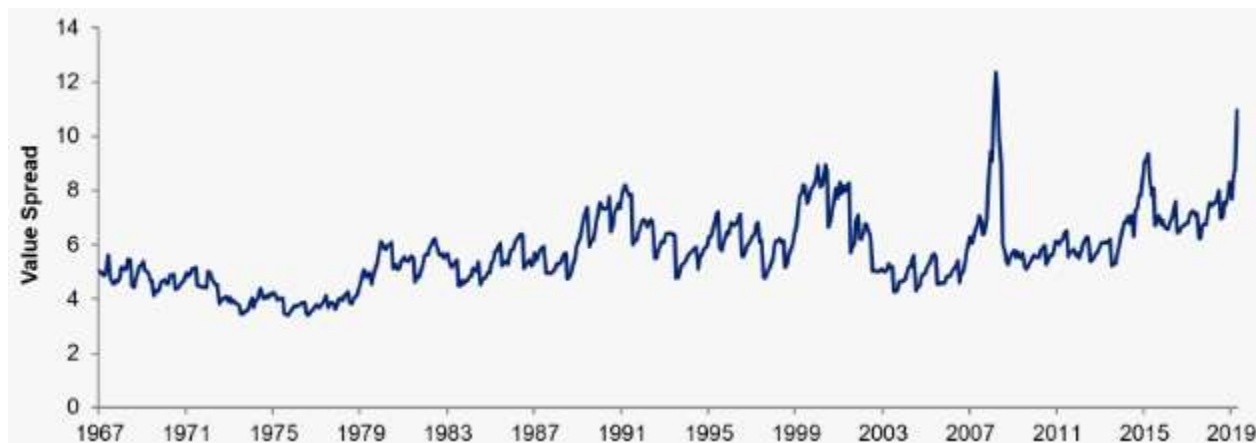
Systematically Exclude Mega-Caps

Now let's drop the mega-caps, perhaps an even more direct way of getting at where the monopoly power of "winners who take all" resides. In this exercise I drop the top 5% of our universe by market value of equity. For perspective, today this excludes all of the seven stocks in our MAGFANT list (that is, all seven are absolutely not a part of the final point in the graph below):

Figure 3

Price-to-Book Spread, Academic Style, Excluding the 5% Largest Stocks

December 31, 1967 – March 31, 2020



This exclusion has a bit more bite – but only a tiny bit. The current reading of the price-to-book spread still rounds to the 100th percentile (it’s 99.6th) and is 79% of the maximum achieved during the GFC. Using the composite of the four measures, it’s just about the same percentile (though actually it’s up to 87% of the maximum cheapness versus median – as again it’s not price-to-book driving this finding, it’s even holding it back slightly). Even if we never allowed trading in the largest 5% of stocks, something that eliminates the stocks today most often discussed as a problem for the value strategy, today’s valuation spread would still compare exceptionally favorably to history. Later we will see that excluding mega-caps has even less bite when we get closer to how most quants actually implement (I’ve started with the academic version of value that’s least like what many quants like us actually do and actually, while super cheap, is generally not as cheap as the more realistic measures to come.) ...

Part 2: Simple Within-Industry Value Portfolios

A. Value Spreads Using Price-to-Book

Now, let’s get even more realistic, with realistic meaning how AQR – and we presume many but not all other quants, particularly those trading long and short – really creates portfolios. Let’s create an HML factor that ranks stocks on how their price-to-book compares to their own industry, not to the whole marketplace. That is, it’s industry-neutral HML, balanced long and short within each industry.²⁶ Figure 5 shows the price of the expensive divided by the price of the cheap through time.

Figure 5

Price-to-Book Spread, Academic Style, Industry Neutral

December 31, 1967 – March 31, 2020



I know this is getting a little boring but, yes, value (the spread in value between cheap and expensive – the absolute value of value stocks is another topic for another time) is really exceptionally cheap today. It's rounding to the 100th percentile and is 98% of the way toward the maximum over median.

B. Value Spreads Using Other Measures Tell Us Pretty Much the Same Thing

Now, let's look at all four measures (i.e., not just price-to-book) for this same industry-neutral portfolio:

Table 2

Various Value Spreads, Academic Style, Industry-Neutral

December 31, 1967 – March 31, 2020*

Value Spread Measure	Current Percentile	(Max – Median)	Current STD Event
Price-to-Book	100%	98%**	+4.0
Price-to-Sales	99%	71%	+2.8
Price-to-earnings (trailing)	100%	88%	+4.1
Price-to-earnings (forecast)	100%	100%	+6.8***
Composite	100%	100%	+5.0

* Forecasted Price-to-Earnings starts January 31, 1976.

