

Quantitative Review of U.S. Equities

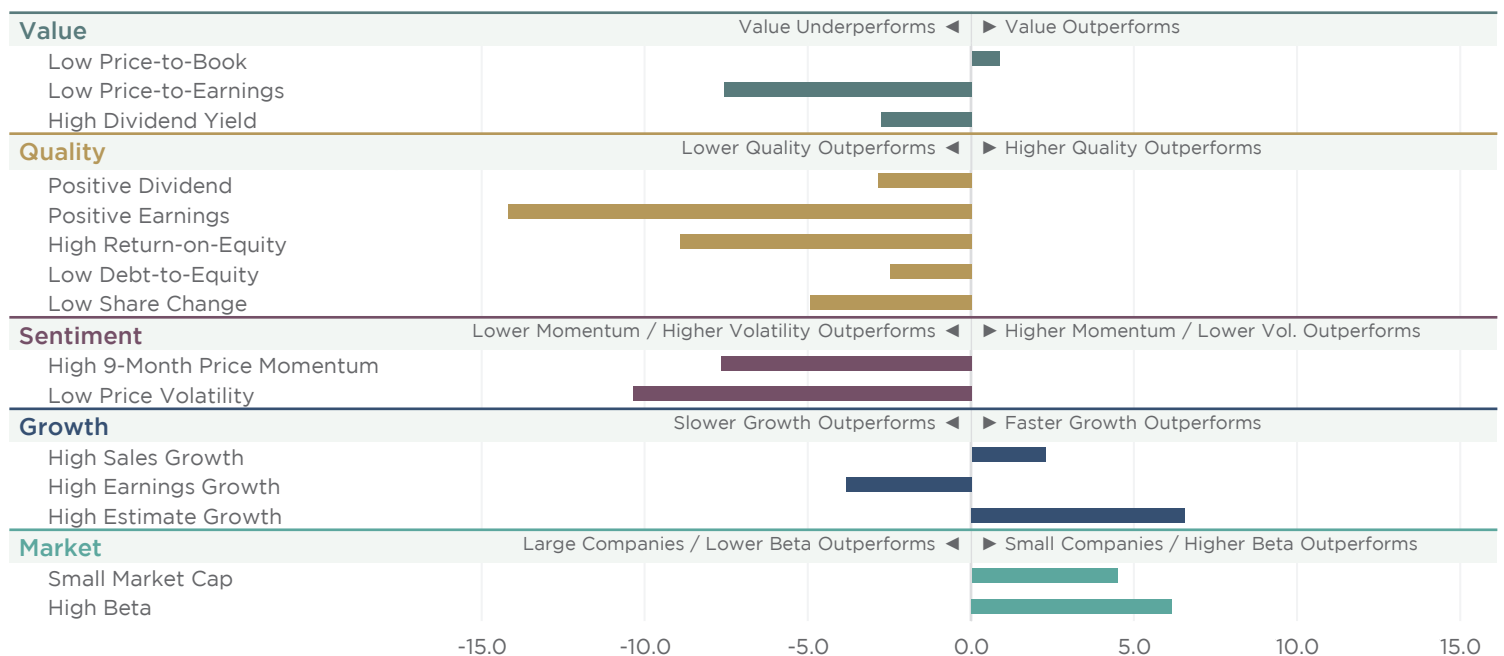
- An improved inflation outlook this quarter led to sharply lower long-term interest rates and a renewed U.S. stock market rally.
- Value factors among large-cap stocks were mixed this quarter. Value has done better within small-cap stocks for the quarter and the year.
- Growth factors continued to perform well in the third and fourth quarters. Earlier in the year, growth performance was concentrated in a few high-profile large-cap names, but in the second half, the growth returns were more widely distributed.
- For 2023, the Russell 1000 Growth Index's 42.7% return is far ahead of the Russell 1000 Value Index's 11.5% gain. Within small caps, the gap is much narrower.
- With the strong fourth quarter market performance, quality factors, which tend to be defensive, fell behind this quarter and trailed year to date in large caps as well.
- Lower momentum stocks performed somewhat better for the quarter and significantly better for the year overall.
- With the strong market gains, smaller cap, higher beta, and more volatile stocks all did better this quarter.
- **Research Spotlight: Market Returns When the Federal Reserve Board (Fed) is Cutting the Federal Funds Rate.** With the prospect of federal funds rate reductions in 2024, we examine how the overall U.S. equity market as well as various segments performed historically when the Fed was reducing rates.

