Dissecting the Growth/Value Spread

Christopher Lewis | October 2020

Background

The outperformance of expensively valued stocks ("Growth") compared to cheaply valued stocks ("Value") has been the subject of intense debate and research over the past few years, particularly as Growth's outperformance has accelerated during 2020. That acceleration, added onto what were already abnormally wide valuation spreads to start the year, has prompted many comparisons[1] to the Dot-Com Bubble of the late 1990s. Bubble believers point to historically wide valuation spreads or other data associated with unbridled optimism being priced into the Growth stocks, such as the fact that the Russell 2000 Growth Index has more constituents losing money than making money (the highest level of non-earners in history). Growth advocates have their own counterpoints to explain why this time is different: strategic moats, winner-take-all industries, low interest rates, and in some cases even strong profit margins can potentially justify the rich valuations.

As the examples above demonstrate, the bubble debate typically focuses on how stretched the valuations of Growth stocks are. While this is certainly a topical question, it is somewhat less relevant for long-only Value managers. These investors were never going to buy the Virgin Galactics in their universe, nor will they be selling those stocks short. For these managers the primary force affecting their performance and prospective outlook is how cheap their typical investment landscape has become. Is there an "anti-bubble", or whatever the opposite word for "bubble" should be[2], amongst the Value stocks that has caused them to sag down to unrealistically low valuations?

The following pages describe first a conventional comparison of Growth vs. Value prices, to demonstrate that while today's spreads are abnormally wide, they have not reached the Dot-Com peak. Next, these cross-style spreads are dissected into two comparisons against the median P/E stock, to distinguish how much of the recent spread widening has come from Growth getting more expensive and how much has come from Value getting cheaper. This exercise helps clarify the recent affliction of many Value managers, particularly those in the Mid Cap universe. While it is true that today's Growth stocks have not reached the euphoria of the 1990s, Value stocks within the Russell Mid Cap Index are trading at a greater discount today than they ever did during the Dot-Com Bubble or Financial Crisis.

[1] A simple Bloomberg or Google search will reveal dozens of such articles, but the title of a June 2020 article from CNN encapsulates the point well: "Welcome to Irrational Exuberance Part Deux (aka the 2020 tech bubble)."

[2] A 2008 Financial Times article identified this gap in the financial lexicon, writing that "the right term for the phenomenon [opposite of a bubble] remains elusive. A bottle of champagne awaits the most compelling entry."

