# Quantitative Review of U.S. Equities

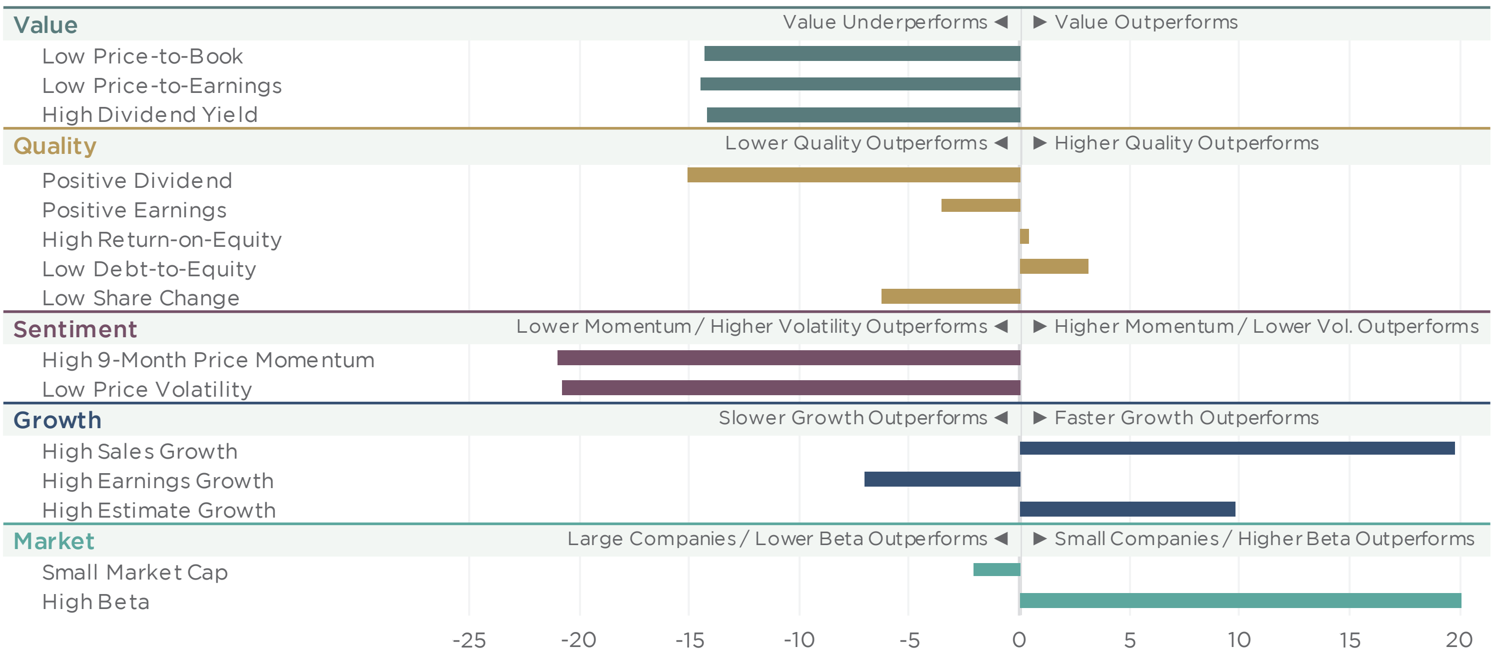
- Despite the regional banking crisis in March, the broad U.S. equity market rose in the first quarter with the S&P 500 gaining 7.5%.
- The price momentum factor had been very positive in 2022, but this quarter was marked by strong stock price reversal. Many companies, industries, sectors, and factors that underperformed in 2022 did well in early 2023.
- For example, growth factors did poorly last year but most were strong leaders so far this year. At the same time, value factors outperformed in 2022 but lagged badly this quarter, particularly among large cap stocks.
- The Russell 1000 Growth Index rose 14.4% while the Russell 1000 Value Index gained only 1.0%.
- Returns on quality factors generally were negative, which is consistent with the positive market returns for the quarter.
- Smaller cap returns were generally negative. However, higher beta stocks did well, which would be expected in a rising stock market.
- **Research Spotlight: The Inverted Yield Curve and Market Returns.** In October 2022, the yield on the 3 Month Treasury Bill rose above the yield on the 10 Year Treasury Note and has become more deeply inverted this year. We examine what such an inverted yield curve historically signals for economic and stock market performance.

