Should I Stay or Should I Growth Now?

January 21st, 2020

Summary

- Naïve value factor portfolios have been in a drawdown since 2007.
- More thoughtful implementations performed well after 2008, with many continuing to generate excess returns versus the market through 2016.
- Since 2017, however, most value portfolios have experienced a steep drawdown in their relative performance, significantly underperforming glamour stocks and the market as a whole.
- Many investors are beginning to point to the relative fundamental attractiveness of value versus growth, arguing that value is well poised to out-perform going forward.
- In this research note, we aim to provide further data for the debate, constructing two different value indices (a style-box driven approach and a factor-driven approach) and measuring the relative attractiveness of fundamental measures versus both the market and growth stocks.

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"Should I stay or should I go now?

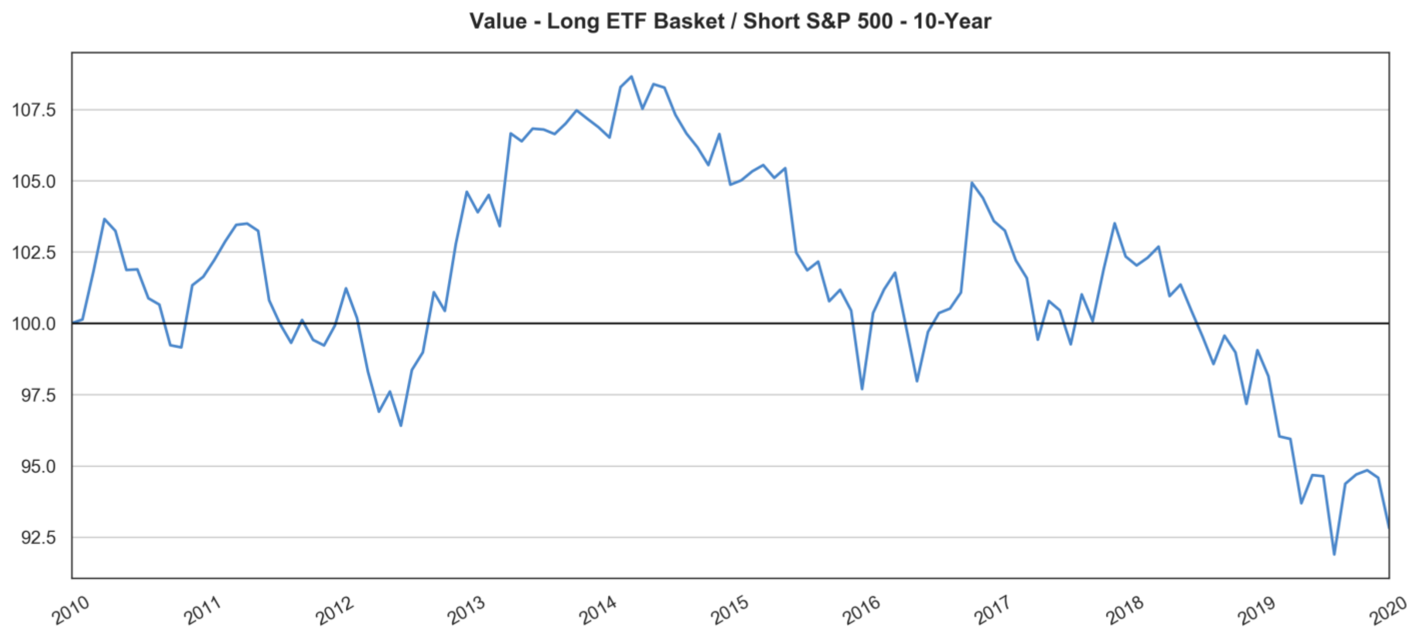
If I go, there will be trouble

And if I stay it will be double"

-- The Clash

It is no secret that quantitative value strategies have struggled as of late. Naïve sorts – like the Fama-French HML factor – peaked around 2007, but most quants would stick their noses up and say, "See? Craftsmanship matters." Composite metrics, industry-specific scoring, sector-neutral constraints, factor-neutral constraints, and quality screens all helped quantitative value investors stay in the game.

Even a basket of long-only value ETFs didn't peak against the S&P 500 until mid-2014.