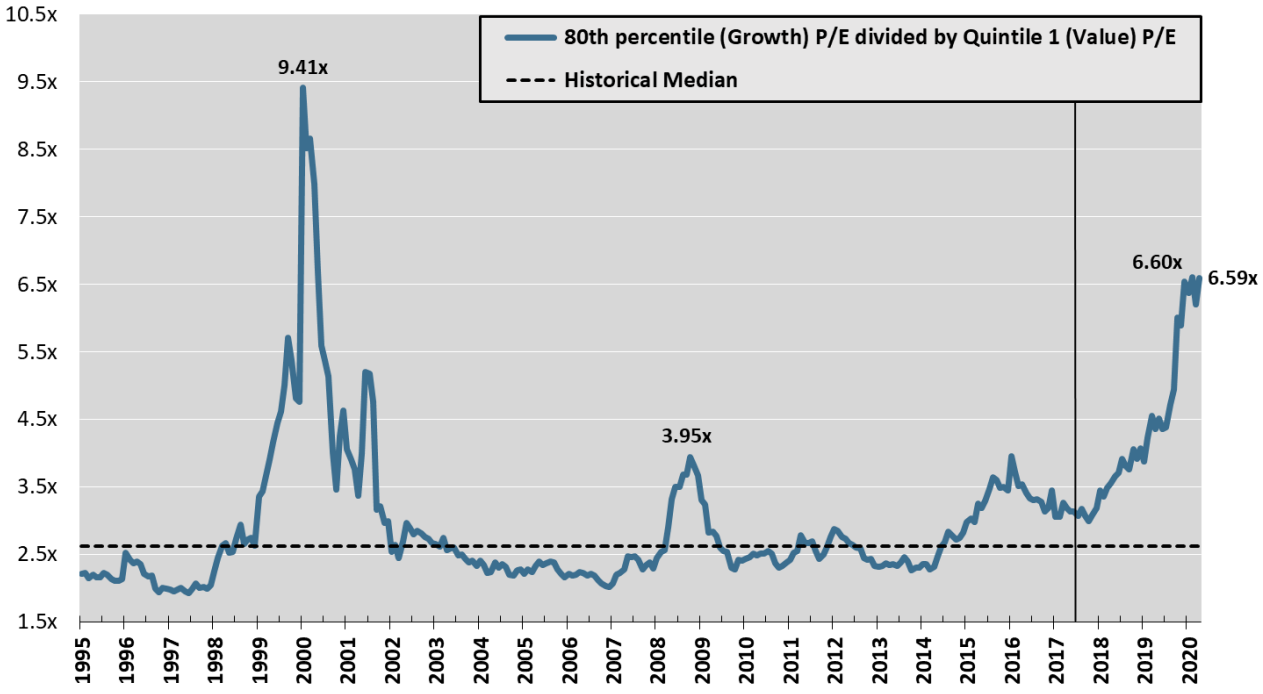
Growth/Value Comparison

Comparing valuation multiples across extreme time periods creates a handful of challenges. Preferably a cohort of stocks should be studied rather than individual points on the spectrum (e.g. valuation of a basket of stocks rather than a single percentile point), but at the same time the resulting inferences should not hinge on how stocks with negative or negligible earnings are treated. The appendix of this memo provides a detailed discussion of the metrics and calculations used, but the broad point worth noting here is that they were calibrated to provide a sense of what the Value and Growth "fishing ponds" look like, in regards to long-term earnings expectations.

The chart below plots a traditional Growth P/E vs. Value P/E ratio for constituents of the Russell Mid Cap Index. It shows the Dot-Com Bubble's manic valuation rise, which peaked in 2000, and then a second, smaller spike during the Financial Crisis. More recently, another spread widening cycle began around year-end 2017, which has endured for longer than the prior cycles and suddenly picked up steam during the COVID-19 outbreak. During the third quarter of 2020 this valuation spread oscillated back and forth a bit, although as of 9/30/20 it remains wider than at any level seen since the Dot-Com era.

Historical Growth vs. Value P/E Ratios within the Russell Mid Cap Index

Rebalanced monthly into equal-weighted quintiles based on FY2 estimated E/P, capped at ± 30% earnings yield.



Source: FactSet and WEDGE Capital Management.

Note: Value P/E represents the average P/E across stocks in the bottom quintile of valuation. A similar average within the top quintile of valuation periodically has negative aggregate earnings, which is why the 80th percentile point is used for the Growth side of the ratio.