** You see 100th percentile but only 98% of maximum above median because it wasn't really quite the 100th percentile, it just rounded to that.

*** The forecasted price-to-earnings spread also really exploded today when measured intra-industry. That very well might be 100% correct – and directionally all the valuation spreads shoot up recently so again the direction is likely spot on – though I do worry that some of it may be due to asynchronous updating of future earnings estimates during the COVID-19 crisis (that would be coincidental as I can't see why this would systematically happen faster for expensive than cheap stocks within the same industry, but it's certainly possible). Our results are not at all dominated by this one of four measures, so I mention this only for completeness.

The biggest difference is in price-to-sales which, when measured allowing big industry bets (i.e., Table 1, which follows Fama and French), was 83rd percentile but only 21% of the way to maximum over median valuation. Price-to-sales is now 99th percentile and at 71% of maximum. Remember, we included it earlier for consistency, but price-to-sales is not a measure that we think is very meaningful for comparing across

industries. We do think it's meaningful for comparisons within industries as we're doing here. When we measure it in this more meaningful way, its spread is also very high today. The composite spread of all four measures is now at a clear maximum over 50+ years.

C. Excluding Certain Stocks Doesn't Change the Story

You know what comes next, right? We're going to again start removing stocks systematically, this time from this "industry-neutral" version of the value spread, to check again if some of the "world has changed" theories may be driving the current super-cheapness of the value strategy. Here I only report the stats for the composite of the four valuation measures as of 3/31/2020 while consistently removing some stocks through time according to three different rules (so, to back up, this is judging our "no betting on industries" HML based on the composite of the four valuation measures we've been studying under different and consistent rules for removing certain types of stocks):

Table 3

Composite Value Spreads, Academic Style, Industry-Neutral

December 31, 1967 – March 31, 2020*

What's Removed?	Current Percentile	(Current – Median) / (Max – Median)	Current STD Event
Nothing Removed	100%	100%	+5.0
Remove Tech / Telecom / Media Industries	100%	100%	+5.4
Remove 5% Mega-Caps**	100%	100%	+5.6
Remove 10% Most Expensive Stocks***	100%	100%	+4.3

* Forecasted Price-to-Earnings starts January 31, 1976.

** If instead we remove the 10% highest sales (instead of market-capitalization) stocks within each industry you get 100%/100%/+5.0. Dominating sales in your industry is possibly a better measure of the monopoly effects many worry about. Yet it changes nothing.

*** For removing the 5% mega-caps and 10% most expensive stocks we do it within each industry here. If the industry contains so few stocks that 5% or 10% doesn't round to at least 1 stock, we still remove the largest cap or most expensive single stock.

Yes, I know, this is perhaps the most boring table ever. But that's kind of the point. Comparing apples-to-apples within industries, and not relying just on price-to-book but on four well-established valuation measures, we are currently clearly the cheapest ever – and this result is completely bullet-proof to all the methods of consistently removing extremes I have tried (and I've tried a lot!). What we're trying to do is find methods that capture the idea of some companies being monopolistic or "winner-take-all companies" who are creating new technologies and disruptive businesses and just consistently throw them out of the sample. The results show that they are not what is driving the extreme value spreads that we see today in the systematic value strategy, and it's not really a close call. ...

Part 3: As Realistic as We're Going to Get Here

A. Value Spreads Using Price-to-Book

OK, one last method. While switching to intra-industry to get more realistic (and to make price-to-sales make more sense), I have still stuck to the Fama-French HML methodology of cap-weighting and using an all-cap universe (cap-weighting within industry but equal-weight across industries). To get even closer (but not all the way) to how many real-world quants would trade a long-short portfolio, we look next at equal weight, not cap-

weight, but only among the top 1000 stocks (still intra-industry). Once you go to equal weight you really can't consider small stocks and have a vaguely implementable portfolio.

Done this way, here's the graph of the price-to-book of the expensive divided by the cheap portfolio over the last 50+ years

Figure 8

Price-to-Book Spread, Equal-Weighted Top 1000 Stocks, Industry-Neutral

December 31, 1967 – March 31, 2020



Yes, as we get more realistic, today starts to look more and more extreme versus history. The value sell off in 1Q2020 during the COVID-19 crisis has kicked it up to a whole new level (and value looked very cheap before that). The final reading (3/31/2020) minus the median is 36% higher than the prior GFC maximum.³⁶ But, again that's just price-to-book. You know what's next by now...