Source: Sharadar. Calculations by Newfound Research. Past performance is not an indicator of future results. Performance is backtested and hypothetical. Performance figures are gross of all fees, including, but not limited to, manager fees, transaction costs, and taxes. Performance assumes the reinvestment of all distributions. The Value ETF basket is an equal-weight portfolio of FVAL, IWD, JVAL, OVLU, QVAL, RPV, VLU, and VLUE, with each ETF being included when it is first available. Performance of the long/short portfolio is calculated as the monthly return of the Value ETF Basket minus the monthly return of the S&P 500 ("SPY").

Many strategies were able to keep the mojo going until 2016 or so. But at that point, the wheels came off for just about everyone.

A decade of under-performance for the most naïve approaches and three-plus years of under-performance for some of the most thoughtful has many people asking, “is quantitative value an outdated idea? Should we throw in the towel and just buy growth?”

Of course, it should come as no surprise that many quantitative value managers are now clamoring that *this* is potentially the best time to invest in value since the dot-com bubble. “No pain, no premium,” as we like to say.

Nevertheless, the question of value’s attractiveness itself is muddied for a variety of reasons:

- How are we defining value?
- Are we talking about long/short factors or long-only implementations?
- Are we talking about the style-box definition or the factor definition of value?

By no means will this commentary be a comprehensive evaluation as to the attractiveness of Value, but we do hope to provide some more data for the debate.

Replicating Style-Box Growth and Value

If you want the details of how we are defining Growth and Value, read on. Otherwise, you can skip ahead to the next section.

Morningstar invented the style box back in the early 1990s. Originally, value was simply defined based upon price-to-book and price-to-earnings. But somewhere along the line, things changed. Not only was the definition of value expanded to include more metrics, but growth was given an explicit set of metrics to quantify it, as well.

The subtle difference here is rather than measuring cheap versus expensive, the new model more explicitly attempted to capture value versus growth. The problem – at least in my opinion – is that the model makes it such that the *growth-iest* fund is now the one that simultaneously ranks the highest on growth metrics and the lowest on value metrics. Similarly, the *value-iest* fund is the one that ranks the highest on value metrics and the lowest on growth metrics. So growth is growing but expensive and value is cheap but contracting.

The index providers took the same path Morningstar did. For example, while MSCI originally defined value and growth based only upon price-to-book, they later amended it to include not only other value metrics, but growth metrics as well. S&P Dow Jones and FTSE Russell follow this same general scheme. Which is all a bit asinine if you ask me.[1]

Nevertheless, it is relevant to the discussion as to whether value is attractive or not, as value defined by a style-box methodology can differ from value as defined by a factor methodology. Therefore, to dive under the hood, we created our own “Frankenstein’s style-box” by piecing together different components of S&P Dow Jones’, FTSE Russell’s, and MSCI’s methodologies.

- The parent universe is the S&P 500.

[1] To date, nobody has.

- Growth metrics are 3-year earnings-per-share growth, 3-year revenue-per-share growth, internal growth rate[2], and 12-month price momentum.[3]
- Value metrics are book-to-price[4], earnings-to-price[5], free-cash-flow-to-price, and sales-to-enterprise-value[6].
- Metrics are all winsorized at the 90th percentile.
- Z-scores for each Growth and Value metric are calculated using market-capitalization weighted means and standard deviations.
- An aggregate Growth and Value score is calculated for each security as the sum of the underlying style z-scores.

From this point, we basically follow MSCI's methodology. Each security is plotted onto a "style space" (see image below) and assigned value and growth inclusion factors based upon the region it falls into. These inclusion factors represent the proportion of a security's market cap that can be allocated to the Value or Growth index.

Securities are then sorted by their distance from the origin point. Starting with the securities that are furthest from the origin (i.e. those with more extreme style scores), market capitalizations are proportionally allocated to Value and Growth based upon their inclusion factors. Once one style hits 50%, the remaining securities are allocated to the other style regardless of inclusion factors.