A Note from Brandywine Global's Diversified Equity Team

This paper is the quarterly report by Brandywine Global's Diversified Equity team on quantitative factors impacting the U.S. equity markets. In each publication, we will provide a standardized report on factor behavior for the quarter and year-to-date periods. In addition, we will provide brief comments highlighting important and interesting trends in factor behavior and discuss recent work we are engaged in to better understand these trends. Understanding market performance through the unique lens of factor returns often brings early illumination to equity opportunities as well as areas of risk concentration. We use a longer-term perspective on the behavior of various factor returns to develop Diversified Equity strategies at Brandywine Global.

1 Fourth Quarter 2023 Russell 1000 Index Factor Returns

QTD; % Return Difference Between Factors¹ High and Low Quartiles; Russell 1000 Index; As of 12/31/2023

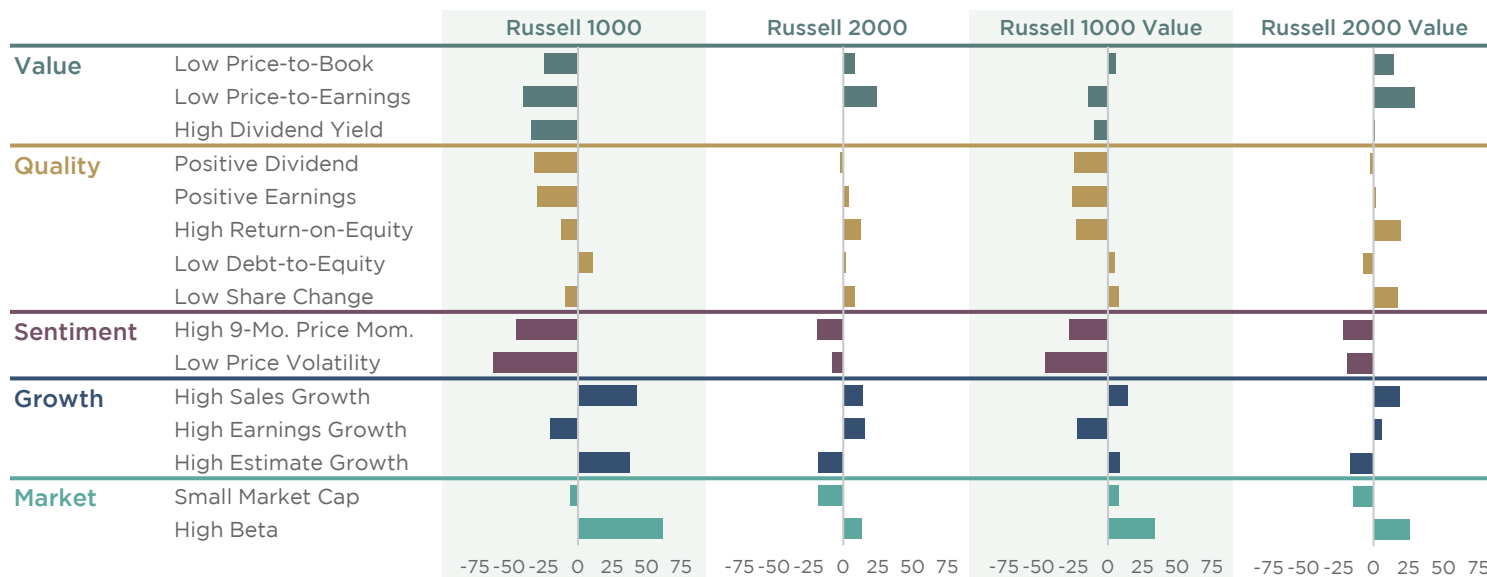


Source: Brandywine Global, FactSet, FTSE Russell