B. Value Spreads Using Other Measures Tell Us Pretty Much the Same Thing (Again)

You want to see how the other measures besides price-to-book stack up today using this methodology, right?

Table 4

Various Value Spreads, Equal-Weighted Top 1000 Stocks, Industry-Neutral

December 31, 1967 – March 31, 2020*

Value Spread Measure	Current Percentile	(Current – Median) / (Max – Median)	Current STD Event
Price-to-Book	100%	100%	+4.2
Price-to-Sales	99%	75%	+2.7
Price-to-earnings (trailing)	100%	100%	+3.1
Price-to-earnings (forecast)	100%	100%	+5.5
Composite**	100%	100%	+5.0

Note: Using only the largest 1000 US stocks.

* Forecasted Price-to-Earnings starts January 31, 1976.

** And if, like me, you have a nagging worry the forecasted price-to-earnings results are a bit too good to be true (directionally right but showing value too cheap as perhaps some, but not all, forecasts have been updated for the COVID-19 crisis) so you look at a composite over only the other three measures, we're at 100th percentile, 100% of maximum deviation, and a +4.4 standard deviation event.

Only price-to-sales is not at the absolute maximum and even it is very, very cheap. The composite is at a clear maximum (and is a whopping 66% higher than the previous maximum!).

C. Excluding Certain Stocks Doesn't Change the Story (Again)

Now, only looking at the composite measure, but doing our standard removals but applied to this latest and most realistic methodology, you get the following comparing the composite of the four valuation measures today versus 50+ years of history:

Table 5

Composite Value Spreads, Equal-Weighted Top 1000 Stocks, Industry-Neutral*

December 31, 1967 – March 31, 2020**

What's Removed?	Current Percentile	(Current – Median) / (Max – Median)	Current STD Event
Nothing Removed	100%	100%	+5.0
Remove Tech / Telecom / Media Industries	100%	100%	+5.1
Remove 5% Mega-Caps***	100%	100%	+5.4
Remove 10% Most Expensive Stocks	100%	100%	+5.0

* Composite value spread uses four signals: Price-to-Book, Price-to-Sales, Price-to-Earnings (trailing), and Price-to-Earnings (forecasted). This portfolio is industry-neutral and equal-weighted using the largest 1000 US stocks.

* Forecasted Price-to-Earnings starts January 31, 1976.

*** Reported here is the composite over all four measures. If we remove the mega-caps within each industry and do the composite over the other three measures excluding forecasted price-to-earnings you get, oh you know, 100%, 100%, +4.7 STD.

Obviously, excluding all the potential bad boys we can think of changes absolutely nothing (unless you consider a +5.0 possibly going to +5.4 important). The mispricings are too ubiquitous and diversification too great for these stories to hold any water. ...

E. Cheap Companies Don't Look Particularly "Cheap for a Good Reason" Either

OK, just one more thing (I promise). Perhaps the cheap companies, while truly super cheap on any measure or methodology and the absolute cheapest on the most realistic measures, simply deserve to be. Maybe the cheap companies are just far lousier versus the expensive companies than usual. I look at three things here for this final top 1000 intra-industry price-to-book sort (there are many others that can be explored but this result is quite robust). One, following Novy-Marx, is the [gross profitability](#) of the cheap minus expensive portfolios. Two is the return-on-assets (ROA) of the cheap minus expensive portfolios. Three is the leverage (debt-to-equity) ratios of the cheap and expensive portfolios. I do this using the same most realistic (for us) final methodology as just above (top 1000 stocks, equally weighted portfolios, intra-industry). For profitability and ROA I take differences (i.e., the gross profitability of the cheap minus the expensive) and for leverage I take ratios (the debt-to-equity of the cheap divided by that of the expensive).