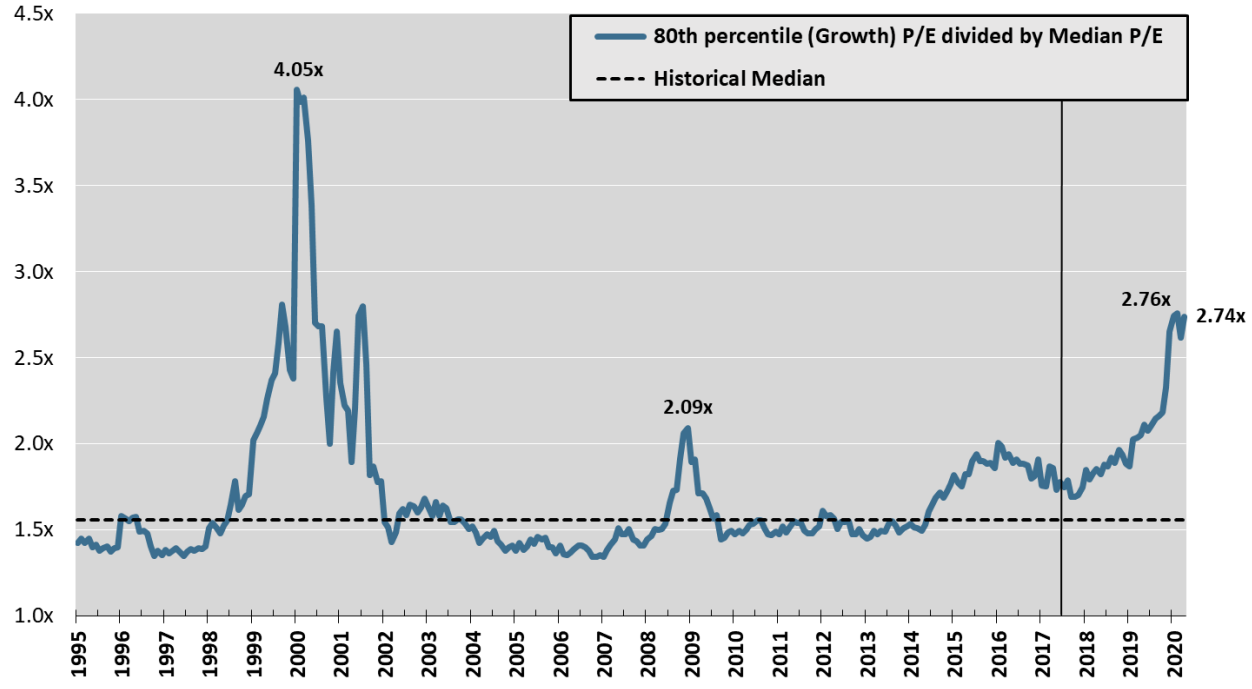
Growth/Median Comparison

The next chart plots the same Growth P/E multiple but divided by the median stock's P/E. Once again, three local peaks are reached during the Dot-Com Bubble, Financial Crisis, and COVID-19 pandemic. A similar acceleration in spreads takes place during the pandemic outbreak, followed by some back and forth fluctuations during the third quarter of 2020.

The observation that today's Growth enthusiasm, while unusual, is not yet at the level of the Dot-Com Bubble seems to align with qualitative anecdotes from that time. The late 1990s are infamous for not only their astronomical valuations but also the creative new metrics concocted to justify them. Valuation ratios like "Price/Eyeballs" were proposed and studied during those years, but similar creativities have not taken hold today. One memorable attempt was WeWork's "Community Adjusted EBITDA" metric, which was presented in its 2019 IPO prospectus and backed out multiple layers of normal operating costs in order to suggest the company was profitable. That effort was rightfully mocked by investors and challenged by the SEC though, and the company's IPO subsequently failed.

Historical Growth vs. Median P/E Ratios within the Russell Mid Cap Index

Rebalanced monthly into equal-weighted quintiles based on FY2 estimated E/P, capped at ± 30% earnings yield.