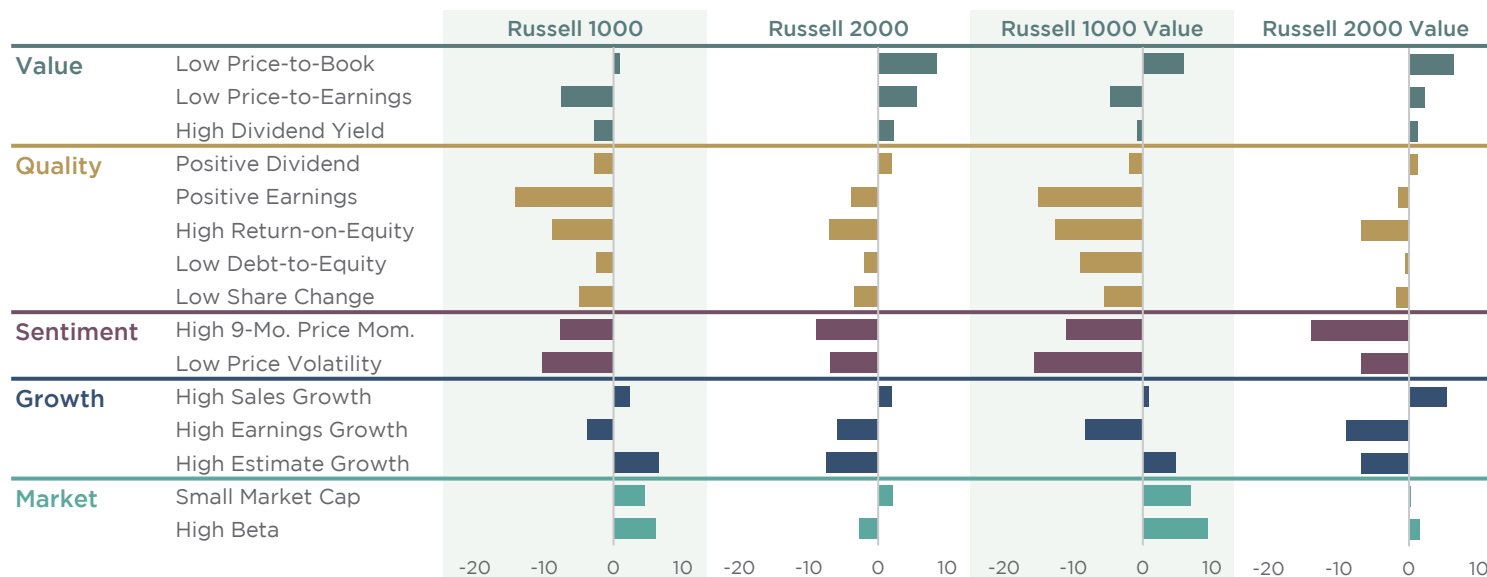


2 | Russell Index 2023 Factor Returns

YTD; % Return Difference Between Factors¹ High and Low Quartiles; As of 12/31/2023



QTD; % Return Difference Between Factors² High and Low Quartiles; As of 12/31/2023



Source: Brandywine Global, FactSet, FTSE Russell

Fourth Quarter 2023 Factor Returns

The U.S. inflation rate fell significantly in the first half of 2023 and, after a small surge in the third quarter, continued to decline in recent reports. Consensus grew that the Fed's July federal funds rate hike would be the last in this cycle and the Fed would begin cutting rates in 2024. Meanwhile, U.S. economic news remains relatively positive, increasing the possibility that inflation could be tamed without triggering a recession. U.S. financial markets responded vigorously to this good news. Ten-year treasury rates fell from their 15-year peak of almost 5.0% early in the quarter to 3.9% at year-end. U.S. stocks also rallied with the Russell 1000 Index gaining 12.0% in the fourth quarter and 26.5% for 2023.