Figure 10 plots the gross profitability of the cheap portfolio minus the gross profitability of the expensive portfolio (and the same for ROA):

Figure 10

Gross Profitability and Return-on-Assets Spreads, Equal-Weighted Top 1000 Stocks, Industry-Neutral, Price-to-Book Sort

December 31, 1967 – March 31, 2020



The median difference of the gross profitability of the cheap minus the gross profitability of the expensive portfolio is -14% over the last 50+ years (the cheap portfolio's median gross profitability is 27% vs. 41% for the expensive portfolio). This makes sense. Value is a great long-term strategy (again, IMHUO), but you do usually end up purchasing stocks that are in worse current shape. Even value enthusiasts rarely argue that value stocks are currently better companies, but rather—I think—most value investors would say they are often worse companies selling at even lower prices than their worseness justifies (sorry about “worseness”). So, what's the difference in gross profitability today? Well, it's -14%, almost precisely at median (52nd percentile, if you must know). For ROA (adjusted for interest expense) the median difference over the 50+ years in cheap versus expensive stocks is -5%. The current difference is -4% which is actually the 85th percentile, so on this measure cheap stocks look better than they normally do (though -4% vs. -5%, even if 85th percentile, is not a very big advantage economically). Basically, systematic profitability differences are simply not driving today's super-wide valuation differences.

Next, the ratio of the debt-to-equity (book value of equity) of the cheap to the expensive portfolio has a historical median value of 81% (the cheap are somewhat less levered on this measure on average). So, how does today compare to history? Today, debt-to-book-equity (of the cheap divided by the expensive) stands at 66%, substantially below the 81% median value (that's 28th percentile based on 50+ years of history). Cheap stocks are less leveraged than expensive ones in the absolute and versus this average historical tendency. Putting all of this together, neither profitability nor leverage differences look particularly bad for cheap stocks today and clearly do not explain or justify today's super-wide value spreads (or make cheap stocks look particularly scary versus history). In fact, it's a bit (only a bit) of the opposite.

OK, I started out saying we have a horse in this race, and now I've beaten it well past death...

Summary

Value is exceptionally cheap today, and it gets cheaper (and becomes clearly the cheapest ever) the closer our analysis gets to realistic implementations. Measured in the most realistic way (for us) neither tech bubble nor

the GFC can lay claim to the cheapest “value of value” anymore. Sadly, looking back, and wonderfully (yes IMHUO) going forward, today has that honor.

As my [colleagues show](#) with both data and economic argument, this is very unlikely to be the result of common “the world has changed” arguments that you often hear today – and, frankly, you always hear such stories about whatever strategy has been going through very tough times. There is a cottage industry in explaining ex post (rarely ex ante) why a strategy going through a lot of pain is now permanently broken.

I show what my colleagues show but in a different, more brute-force but perhaps even clearer way, and come to the same strong conclusion. Value is super cheap today and this is not coming from only the potentially “broken” price-to-book measure (it isn’t even very dependent on it) nor is it due to a group of winner-take-all monopolistic companies. It is not coming exclusively from the tech industries, it is not coming from mega-caps, and it is not coming from the most expensive stocks. Rather it is a pervasive phenomenon. Investors are simply paying way more than usual for the stocks they love versus the ones they hate (and measured using our most realistic implementation this is the clear maximum they’ve ever paid) and doing it in a highly diversified way up and down the cross-section of stocks.

Might investors be right for a reason my colleagues don’t capture in the many things they look at and I don’t capture by excluding some industries, the huge stocks, or the most expensive stocks? Might the explanation lie somewhere other than big differences today in leverage or profitability for expensive versus cheap stocks as compared to history (because I show that these are not big today versus history)? Sure. ... But ... we will take the other side! I mean, you don’t need Occam’s razor here to prefer the simplest explanation – that there’s a very large mispricing going on right now throughout the cross-section of stocks – you just need Occam’s butter knife.

Of course, none of the above answers the always vexing question of when. If value investing was like driving my four kids on a long car ride, we’d be very deep into the “are we there yet?” stage of the ride, and value investors are justifiably in a world of pain. Could we hit new highs in the value spread (and incur more losses for value) from here? Sure we could (we do think this gets increasingly unlikely as spreads widen more and more but sadly there’s certainly no provable limit). Regarding timing, could systematic value come back very quickly over say a few months, or slowly over a few years? We don’t know. Good investing isn’t about sure things and certainly rarely about precise timing. Sure things are usually about cheating, and if it’s not cheating it almost always gets arbitrated away really fast. Good investing is about being on the right side of the odds and sticking with good strategies, if (a big “if” we have hopefully taken great strides to dispelling here), after careful examination, you are convinced they are not broken.