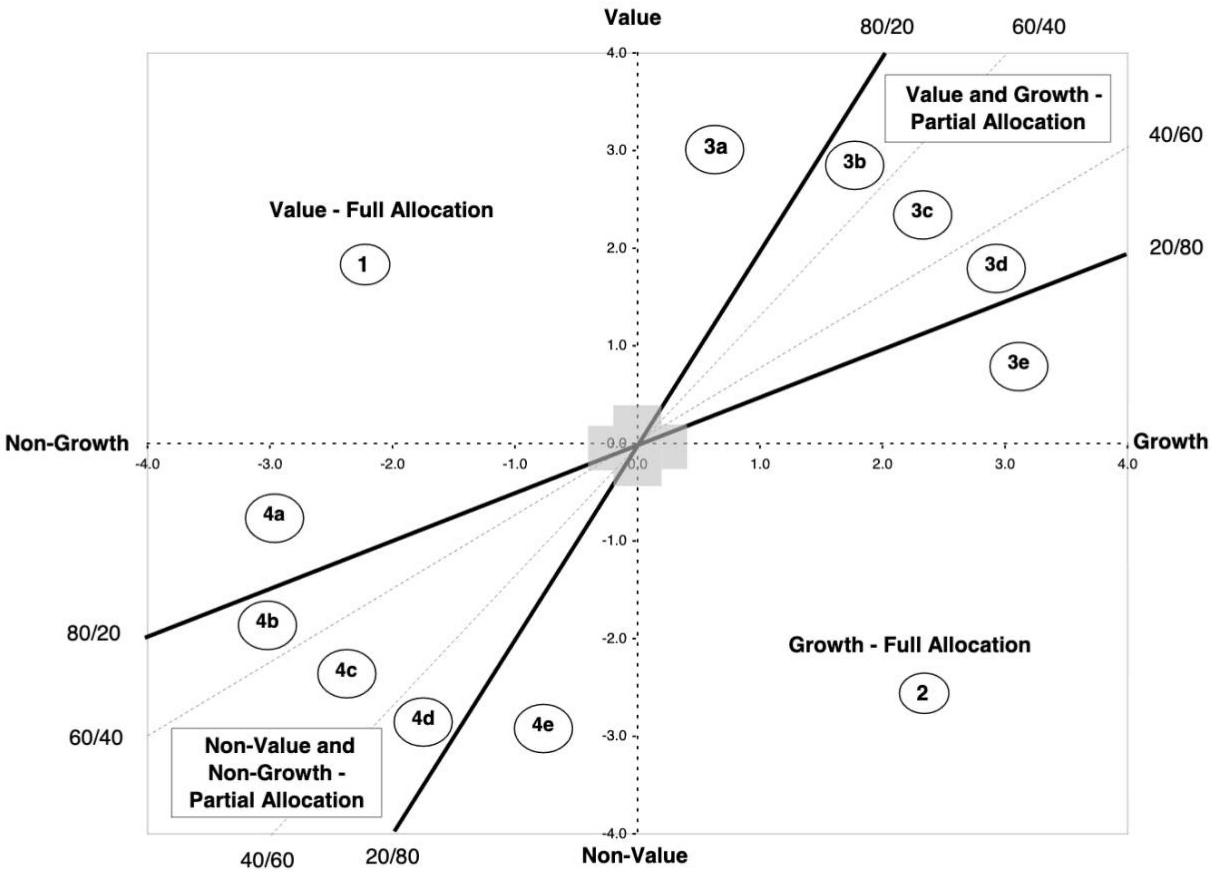
2 ROE * (1 – Payout Ratio)

3 S&P Dow Jones incorporates price momentum for some reason, so we went with it.

4 Despite its many documented flaws, price-to-book is still incorporated in almost every value index definition, so we include it here.

5 We should note that we are neither excluding nor adjusting for negative earners in our analysis. This can create odd effects, where a stock is getting *cheaper* but actually then appears to be *less value-y.* For example, consider a stock with EPS of -$1 and a price of $5, leading to an earnings yield of -20%. If the price drops to $1, the earnings yield is now -100%. For raw sorts, the appropriate way to deal with this phenomenon is simply to multiply price times earnings when earnings are negative, which retains appropriate ordinality. Unfortunately, for more complex methods (e.g. z-scoring), this solution ruins relative scale. While we acknowledge this problem, we do not account for it explicitly.

6 We use enterprise value here because sales apply to the entire capital structure, whereas earnings apply only to equity holders.



Source: MSCI.

The result of this process is that each style represents approximately 50% of the total market capitalization of the S&P 500. The market capitalization for each security will be fully represented in the combination of growth and value and may even be represented in both Value and Growth as a partial weight (though never double counted).

Portfolios are rebalanced semi-annually using six overlapping portfolios.

How Attractive is Value?

To evaluate the relative attractiveness of Growth versus Value, we will evaluate two approaches.