When long-term interest rates rose in the third quarter, the stock market paused, value stocks performed better, and the explosive returns among a concentrated group of growth names slowed. With long-term interest rates falling this quarter, growth names were again the best performers. This growth performance was much less concentrated than in the first half of 2023 when a narrow group



3 Top Ten Contributors to Russell 1000 Index Returns in 2023's First Half

As of 12/31/2023

	2023 Returns			
	First Half	Third Quarter	Fourth Quarter	Full Year
Apple Inc.	49.7%	-9.6%	12.6%	49.0%
Microsoft Corporation	42.7%	-5.6%	19.3%	58.2%
NVIDIA Corporation	189.5%	6.6%	13.9%	239.0%
Amazon.com, Inc.	55.2%	-0.6%	19.5%	80.9%
Meta Platforms Inc.	138.5%	6.6%	17.9%	194.1%
Tesla, Inc.	112.5%	-2.8%	-0.7%	101.7%
Alphabet Inc.	35.7%	9.9%	0.1%	58.8%
Broadcom Inc.	57.1%	-3.2%	35.0%	104.2%
Eli Lilly and Company	28.9%	15.9%	8.7%	60.9%
Advanced Micro Devices, Inc.	75.9%	-7.6%	43.4%	127.6%
Average	78.6%	1.0%	17.0%	107.5%
Russell 1000 Index	16.7%	-3.2%	12.1%	26.4%

Source: FTSE Russell and Bloomberg (© 2024, Bloomberg Finance LP)

low PE quartile underperforming the high PE quartile by 40%. However, for small-cap stocks, lower PE stocks beat high PE stocks by almost 25%, indicating that where the large growth names did not dominate, value led the market.

Similarly, though not as dramatically, growth factor returns differed between large- and small-cap stocks. For instance, the quartile of stocks with the highest sales growth in the Russell 1000 Index outperformed the low sales growth companies by 43% year to date, while among small caps, the high sales stocks outperformed the low sales growth stocks by only 14%. For high estimated

earnings stocks, within large caps, the highest group returned 38% while in small caps, the direction reversed with low estimate companies doing better by 18%. These differences appear in the Russell index returns for the year, shown in **FIGURE 4**, where the Russell 1000 Growth Index (up 42.7%) massively outperformed the Russell 1000 Value Index's 11.5% gain. However, the gap narrows for the Russell 2000, with the growth index outperforming the value index by only 4.0% in 2023.

4 Russell Value & Growth Index

As of 12/31/2023

	2023			
	Fourth Quarter		Year to Date	
	Growth	Value	Growth	Value
Russell 1000 Index	14.2%	9.5%	42.7%	11.5%
Russell Midcap Index	14.6%	12.1%	25.9%	12.7%
Russell 2000 Index	12.8%	15.3%	18.7%	14.7%
Russell Microcap Index	15.6%	16.3%	9.1%	8.9%

Source: FTSE Russell

stocks, including Meta, Nvidia, Amazon, and Advanced Micro Devices, were top quartile in sales growth but actually bottom quartile for earnings growth. Strong sales growth without corresponding earnings growth coupled with stretched valuations suggests these stocks might have difficulty sustaining their recent performance run.

Quality factors, such as positive dividend, positive earnings, high return-on-equity, and low share change, often perform defensively and outperform in down markets. Therefore, the higher-quality stocks generally lagged in the first half of the year when the stock market rallied, performed better in the third quarter's weaker returns, and trailed again this quarter when the market once more turned sharply positive. As with other factors, this effect was greatest in large caps where the market gains were largest and less so in smaller caps. Within smaller caps, many of the quality factors actually produced positive returns for the year.

Smaller-market cap, higher beta, and higher stock price volatility are all factors that tend to do well in up equity markets. These factors mostly followed this pattern, performing well in the 2023's first half, lagging in the third quarter, then again outperforming this quarter. The exception was for smaller caps in the first half and, thus, also year to date, where large growth stocks were

of large tech stocks dominated returns. For the year, however, these stocks' remarkable performance in the first half remained a primary contributing factor to 2023 market returns and factor behavior. **FIGURE 3** shows the extraordinary gains from the top contributors to the Russell 1000 Index return in 2023 and how their returns were more in line with the rest of the market in the third and fourth quarters.