## 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 First Quarter 2023 Russell 1000 Index Factor Returns

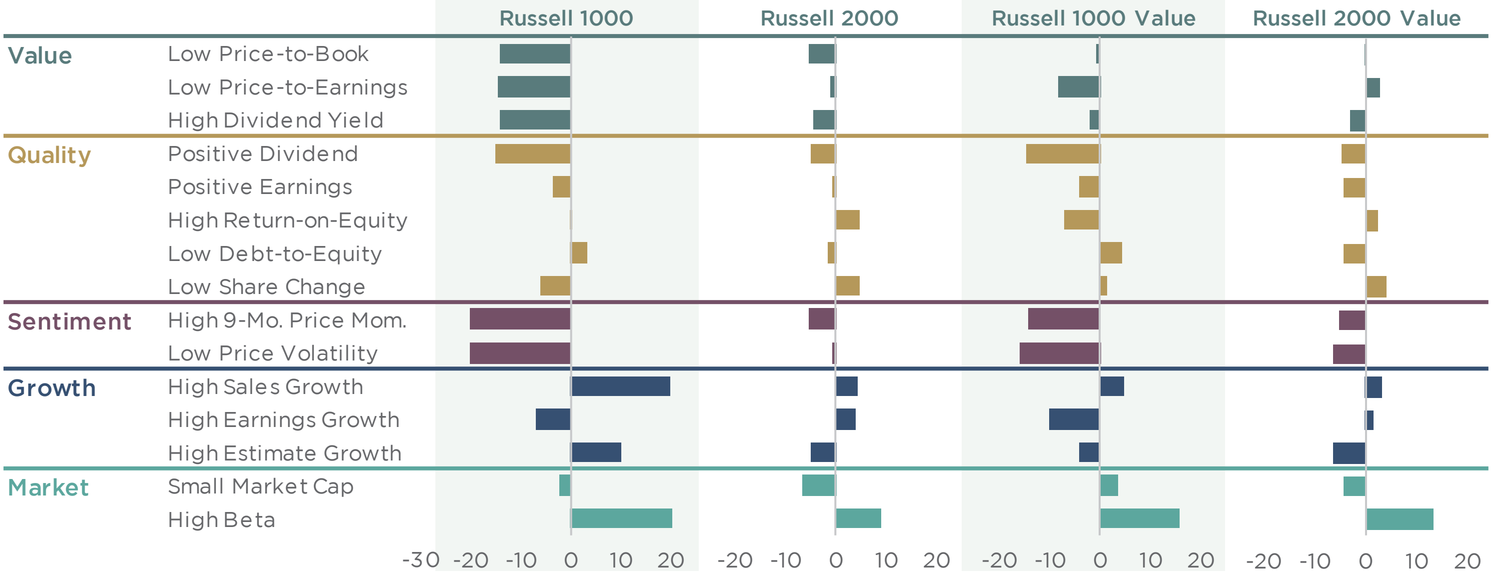
QTD; % Return Difference Between Factors'[1] High and Low Quartiles; Russell 1000 Index; As of 3/31/2023




Source: Brandywine Global, FactSet, FTSE Russell

2 | **Russell Index 2023 Factor Returns**

**YTD**; % Return Difference Between Factors[1] High and Low Quartiles; As of 3/31/2023



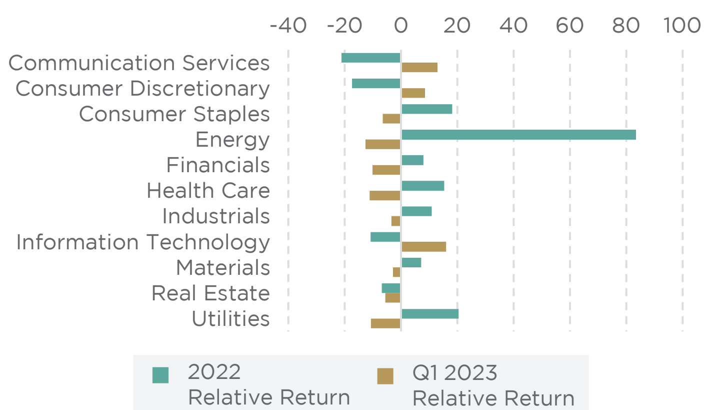

Source: Brandywine Global, FactSet, FTSE Russell

## First Quarter 2023 Factor Returns

Perhaps in anticipation that the Federal Reserve was nearing the end of its short-term rate hikes and optimism grew for a softer landing, the broad U.S. market rallied in late 2022 and early 2023. While the failure of Silicon Valley Bank and Signature Bank in early March initially triggered a market decline, stocks rebounded to close out the quarter as the banking crisis showed signs of stabilizing, though financials generally did not participate in this rally. The S&P 500 registered a 7.5% gain in the first quarter after rising 7.6% in the fourth quarter of 2022.