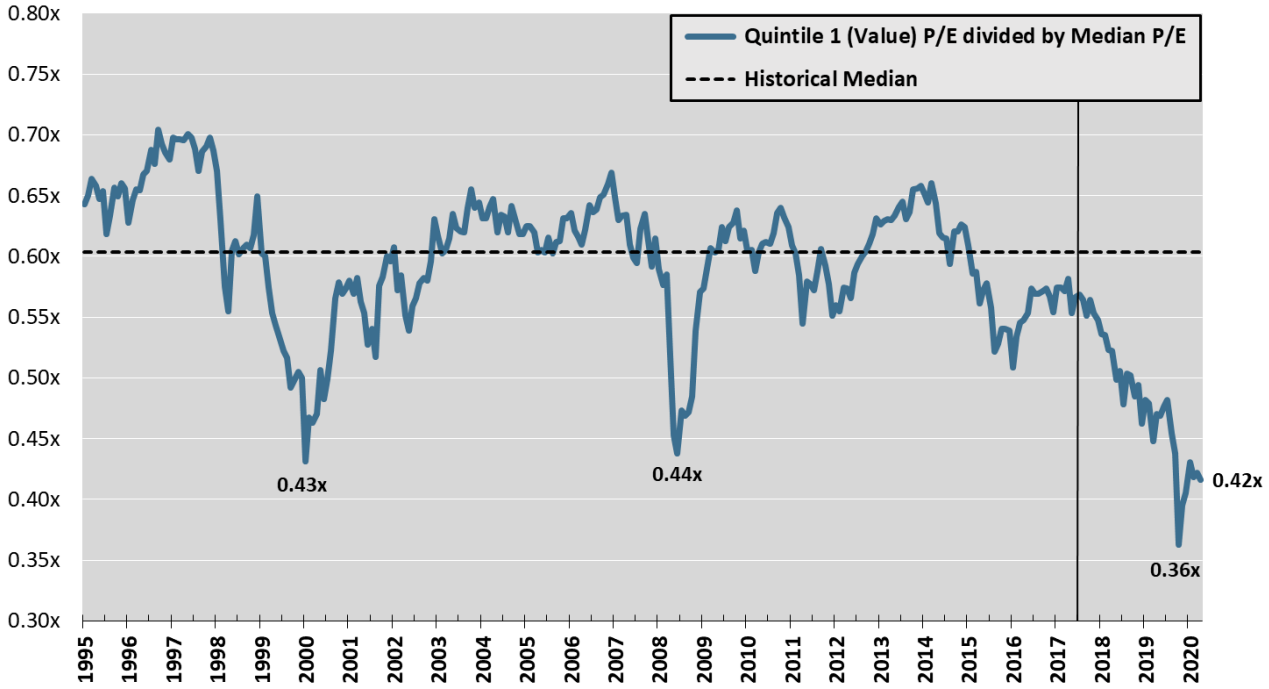
Source: FactSet and WEDGE Capital Management.

Value/Median Comparison

To complete the analytical circle, the final chart below shows the relationship between the bottom valuation quintile P/E versus the median stock. Naturally this ratio is always below 1. Once again three notable extremes occur during the Dot-Com Bubble, Financial Crisis, and COVID-19 market crashes, although in this case they are troughs that represent abnormally cheap valuations. Another key difference in this Value-focused analysis is that the global extreme is reached at the March 2020 pandemic bottom – not the Dot-Com Bubble. Following those March 2020 lows, the deepest valuation stocks saw a meaningful bounce up in Q2, but then widened again during third quarter of 2020. As of 9/30/20, with a collective P/E ratio equal to 42% of the median stock's, the bottom quintile of P/E is cheaper than it ever was during the Dot-Com Bubble or Financial Crisis.

Historical Value vs. Median P/E Ratios within the Russell Mid Cap Index

Rebalanced monthly into equal-weighted quintiles based on FY2 estimated E/P, capped at ± 30% earnings yield.



Source: FactSet and WEDGE Capital Management.

Note: Value P/E represents the average P/E across stocks in the lowest quintile of valuation.

It is this final chart that best illustrates the recent plight of Value investors, and potentially the opportunity that lies ahead. Within the bottom half of P/E valuations, the cheapest 40% of those stocks have repeatedly devalued further over the past few years – a degradation that only picked up steam during the COVID-19 outbreak. A similarly rapid plunge happened during the Financial Crisis, but that Value crash started from a roughly median-level valuation discount, whereas the pandemic fall came at a time when Value stocks were already trading at historically low valuations.

Prospective Outlook

While it was already obvious that Value has underperformed in recent years, it is encouraging to see that the underperformance has created a wide pricing discount. This fact alone does not necessarily prove that there is an "Anti-Bubble" though. Historically low P/Es could indicate one of two things:

1. **High Expected Returns:** Value stocks are historically cheap because the discount rate priced into them is historically high. These stocks are out of favor; all else being equal investors prefer to own more expensive stocks. However, just like a job handling nuclear waste pays more than the neighborhood trash pickup, the investors who do own Value must be compensated for its unpleasantness. In the stock market this type of compensation is provided through higher "expected returns." Even though the future cannot be known with certainty, stocks can be priced for better performance on average, across the various probabilities that might unfold.