This quarter, when growth returns were less concentrated in the largest growth stocks, value returns generally were mixed within large cap with low price-to-earnings (PE) negative but low price-to-book positive. Within small cap, both value factors outperformed. Value factors are not necessarily the direct opposite of growth factors, but when growth does as well as it did in early 2023, value returns are likely to suffer. The concentration of the growth performance in larger stocks is apparent in the year to date differential between value factor returns within large-cap and small-cap stocks. For the year, large-cap value factors were very negative with, for example, the

low PE quartile underperforming the high PE quartile by 40%. However, for small-cap stocks, lower PE stocks beat high PE stocks by almost 25%, indicating that where the large growth names did not dominate, value led the market.

Within the growth factors, high earnings growth was the only one that underperformed among large caps for the year and quarter. A number of this year's best performing tech-related



5 Russell U.S. Index

As of 12/31/2023

	2023	
	Fourth Quarter	Year to Date
Russell 1000 Index	12.0%	26.5%
Russell Midcap Index	12.8%	17.2%
Russell 2000 Index	14.0%	16.9%
Russell Microcap Index	16.1%	9.3%

Source: FTSE Russell

nearly alone in boosting stocks' returns so that small caps did not fully participate in 2023's bull market. **FIGURE 5** shows that in the Russell indices small caps did outperform in this quarter's rally but still trailed significantly in 2023 due to their underperformance earlier in the year.

Price momentum factors were strongly negative year to date with high momentum stocks lagging low momentum by 40% in the Russell 1000 Index and 20% in the Russell 2000 Index.

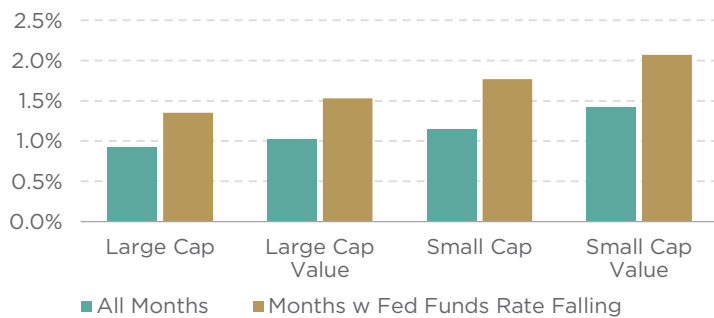
These returns reflect the poor performance of growth stocks in

2022 followed by their powerful turnaround this year. For the fourth quarter, many tech stocks were now high momentum due to their early 2023 returns. These stocks generally outperformed in the fourth quarter, but a strong rebound in the lowest momentum financials, industrials, and consumer discretionary stocks enabled the low momentum group to generate better returns.

Research Spotlight: Market Returns When the Fed is Cutting the Federal Funds Rate

6 Average Monthly Returns

As of 12/31/2023



Source: Factset, Compustat, Brandywine Global, and Board of Governors of the Federal Reserve System (US), Federal Funds Effective Rate [FEDFUNDS], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/FEDFUNDS>, January 3, 2024.

As inflation fell back toward the Fed's 2.0% target range, speculation increased that the Fed has finished raising the short-term federal funds rate and would begin lowering rates as early as in 2024. We examine previous periods when the Fed was cutting short-term rates to see how the U.S. equity market in general, as well some particular segments, performed during this phase of the interest rate cycle. **FIGURE 6** shows the average monthly return for all large-cap stocks and all small-cap stocks and value stocks within each group when the Fed was lowering the federal funds rate. We define value in this study as stocks in the lowest 35% of the universe either by price-to-earnings or price-to-book. Across the market cap and style spectrum, the U.S. markets performed better on average in periods of Fed rate cutting than on average for all periods. In addition, value stocks and small-cap stocks outperformed by a greater degree on average during these periods.