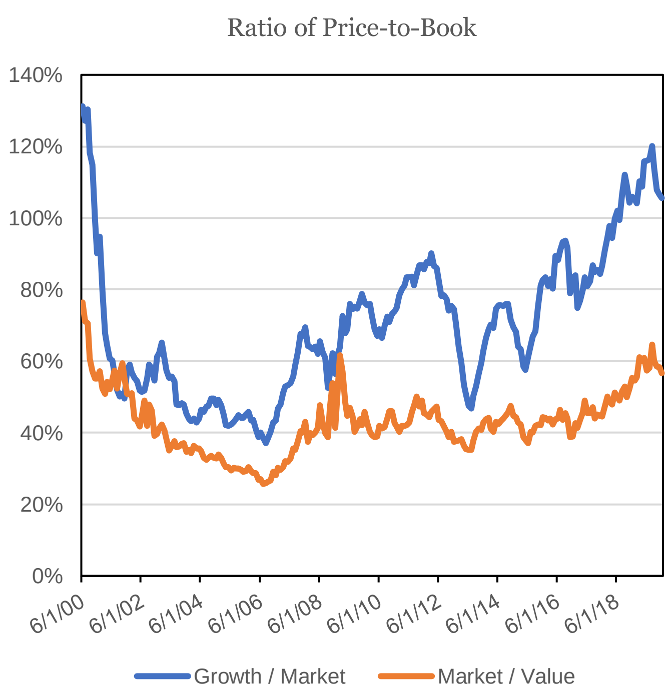
In the first approach, we will make the assumption that fundamentals will not change but prices will revert. In this approach, we will plot the ratio of price-to-fundamental measures (e.g. price-to-earnings of Growth over price-to-earnings of Value) minus 1. This can be thought of as how far price would have to revert between the two indices before valuations are equal.

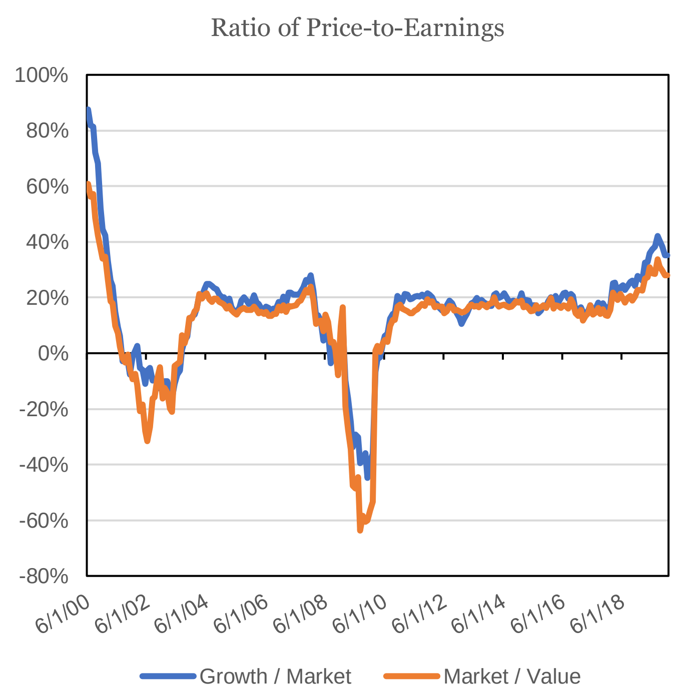
As an example, consider the following two cases. First, Value has an earnings yield of 2% and Growth has an earnings yield of 1%. In this case, both are expensive (Value has a P/E of 50 and Growth has a P/E of 100), but the price of Value would have to double (or the price of Growth would have to get cut in half) for their valuations to meet. As a second case, Value has an earnings yield of 100% and Growth has an earnings yield of 50%. Both are very cheap, but we would still have to see the same price moves for their fundamentals to meet.

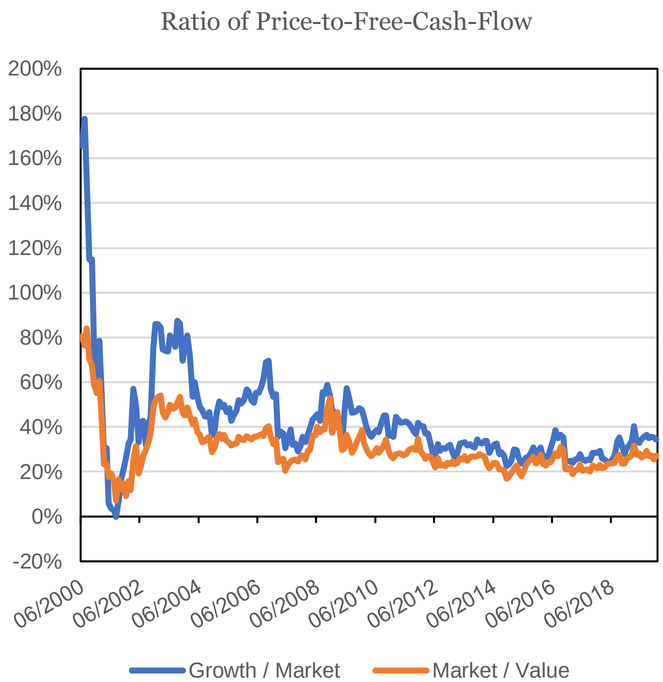
For our second approach, we will assume prices and fundamentals remain constant and ask the question, "how much carry do I earn for this trade?" Specifically, we will measure shareholder yield (dividend yield plus buyback yield) for each index and evaluate the spread.