2. **Fundamental Deterioration:** Value stocks are cheap because their businesses will only achieve minimal or possibly even declining growth in the future. Although these stocks look attractive on a FY2 basis today, if FY10 and FY20 estimates were available they would show appropriate valuations for the companies' intrinsic values.

The two options above are not mutually exclusive, although past studies on the Value factor's efficacy indicate that the first explanation tends to be the stronger one. In hindsight each of the prior two Value troughs (2000 and 2008) fit the first description, with rapid Value rebounds back up towards the long-term median. If a pure multiple re-rating back to the median discount level occurred today within the Russell Mid Cap Index, the bottom quintile would outperform the median P/E stock by 45%.

The Question of Interest Rates

A frequently cited reason for Value's underperformance, as well as a potential hinderance to its recovery, is that interest rates have fallen to extremely low levels, which naturally lifts the valuations of Growth stocks. Expensive stocks derive more of their intrinsic value from distant cashflows, which implies a higher interest rate duration for the Growth stocks. Thus, when interest rates fall, the prices of Growth stocks should rise by more than Value stocks' do, all else being equal. That logic is very reasonable, but the caveat of "all else being equal" is incredibly broad and can lead to a false sense of causality, implying that the Value premium can rebound if and only if interest rates rise.

Simply put, "all else being equal" ignores every other assumption that goes into equity valuations. Estimated growth rates, profit margins, tax rates, threats from competition and new innovations, betas, etc., are also critical ingredients. Even the interest rate effect itself is not so simple: bond prices only jump due to unanticipated changes in the yield curve – not when rates drift to where they were

expected to go. With interest rates already close to zero, and negative rates seemingly off the table, there appears to be limited room for downside surprises that could further propel Growth stocks.

Historical evidence demonstrates how those other valuation ingredients can be more influential than the interest rate effect alone. Although the past decade aligns well with the interest rate story, other time periods and regions show completely different outcomes. During the final year of the Dot-Com Bubble the Fed was hiking rates, and yet Growth stocks' outperformance accelerated. Once that bubble burst in 2000, the Fed Funds rate was cut from 6.5% to 1.2% in December 2002. It was during that falling rate period when Value experienced one of its best stretches of relative performance ever, with the Russell Mid Cap Value Index outperforming the Growth Index by over 56% (26% annualized).

Japan provides additional, out-of-sample evidence in that it began the low interest rate experiment well before the rest of the world. In September 1990 Japan's central bank rate peaked at 6%, and from that point on was repeatedly cut until reaching 0.5% in 1995. 10-year government bond yields similarly peaked in 1990 at 8.0%, and then declined to 1.7% by the year 2000. Despite that falling rate environment Value stocks performed in line with Growth – even outperforming by some measurements. Over the following ten years interest rates continued to decline, but Japanese Value stocks outperformed by double-digit annualized returns. Only in the most recent decade has the tide turned in Growth's favor. Still, those earlier periods contradict the narrative that a Value rebound requires higher interest rates. Such an environment might help, but there are many other potential catalysts as well.

Interest Rates and Value Factor Performance in Japan

All data shown in annualized percentages.

					Compound Annual Returns: Value - Growth			
	Bank Rate		10Y Yield		Large Caps		Small Caps	
Period	Start	End	Start	End	Cap Wtd	Equal	Cap Wtd	Equal
1990 - 2000	5.25	0.50	6.77	1.69	0.47	0.08	-0.04	1.71
2000 - 2010	0.50	0.30	1.69	1.08	11.19	12.43	13.98	12.77
2010 - 2020	0.30	0.30	1.08	0.01	-4.74	-3.83	-2.99	-1.38
Full 30 Years	**5.25**	**0.30**	**6.77**	**0.01**	**2.55**	**3.04**	**3.83**	**4.51**

Source: Federal Reserve Bank of St. Louis data site ("FRED"), Kenneth R. French data site, and WEDGE Capital Management.
Note: Monthly data for each period extends from July of the starting year through June of the ending year.

Researchers at AQR and Yale University reached a similar conclusion (on a global basis) regarding the lack of interest rate causality for Value's performance, writing in a 2020 whitepaper that:

> Despite some eye-catching patterns in recent data, particularly those related to changes in bond yields or the yield curve slope, the economic significance of any [interest rate and value] relationship is small and not robust in other samples.