7 Russell 1000 Growth Index / Russell 1000 Value Index

As of 12/31/2023



Source: FTSE Russell & Brandywine Global

The potential for better value outperformance if the Fed begins lowering its short-term rate in 2024 further increased due to the current relative valuations of value and growth stocks in the U.S. equity markets. **FIGURE 7** shows the relative weighted average price-to-book ratio for the Russell 1000 Growth Index versus the Russell 1000 Value Index since 1997. With growth's strong 2023 resurgence, growth stocks' relative valuation is once again higher than during the peak of the 1999-2000 tech bubble, suggesting that growth stocks are more likely to underperform value going forward. Of course, these findings are no guarantee of imminent value strength, yet they do seem to favor value investing as the Fed initiates interest rate cuts.

¹ Factor returns represent return differences between top quartile (75%) and low quartile (25%) equities by each characteristic. Market: Market Capitalization and Market Beta (Market Sensitivity Coefficient); Value: Price-to-Earnings (P/E based on trailing 12-month operating earnings), Price-to-Book, Dividend Yield (Among dividend-paying stocks); Quality: Positive Earnings (Positive earnings stocks - Stocks with no earnings), Positive Dividend (Dividend-paying stocks - Stocks with no dividend), Share Change (12-month change in shares outstanding), Return-on-Equity, Debt-to-Equity; Sentiment: Price Momentum (9-month price change), Price Volatility; and Growth: Earnings Growth (1-year earnings growth), Sales Growth (1-year sales growth).

Data for Russell Index simulation prior to 1985 is obtained from Compustat (©2024) through FactSet Research (©2024) using Alpha Tester and CRSP NYSE Market Capitalization Decile information, all of which is believed to be reliable and accurate. FactSet provides fundamental stock and return calculations. Compustat provides fundamental stock information and price history. CRSP (Center for Research in Security Pricing) provides historical market capitalization groupings based on NYSE listed companies. Backtest simulation of index first calculates the top 1,000 stocks by market capitalization or the equivalent NYSE market-cap decile cut point to produce the same relative market capitalization range in earlier years when there were fewer listed companies. The value index is calculated using the lower half of companies in the market-cap range when ranked by price-to-book value. Rebalancing occurs annually at the end of June to maintain consistency with the Russell methodology. FTSE Russell was not involved in the simulation of the index prior to 1985. The views expressed represent the opinions of certain portfolio managers at Brandywine Global Investment Management, LLC ("Brandywine Global") and are not intended as a forecast or guarantee of future results. The opinions expressed above may be contrary to active positioning within one or more of Brandywine Global's strategies managed by a separate investment team. Data contained in this report is obtained from sources believed to be accurate and reliable. Brandywine Global will not undertake to supplement, update or revise such information at a later date. This information should not be considered a solicitation or an offer to provide any Brandywine Global service in any jurisdiction where it would be unlawful to do so under the laws of that jurisdiction. It should not be assumed that investments in any of the sectors or industries listed were or will prove profitable. The Russell 1000 Index measures the performance of the large-cap value segment of the U.S. equity universe. The Russell 2000 Index measures the performance of the small-cap value segment of the U.S. equity universe. The Russell 1000 Value Index and Russell 2000 Value Index include those companies with lower price-to-book ratios and lower forecasted growth values. The Russell 1000 Growth Index and Russell 2000 Growth Index include companies with higher price-to-book ratios and higher forecasted earnings growth values within their respective broad universes. The Russell Midcap Index measures the performance of the mid-cap segment of the U.S. equity universe. The Russell Microcap Index measures the performance of the microcap segment of the U.S. equity market. There is no guarantee that holding securities with relatively high (or low) price-to-earnings, price-to-book, or price-to-cash flow ratios will cause a security to outperform its benchmark or index. Standard and Poor's 500 Index is a capitalization-weighted index of 500 stocks. The index is designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries. Standard & Poor's S&P 500® Index is a registered trademark of Standard & Poor's, a division of the McGraw-Hill Companies Inc. Indices are unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

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