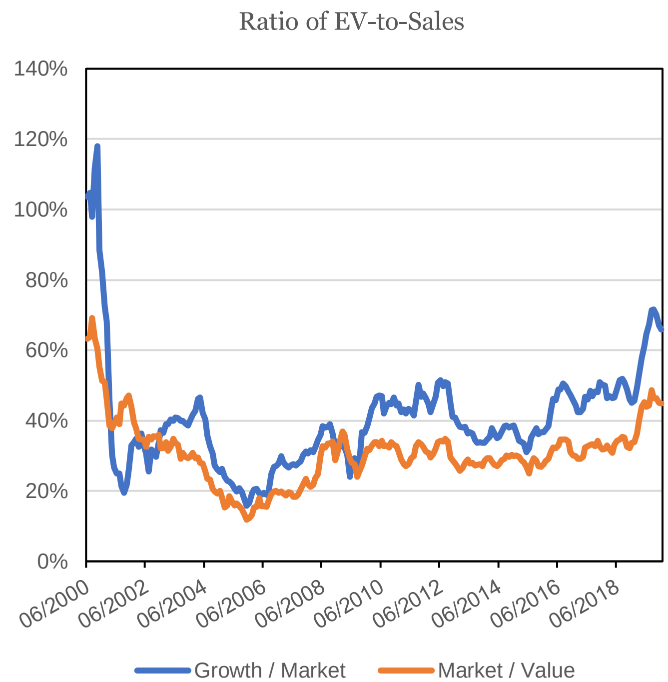
In both cases, we will decompose our analysis into Growth versus the Market and the Market versus Value to gain a better perspective as to how each leg of the trade is influencing results.

Below we plot the relative ratio for price-to-book, price-to-earnings, price-to-free-cash-flow, and price-to-sales.









Source: Sharadar. Calculations by Newfound Research.

A few things stand out:

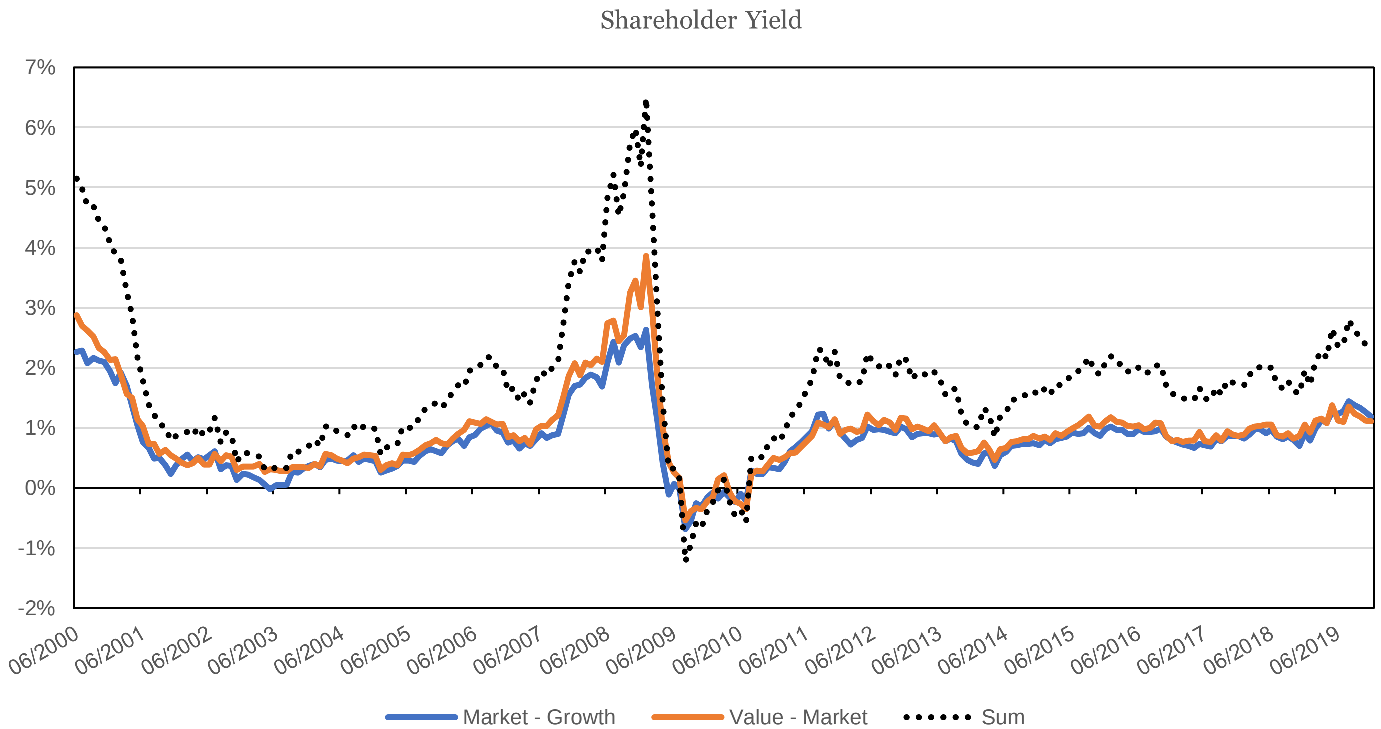
- The ratio of Growth's price-to-book versus the S&P 500's price-to-book appears to be at 2000-level highs. Even the ratio of the S&P 500's price-to-book versus Value's price-to-book appears extreme. However, the interpretation of this data is heavily reliant upon whether we believe price-to-book is still a relevant valuation metric. If not, this result may simply be a byproduct of naïve value construction loading up on financials and ignoring technology companies, leading to an artificially high spread. The fact that Growth versus the S&P 500 has far out-stripped the S&P 500 versus Value in this metric might suggest that this result might just be caused Growth loading up on industries where the market feels book value is no longer relevant.

- The ratio of price-to-earnings has certainly increased in the past year for both Growth versus the S&P 500 and the S&P 500 versus Value, suggesting an even larger spread for Growth versus Value. We can see, however, that we are still a far way off from 2000 highs.

- Ratios for free cash flows actually look to be near 20-year lows.

- Finally, we can see that ratios in price-to-sales have meaningfully increased in the last few years. Interestingly, Growth versus the S&P 500 has climbed much faster than the S&P 500 versus Value, suggesting that moving from Growth to the S&P 500 may be sufficient for de-risking against reversion. Again, while these numbers sit at decade highs, they are still well below 2000-era levels.

Below we plot our estimate of carry (i.e. our return expectation given no change in prices): shareholder yield. Again, we see recent-era highs, but levels still well below 2000 and 2008 extremes.



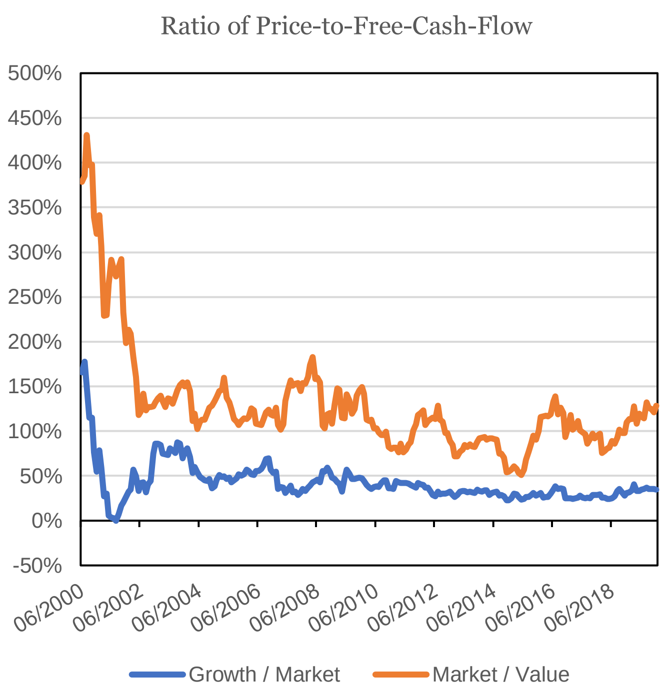
Source: Sharadar. Calculations by Newfound Research.