Having gone through this very bad 2+ years for multifactor stock selection portfolios with value the primary culprit, it is essential that we challenge ourselves to review various proposed explanations for value’s losses. My colleagues do that in their paper. Likewise, I do it here looking hard at many variants of the value spread designed to capture the most widespread critiques (if you’ve finished this, you are rolling your eyes at me merely saying “many variants” as I think I shot past “many” a while ago!) in particular whether the cheapness of value investing is caused by some narrow super-company subset of the market or deep inadequacies in the popular price-to-book measure, as many of the stories imply. After extensive, exhaustive and exhausting examination, we find absolutely zero support for this worry.

We think the medium-term odds are now, rather dramatically, on the side of value, with no “this time is different” explanation we can find (and we’ve tested a lot of them!) holding a drop of water and no other period

in the 50+ year history matching today. It has certainly been excruciating getting here, but here we are, and it's never looked cheaper looking forward.

This is where long-term investors make their bones.

Appendix

Data Information

Earlier Data Sources: AQR, XpressFeed, IBES. Pricing and accounting data are from the union of the CRSP tape and the Compustat/XpressFeed Global database. The universe is all available common stocks in the merged CRSP/XpressFeed data.

The academic HML approach ("HML Devil") in this article uses a book-to-price factor built over a U.S. all-cap universe that combines the NYSE, AMEX and NASDAQ. It is similar to the Fama-French HML factor, except that up-to-date prices are used. The raw version of the factor ranks stocks over the entire universe. The intra-industry version ranks stocks within industries only so as to take no industry bets, whereas the inter-industry version ranks only industries. The "Equal Weight" versions use only the largest 1000 stocks in the universe. The industry classification is based on SIC (Standard Industrial Classification) codes before 1986 and MSCI GICS (Global Industry Classification Standard) codes after 1986. For intra-industry factors, we use the Fama-French 48 industries (which is based on SIC) before 1986 and GICS Group since 1986. The long side of each portfolio includes the best (cheapest) 30%, while the short side includes the worst (richest) 30%. The long and short sides are market-cap weighted, unless specified otherwise (i.e., when they are equal-weighted). The value spread uses the book-to-price of these book-to-price portfolios, unless specified otherwise (e.g., when it uses Price-to-Sales, Price-to-Earnings (trailing), and Price-to-Earnings (forecast)). The "Composite" approach is constructed by 1) dividing each series (namely Book-to-Price, Price-to-Sales, Price-to-Earnings (trailing), and Price-to-Earnings (forecast)) by its in-sample median, then 2) equal-weighting the four series. (Dividing by the median first is to avoid the measure with the largest magnitude driving the average).

We have previously shared our concerns about Book Value as a valuation metric, and our strong preference for combining the Size and Value Factors. The historic undervaluation of Value is even more pronounced among Small-Caps. From Verdad's Dan Rasmussen on 5/4:

An Apology for Small-Cap Value

"If we are intended for great ends, we are called to great hazards."

The Fama-French Small Value Index fell over 41% this quarter, the worst quarterly performance on record (with the record extending back to 1926). This sharp drawdown makes this the worst 10-year run for small value stocks since the Great Depression. Below, we show the trailing returns of the Fama-French small value index and the S&P 500.

Figure 1: Fama-French Small Value vs. the S&P 500

	Q1 2020	3 Years	5 Years	10 Years	25 Years	50 Years
Fama-French Small Value	-41.5%	-13.7%	-4.8%	3.6%	10.0%	13.6%
S&P 500	-19.6%	5.1%	6.7%	10.5%	8.9%	10.1%

Source: Ken French Data Library, CapitalIQ

Indices have no tongues. But perhaps we can speak for the index and provide an apology for small-cap value investing. We offer an apology not in the primary sense of a regretful acknowledgment of an offense but rather in the classical sense of a reasoned defense of a position, though we perhaps feel the need for the former as much as any believer and advocate of small value.

We feel that small value deserves such an apology because, though the past few years have been painful for small-value investors, this is perhaps a once-in-a-century buying opportunity in this deeply out-of-favor asset class.

Today, the two biggest statistical predictors of future small value returns are at some of their highest readings ever on record. High-yield spreads are at 2009 levels while the growth/value price ratios are at 1999 levels—an extremely rare “double eclipse” for market historians. We will explore both the high-yield spread and the growth/value ratio and where these two metrics place us today relative to history.