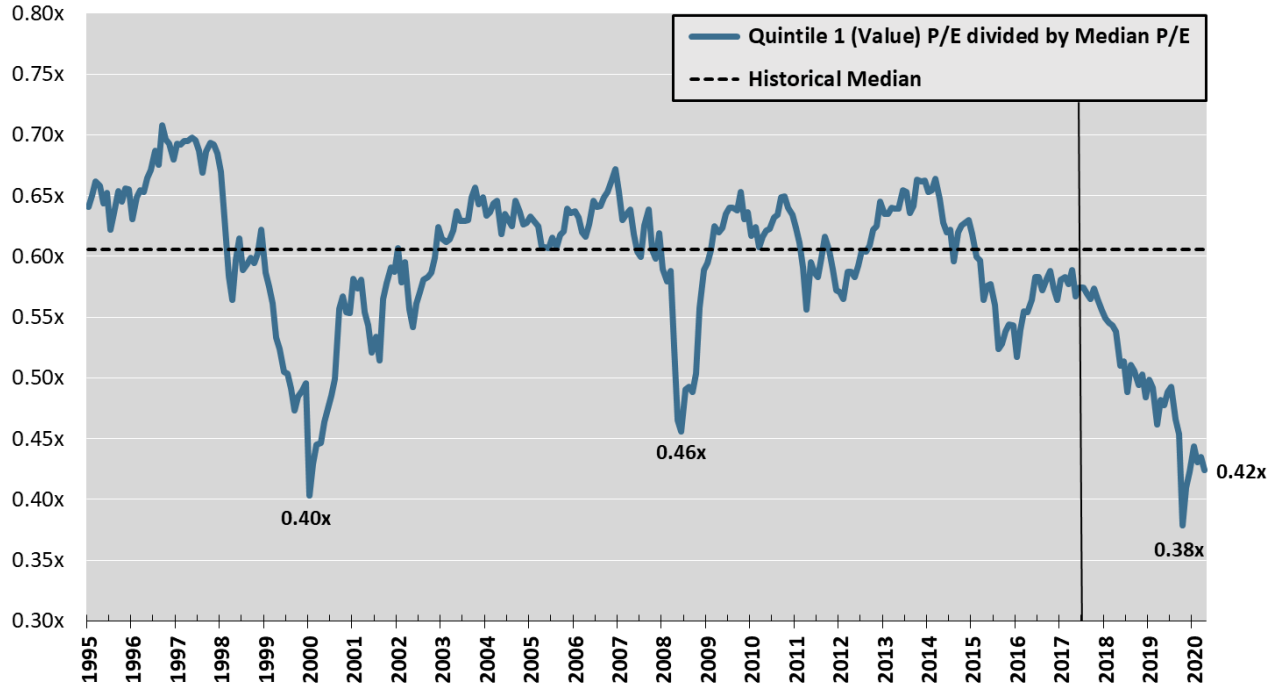
Other Capitalization Ranges

The previous pages all focus on the Russell Mid Cap Index for two reasons: (1) there is less capitalization skew compared to the Russell 1000 Index; and (2) the Growth side of the Mid Cap Index is not overrun by negative earners like the Russell 2000 Index currently is. The Russell 1000 has become dominated by its largest constituents; at one point during September 2020 the market cap of Apple exceeded that of the entire Russell 2000 Index combined. As a result of this skewness, studies in the large cap space can vary significantly depending on whether the results are cap-weighted or equal-weighted. In the small cap landscape, the most expensive quintile of the Russell 2000 Index is entirely composed of companies forecasted to lose money two years out in the future. That fact makes it impossible to even create the same 80th percentile P/E chart for the Russell 2000.

These two issues primarily impact the Growth side of the indices though; comparisons of the Value quintile versus the median P/E aren't as sensitive to market cap differences and do not have negative earners to worry about. The below charts show this comparison for the Russell 1000 and Russell 2000 indices. The plots look very similar to that of the Russell Mid Cap Index, with the exception that in the Russell 1000 Index, today's valuation discount is not quite as wide as it was during the Dot-Com nadir.