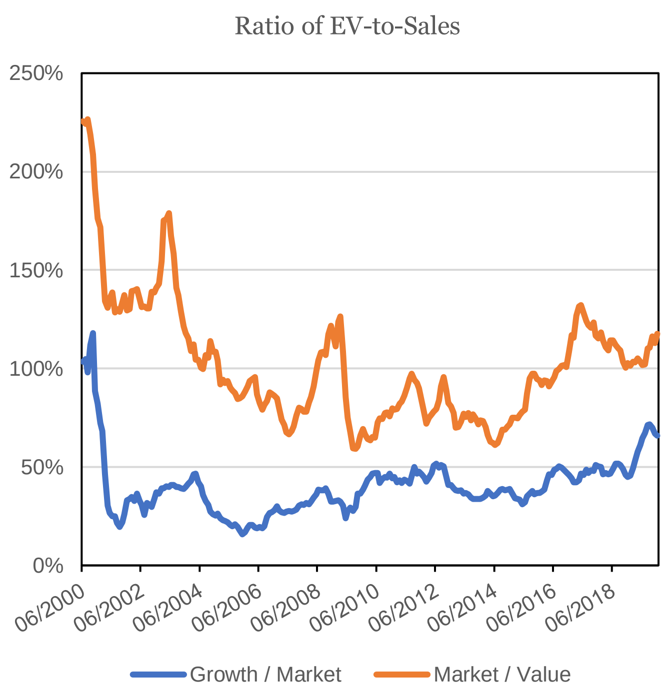
Taken all together, value certainly appears *cheaper* – and a trade we likely would be paid more to sit on than we had previously – but a 2000s-era opportunity seems a stretch.

Growth is not Glamour

One potential flaw in the above analysis is that we are evaluating "Value 1.0" indices. More modern factor indices drop the "not Growth" aspect of defining value, preferring to focus only on valuation metrics. Therefore, to acknowledge that investors today may be evaluating the choice of a Growth 1.0 index versus a modern Value factor index, we repeat the above analysis using a Value strategy more consistent with current smart-beta products.

Specifically, we winsorize earnings yield, free-cash-flow yield, and sales yield and then compute market-cap-weighted z-scores. A security's Value score is then equal to its average z-score across all three metrics with no mention of growth scores. The strategy selects the securities in the top quintile of Value scores and weights them in proportion to their value-score-scaled market capitalization. The strategy is rebalanced semi-annually using six overlapping portfolios.