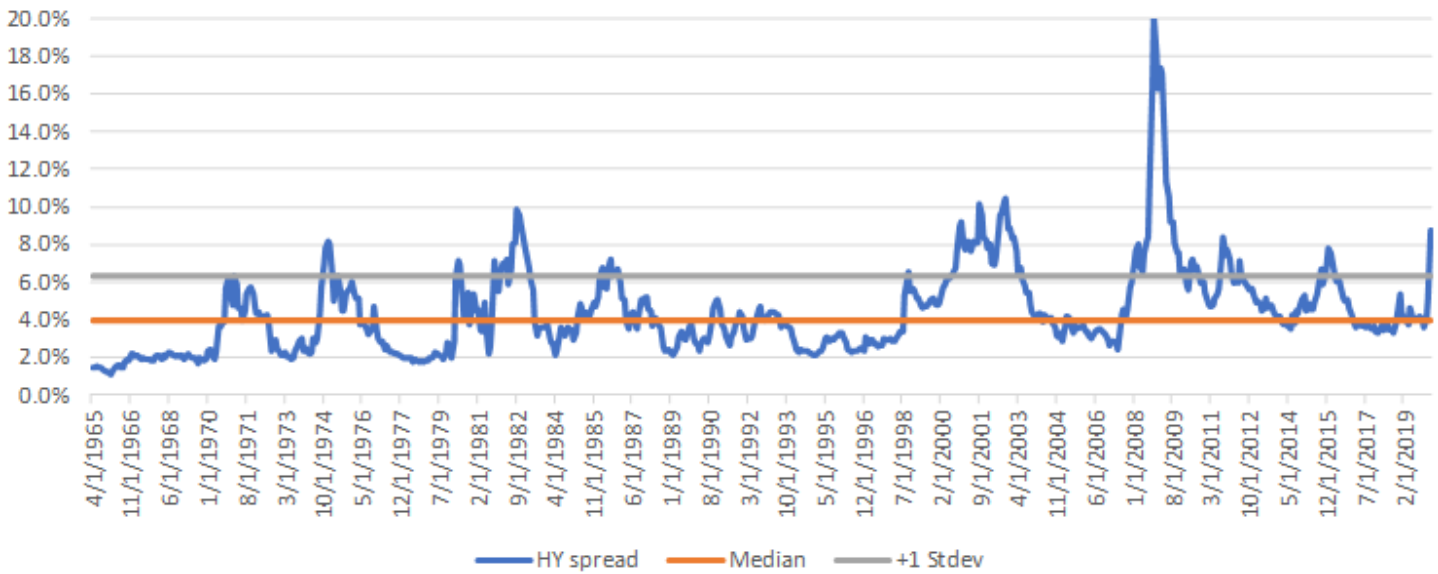
High-Yield Spreads

The high-yield spread is a gauge for monitoring market sentiment for small and micro-cap companies because it combines real-world economic consequences and the temperature of the market. This economic indicator measures the spread between the borrowing rate for below-investment-grade bonds and the corresponding safe interest rate. When the high-yield spread rises, it reflects higher borrowing costs for smaller, less-creditworthy business. This is a real economic cost which impacts decisions. Additionally, the spread measures the market’s confidence in the performance of these same businesses and the associated cost required in compensation for the risk of investing.

Last quarter also saw high-yield spreads jump 520bps to 880bps, a level last seen in September 2009. We shared with you in early 2018 a study of the performance of small value stocks relative to the high-yield spread from 1965 to 2018. We found a predictable relationship. When the high-yield spread spikes, investors tend to flee from small value equities, scared that these companies will be unable to refinance their debt and that the risk of bankruptcy is significantly higher than they anticipated.

With spreads rising to levels last seen in the 2008 financial crisis, this is a once-in-a-decade occurrence in the long-term historical data. Below we show the high-yield spread since 1965 relative to the long-term median and standard deviation.

Figure 2: High-Yield Spread Since 1965



Source: FRED, Verdad research

Small value performed as expected this quarter, given the sharp spike in the high-yield spread from 3.6% to 8.8%. But as we wrote in 2018, “the recoveries from these drawdowns have been as fast as the drawdowns were painful.” Below, we show the one-year forward returns for small-cap value and the S&P 500 based on the high-yield spread. For small value, we show the returns of the smallest and cheapest 10th percentile, 20th percentile, and one third of all US stocks compared to the S&P 500.