Russell 1000 Index: Historical Value vs. Median P/E Ratios

Rebalanced monthly into equal-weighted quintiles based on FY2 estimated E/P, capped at ± 30% earnings yield.

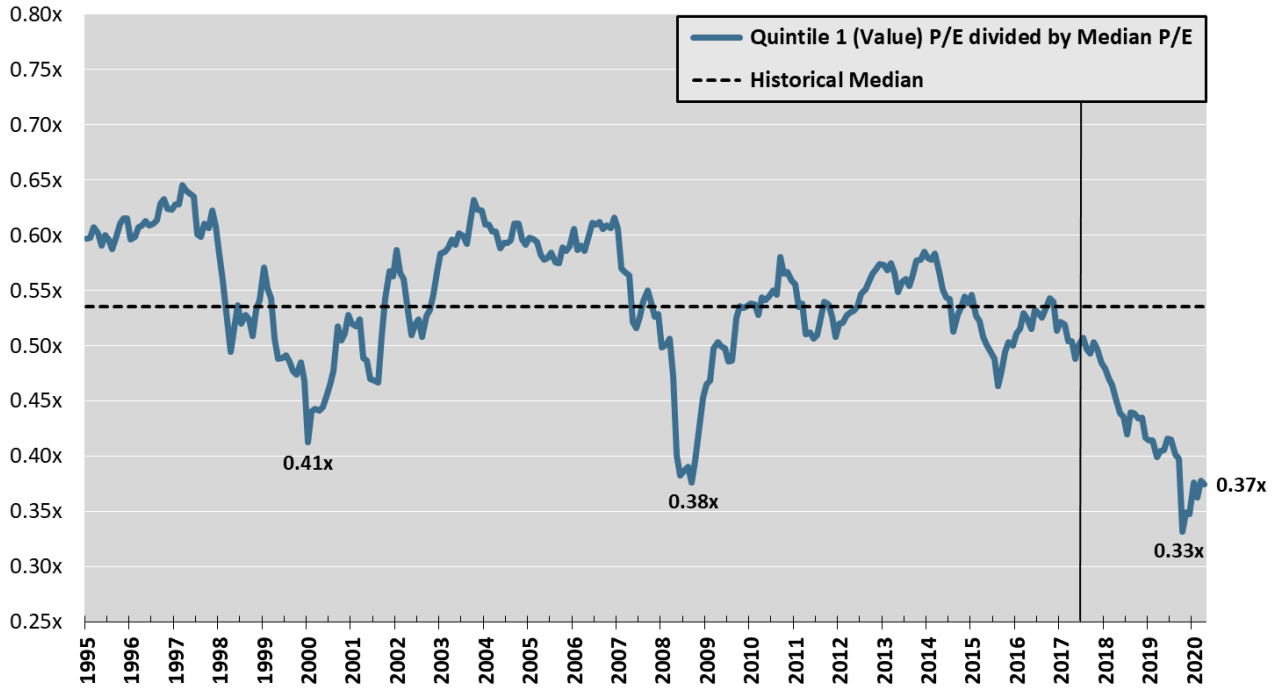


Source: FactSet and WEDGE Capital Management.

Note: Value P/E represents the average P/E across stocks in the lowest quintile of valuation.

Russell 2000 Index: Historical Value vs. Median P/E Ratios

Rebalanced monthly into equal-weighted quintiles based on FY2 estimated E/P, capped at ± 30% earnings yield.



Source: FactSet and WEDGE Capital Management.

Note: Value P/E represents the average P/E across stocks in the lowest quintile of valuation.

Value's current relative discount is similarly abnormal across the three size universes. On an absolute basis the Russell 2000's Value quintile is the cheapest of the three, but that universe has traditionally carried more of a Value discount anyways. In terms of deviation from its median discount, Mid Cap Value stocks are the cheapest by a slight margin, requiring relative outperformance of 45% versus the median P/E stock just to return to its long-term median ratio of 0.60x.