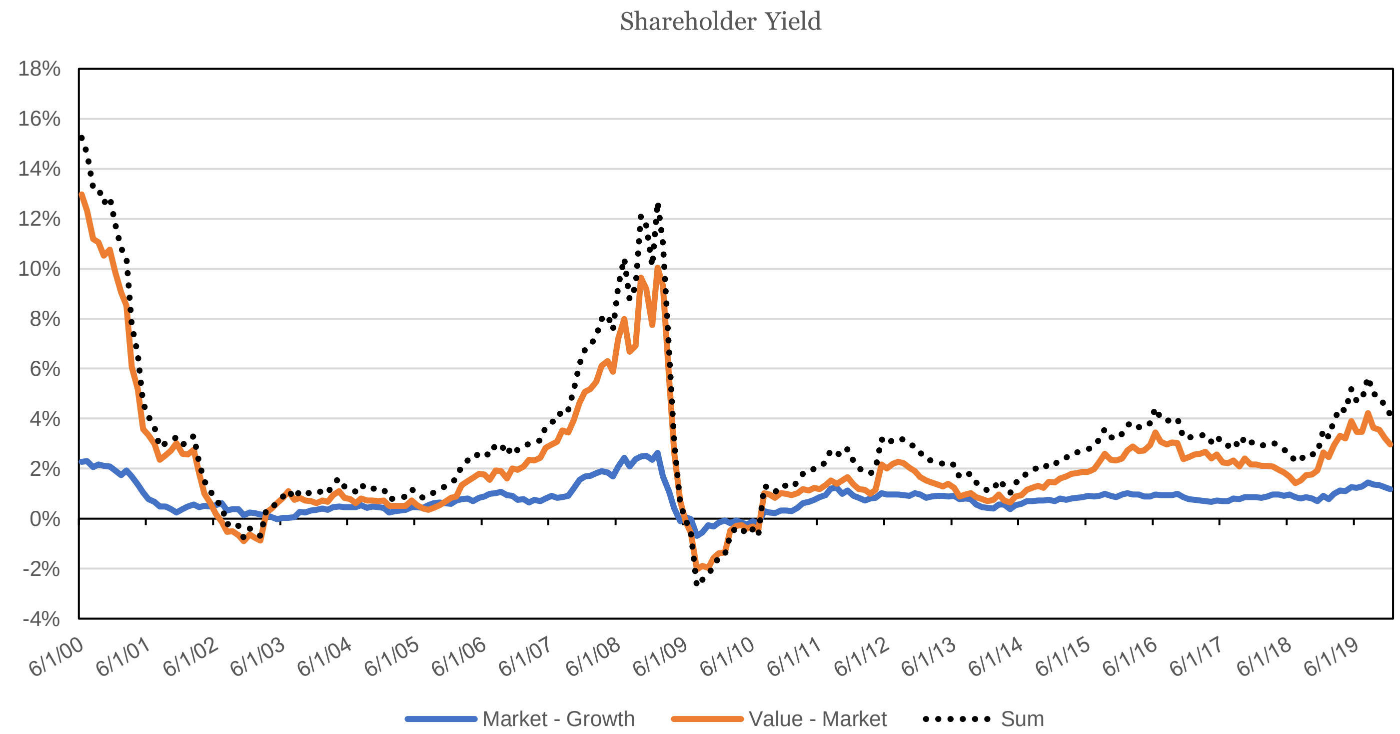


Source: Sharadar. Calculations by Newfound Research.

We can see:

- In the Value 1.0 approach, moving from Growth appeared much more expensive versus the S&P 500 than the S&P 500 did versus Value. With a more concentrated approach, the S&P 500 now appears far more expensive versus Value than Growth does versus the S&P 500.
- Relative price-to-book (despite price-to-book no longer being a focus metric) still appears historically high. While it peaked in Q3 2019, meaningful reversion could still occur. All the same caveats as before apply, however.
- Relative price-to-earnings did appear to hit multi-decade highs (excluding the dot-com era) in early 2019. If the prior 6/2016-to-2/2018 reversion is the playbook, then we appear to be halfway home.
- Relative price-to-free-cash-flow and price-to-sales are both near recent highs, but both below 2008 and dot-com era levels.

Plotting our carry for this trade, we do see a more meaningful divergence between Value and Growth. Furthermore, the carry for bearing Value risk does appear to be at decade highs; however it is certainly not at extreme levels and it has actually reverted from Q3 2019 highs.



Source: Sharadar. Calculations by Newfound Research.

Conclusion

In this research note, we sought to explore the current value-of-value. Unfortunately, it proves to be an elusive question, as the very definition of value is difficult to pin down.

For our first approach, we build a style-box driven definition of Value. We then plot the relative ratio of four fundamental measures – price-to-book, price-to-earnings, price-to-sales, and price-to-free-cash-flow – of Growth versus the S&P 500 and the S&P 500 versus Value. We find that both Growth and the S&P 500 look historically expensive on price-to-book and price-to-earnings metrics (implying that Value is very, very cheap), whereas just Growth looks particularly expensive for price-to-sales (implying that Value may not be cheap relative to the Market). However, none of the metrics look particularly cheap compared to the dot-com era.

We also evaluate Shareholder Yield as a measure of carry, finding that Value minus Growth reached a 20-year high in 2019 if the dot-com and 2008 periods are excluded.

Recognizing that many investors may prefer a more factor-based definition of value, we run the same analysis for a more concentrated value portfolio. Whereas the first analysis generally pointed to Growth versus the S&P 500 being more expensive than the S&P 500 versus Value trade, the factor-based approach finds the opposite conclusion. Similar to the prior results, Value appears historically cheap for price-to-book, price-to-earnings, and price-to-sales metrics, though it appears to have peaked in Q3 2019.

Finally, the Shareholder Yield spread for the factor approach also appears to be at multi-decade highs ignoring the dot-com and 2008 extremes.

Directionally, this analysis suggests that Value may indeed be cheaper-than-usual. Whether that cheapness is rational or not, however, is only something we'll know with the benefit of hindsight.

For further reading on style timing, we highly recommend Style Timing: Value vs Growth (AQR). For more modern interpretations: Value vs. Growth: The New Bubble (QMA), It's Time for a Venial Value-Timing (AQR), and Reports of Value's Death May Be Greatly Exaggerated (Research Affiliates).

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