Figure 3: High-Yield Spreads vs. Small-Value Equity Returns

HY Spread	10th	20th	33rd	S&P 500
<4%	15%	15%	14%	10%
4-6%	16%	16%	16%	12%
>6%	35%	33%	27%	13%
>8%	48%	42%	32%	13%

Source: Ken French Data Library, Capital IQ

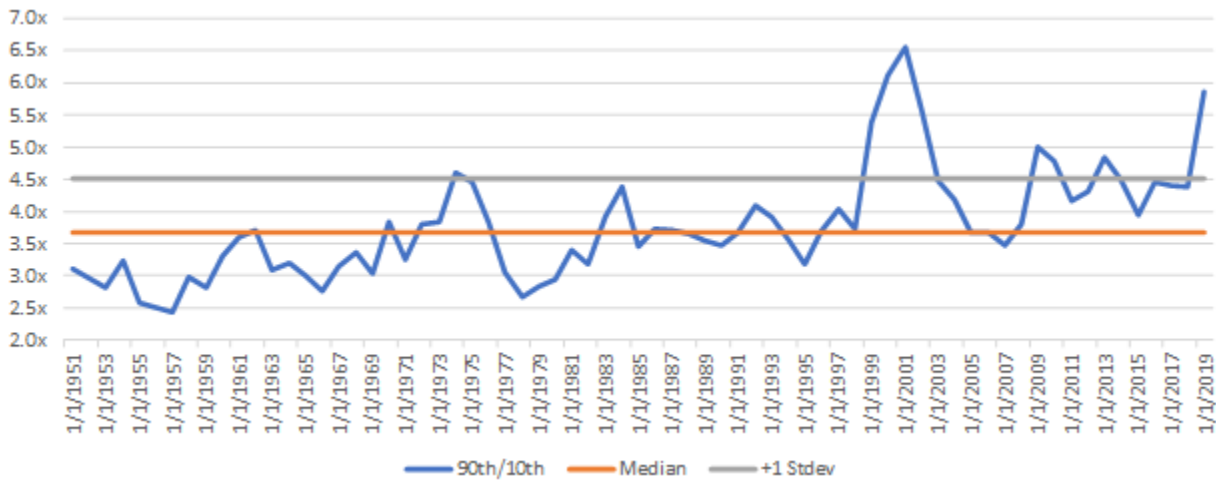
We saw this type of performance even in the past decade when small-value generally performed very poorly. When spreads normalized after the eurozone debt crisis, small-cap value returned 70% from 2011-2013 vs. 54% for the S&P 500. And in 2016 when spreads normalized after the energy price collapse, small-cap value returned 36% in 2016 vs. 12% for the S&P 500.

The Growth/Value Ratio

The recent spike in high-yield spreads has not been the only headwind to small-value performance, however. Another gale-force wind has been blowing: an extreme divergence in the valuations of growth and value stocks,

with investors increasingly prizing growth stocks while abhorring value stocks. Below, we chart the ratio of the free cash flow yield of the cheapest 10% of stocks relative to the most expensive 10% of stocks from 1951 to 2019.

Figure 4: Valuation Spreads, 1951–2019



Source: Ken French Data Library

The ratio of growth-to-value stocks went from moderately high at the end of 2015 to nearly three standard deviations above the long-term median today. Historically, these valuation ratios have been strongly mean-reverting. Below, we show the one-year forward returns for small-cap value and the S&P 500 based on the ratio of the free cash flow yield of the cheapest 10% of stocks to the most expensive 10% of stocks (i.e., how expensive growth was relative to value). Today, the cheapest 10% of stocks offers about 6x the free cash flow yield of the most expensive 10% of stocks, about the same as in 1999.

Figure 5: Valuation Spreads vs. Small-Value Equity Returns

FCF Spread	10th	20th	33rd	S&P 500
<3.5x	22%	23%	21%	14%
3.5-4.5	16%	15%	15%	13%
>4.5	29%	27%	23%	7%
>5.5	52%	41%	26%	-2%

Source: Ken French Data Library, Capital IQ

From 12/31/1999 to 12/31/2006, the smallest, cheapest decile of stocks returned a total return of 530% while the S&P 500 returned 8%. We are now at the 97th percentile of the historical data.

Conclusion

Getting to those levels over the past few years has been extremely painful for small-value investors. But as the famed apologist John Henry Newman wrote, “if we are intended for great ends, we are called to great hazards.”

We believe that when the recovery begins and the market turns (and maybe it already has), small-cap value is uniquely positioned to capitalize on perhaps a once- or twice-in-a-century convergence of opportunities.