

Value Your Wealth - Part Two: Quantifying the Value Proposition

This article is the second in a series focused on growth versus value investment styles and its significance to managing your wealth in the current environment. If you have not read [Part One](#), we urge you to read it first as it provides a foundation upon which this article builds. If you already read Part One, it may be helpful to go back and review the fundamental definitions of growth and value.

Human behavior has demonstrated the willingness of investors to get caught up in the euphoria of financial bubbles. The history books are chock full of tales about investors chasing the prices of tulips, technology stocks, and real estate to stratospheric levels. The collective enthusiasm of such periods has a hypnotic way of lulling even the most astute investors into the belief that stocks have reached *a permanently high plateau?* (prominent economist Irving Fisher, 1929).

Like seasons and tides, however, markets and human behavioral patterns are cyclical. Mean reversion, like change, is one thing we can all count on. As the analysis below will illustrate, we appear to be in another one of those euphoric periods.

In time, euphoria will turn to despair. It is with this knowledge that we continue to expose the current paradigm between growth and value stocks so that you can prepare for this inevitability. Those who seek to compound wealth are well-served to understand the current circumstances and the nature of the contrast between the two investment approaches.

Currently, the differences in their valuations and performance are extreme in both magnitude and duration. If we are to believe that the realities of the world in which we live have been permanently suspended and there will be no mean reversion, then we should proceed to do what we did yesterday. If we believe that this cycle too will end, then we need to understand what is at risk and strategize on how to protect ourselves.

The data which follows puts a much finer point on the extremes we are currently observing and therefore the risks we assume by failing to acknowledge them.

What Constitutes Growth and Value

After coming across compelling work articulated on Bloomberg by [Nir Kaisser](#), we decided to look deeper into the contrast between growth and value stocks. In taking on this project, we had two problems. The first problem was deciding how to quantitatively define growth and value. The second problem was retrieving and processing the data required to fairly analyze these two broad categories.

To keep this analysis both simple and applicable, we chose to limit our analysis to the constituents of the S&P 500. We also decided to use the six fundamentals listed below to quantitatively define and screen between value and growth.

- *Price-to-Sales (P/S)*
- *Price-to-Book (P/B)*
- *Price-to-Cash Flow (P/CF)*
- *Price-to-Earnings (P/E)*
- *Dividend Yield (DY)*
- *Earnings per Share (Trailing 12-Months) (EPS)*

Growth companies tend to have higher price-to-sales, price-to-book, price-to-cash flow and earnings per share and lower (often zero) dividend yield. Value companies are the opposite.

Keep in mind, the S&P 500 accounts for roughly 80% of U.S. stock market capitalization and within that index, 100 of the largest companies in the United States reside firmly in either the growth or value category. They are the top 50 in growth and the top 50 in value (by our definition) selected based on the fundamentals as described above.

Growth vs. Value Analysis

Identifying companies within the S&P 500 that properly fit into either the growth or value category was done by evaluating the valuation metrics referenced above, ranking companies based on a standard deviation (z-score) for each metric, and then aggregating data to compute a composite z-score.

The z-score, which tells us how many standard deviations from the mean a specific number is, can be calculated by taking the company-specific reading in one category, subtracting it from the average for the S&P 500, and then dividing that number by the standard deviation for the total S&P 500. One standard deviation includes approximately 68% of the data. To clarify, we provide the example below.

- *The price-to-sales (P/S) for Boston Scientific (BSX) is 4.94*
- *The average P/S for the S&P 500 is 3.60*
- *The standard deviation for P/S for the S&P 500 is 3.25 (~68% of the data has a P/S of 3.60 +/-3.25)*
- *Therefore, BSX has a P/S z-score of 0.413 calculated as $(4.94 - 3.60) / 3.25$*
- *This tells us that BSX's P/S is 0.413 standard deviations above the average (conversely, if the z-score had been -0.413 then BSX P/S would have been 0.413 below the average)*
- *Based solely on its positive P/S z-score and above average P/S ratio, BSX can be defined as a growth company.*

We performed the same analysis for each S&P 500 company and each of the six fundamental metrics listed above. We then created a composite based on the six z-scores for each company and ranked them.

Of the 500 companies in the S&P 500, we selected the 50 companies with the highest z-score composite, those clearly demonstrating the characteristics of a growth company, and the 50 lowest z-score composites, which are companies that fit the characteristics of a value company.

Using the results of the z-score analysis, we also looked at the total rate of return over various time frames for those stocks in our growth and value identified sectors. Return figures are inclusive of dividends.

Results - Fundamentals

The data below shows the sharp contrast between the average metrics for the 50 growth stocks and the 50 value stocks.

Composite Method						
RIA Pro	Price to Sales	Price to Book	Price to Cash Flow	Price to Earnings	Dividend Yield	Earnings Per Share
Growth	8.23	24.73	45.84	61.18	0.75	4.47
Value	1.60	3.24	9.08	13.45	4.35	51.99
Ratio	5.14	7.63	5.05	4.55	0.17	0.09

Data courtesy Bloomberg

The next table contrasts this data in a z-score format for each metric. The z-score analysis provides the ability to compare the two styles and understand how the growth and value companies compare to the entire S&P 500. As a reminder, the higher or lower the z-score, the more it varies from the average.

Z-score Method						
RIA Pro	Price to Sales	Price to Book	Price to Cash Flow	Price to Earnings	Dividend Yield	Earnings Per Share
Growth	1.43	0.58	0.67	1.48	-0.71	-0.05
Value	-0.61	-0.13	-0.22	-0.52	1.33	0.39

Data courtesy Bloomberg

Results - Total Returns

To calculate returns for the top and bottom 50 stocks, we stretch a bit and assume that the 50 growth and value stocks identified today have been in that realm for the past ten years. While we know that is not entirely the case; it is not unreasonable to think both groups have been in the ballpark. The table below highlights the total returns of each group across various timeframes.

Total Return*							
RIA Pro	YTD TRR (annualized)	1yr TRR	2yr TRR	3yr TRR	5yr TRR	7yr TRR	10yr TRR
Growth	110.92	27.21	27.75	28.82	22.43	21.93	24.83
Value	52.15	-2.56	1.22	4.59	3.48	8.59	11.77
Difference	58.77	29.77	26.53	24.23	18.95	13.34	13.06

*All returns are annualized - Data through April 2019

Data courtesy Bloomberg

Conclusions

The contrast in metrics between growth stocks and value stocks could not be starker. The differentials are incredibly large, which indicates one is either paying eye-watering prices for growth, or they are truly finding value in the value category. The total return performance over each time frame highlights the chasm between investor preferences for growth over value since the financial crisis.

Growth stocks have rewarded investors for taking risk and punished those with a tried and true value approach. While memories are nice, we remind you that as investors we must look forward.

Value stocks provide a large cushion for error, whereas growth stocks are priced for a level of perfection not since the technology bubble. As long as the market remains euphoric, growth will likely continue to outperform value. However, when rationality strikes the market over the head, the ridiculous prices the market assigns to growth stocks will normalize. At the same time, investors will seek out boring companies with steady earnings and relatively cheap valuations that constitute the value sector.