Local Minimums of Value vs. Median P/E Ratios

Value defined as the average P/E within the cheapest quintile of FY2 P/E valuation.

	Russell 1000		Russell Mid Cap		Russell 2000	
Trough Point	Ratio of P/Es	Rise to = LT Median	Ratio of P/Es	Rise to = LT Median	Ratio of P/Es	Rise to = LT Median
Dot-Com Bubble	0.40x	50%	0.43x	40%	0.41x	30%
Financial Crisis	0.46x	33%	0.44x	38%	0.38x	43%
Pandemic Bottom	0.38x	60%	0.36x	66%	0.33x	62%
Current Value (9/30/20)	0.42x	43%	0.42x	45%	0.37x	43%
Long-Term Median	**0.61x**	**-**	**0.60x**	**-**	**0.54x**	**-**

Source: FactSet and WEDGE Capital Management.

Note: Discounts to long-term median are shown as the relative return gain Value would experience in a purely price driven move back to the median. These points are shown only to illustrate the size of past discounts; they are not forecasts. Past performance does not guarantee future results.

Appendix: Calculation Details

Particularly when extreme time periods are involved, different analytical assumptions can lead to different conclusions. For purposes of the above discussion, three primary decisions were made to distinguish the Growth and Value contributions to the Growth/Value valuation spread.

Which Factor to Use

Deciding which valuation factor to use is itself a significant decision. Forward estimates can be biased based on market irrationalities of that time, and trailing fundamentals can be detached from a company's future. Both can be extremely noisy when write-offs and loss provisions are incurred during recessionary periods. These latter "kitchen sink" tendencies were deemed to be a greater concern than analyst exuberance, so to get the most stable data points of firms' long-term prospects, consensus Fiscal Year 2 EPS estimates were downloaded for each stock in each month and scaled by their price. Unlike EBITDA and cashflow measures, P/E multiples are applicable across all sectors, and although sell-side analysts rarely publish estimates beyond two years out, using the FY2 data points likely skips over much of the one-time expensing that becomes common during a crisis.

Where to Draw the Line

Comparing Value and Growth P/Es to the median stock is straightforward, but why use a quintile average for the former and just a single percentile point for the latter? In both cases it would be preferable to depict valuations of a basket of stocks rather than just a single security, but within the Growth quintile negative earners periodically overwhelm the positive earners (which is currently the case), making P/E multiples uninterpretable. Even very small, positive earnings can create distortions in a Growth/Value or Growth/Median ratio. There is minimal economic difference between an earnings yield of 0.1% and 0.01%, but the latter would present a P/E multiple ten times as large. Representing the Growth stocks with just the 80th percentile point avoids both of these problems: it maintains a positive earnings yield throughout the available history, and its maximum P/E reached during the Dot-Com Bubble is 70x – very high but not to the point where it causes meaningless distortions.

To determine the median P/E all stocks were ranked according to their earnings yield each month, so that unprofitable companies rank as the most expensive. These same earnings yield rankings were used to set the quintile breakpoints that define the Value portfolio.

Handling Outliers

To reduce the effect of any data errors or extreme outliers a few steps were taken. First, any stock with an earnings yield over 30% was changed to match that level. Earnings yields above 30% were assumed

to have a high likelihood of being either data errors or visibly distressed companies that professional money managers might categorically avoid. Next, the Value P/E averages were calculated so that the deepest Value stocks within the bottom quintile were deemphasized.

Although the quintile rankings were formed using earnings yield measurements, the Value P/E averages were calculated by inverting the yields into P/E multiples for each company and then averaging across those, rather than just calculating the average earnings yield and inverting that. Those two approaches might sound the same, but there is a deceptive difference between them: the former is a harmonic average of yields and the latter is an arithmetic average. Harmonic averages are mathematically always the smaller of the two, which means the first approach assigns a smaller earnings yield (i.e. larger P/E) to the Value quintile each month. That conservatism of using the average which pulls the Value P/E up more towards the 20th percentile hopefully provides a more realistic depiction of the institutional Value investor's focus area.

Disclaimer

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