Although the broad market rose significantly in both quarters, the stocks, sectors, and factors driving the returns were quite different in the two periods. These changes can be seen in the strong negative return to the stock price momentum factor this quarter. Within the Russell 1000 Index, this factor had the largest negative return as the market leaders from 2022 were strong laggards this quarter. On a sector level, nearly every sector reversed its relative performance from 2022 to 2023. **FIGURE 3** shows each sector's relative return versus the Russell 1000 Index in the two periods. For most sectors, the performance direction reversed from 2022 to 2023. Those sectors that were positive performers earlier now lagged and the those that trailed last year were now the best performers.

3 | **Sector Return Relative to the Russell 1000 Index**




Source: Brandywine Global, FactSet, FTSE Russell

This stock price reversal can also be seen in the changes in factor performance this quarter. Growth factors were mostly negative last year but mostly positive in 2023, including high sales growth and high estimate growth. While longer term interest rates were volatile this quarter, the yield on the 10 Year U.S. Treasury Note eventually fell 41 basis points after rising substantially in 2022. Growth stock prices depend more on longer term earnings growth prospects. Therefore, when longer term interest rates rise, these prospects are valued less, and growth stocks often underperform. However, when the interest rates decline, growth stocks benefit. This impact was evident for large cap, high-profile growth names in technology, social media, and on-line retailing. **FIGURE 4** shows the strong price reversal among the FAANG stocks from 2022 to 2023.

The value factors of low price-to-earnings and low price-to-book experienced the opposite performance pattern. While these factors performed very well last year, they trailed badly this quarter. Low PE and low PB financials were one major contributor to these poor returns as the regional banking crisis hit these stocks particularly hard and they did not rally with the rest of the market at quarter-end. Energy stocks also were weaker as oil prices moderated this quarter. Meanwhile, the higher valuation growth stocks did very well, producing the large negative gap between stocks with high and low valuations. **FIGURE 5** shows the strong performance differential in the first quarter between the Russell Growth and Value indices.

When the equity market rises sharply, quality factor returns can be negative as their typically defensive characteristics are unattractive. Returns on positive earnings, positive dividends, high return on equity, and low share change were negative to neutral in most of the Russell U.S. indices in the first quarter. Many technology and social media stocks currently have lower quality attributes so their strong first quarter returns primarily drove the poor performance by higher quality factors.

The combination of strong returns from large cap growth names and weak returns from smaller banks generally led to a negative return to the small cap factor, even though small caps often do well in positive markets. **FIGURE 6** shows the Russell Index returns by market cap segment, with larger caps doing best. Higher beta stocks, on the other hand, did very well this quarter as this factor has significant representation among the growth names which performed so strongly.

### 4 FAANG Stocks Returns

As of 3/31/2023

| | 2022 Return | 2023 Q1 Return |
|---|---|---|
| Facebook/Meta | -64.2% | 76.1% |
| Apple | -26.4% | 27.1% |
| Amazon | -49.6% | 23.0% |
| Netflix | -51.1% | 17.2% |
| Google/Alphabet | -38.7% | 17.2% |
| Microsoft | -28.0% | 20.5% |
| Tesla | -65.0% | 68.4% |
| Russell 1000 Index | -19.1% | 7.4% |

Source: Bloomberg (© 2023, Bloomberg Finance LP)

### 5 Russell Growth & Value Index Returns

As of 3/31/2023

| | 2023 Q1 | |
|---|---|---|
| | Growth | Value |
| Russell 1000 Index | 14.4% | 1.0% |
| Russell Midcap Index | 9.1% | 1.3% |
| Russell 2000 Index | 6.1% | -0.7% |
| Russell Microcap Index | 0.8% | -5.2% |

Source: FTSE Russell

### 6 Russell Index Returns by Size

As of 3/31/2023

| | 2023 Q1 |
|---|---|
| Russell 1000 Index | 7.5% |
| Russell Midcap Index | 4.1% |
| Russell 2000 Index | 2.7% |
| Russell Microcap Index | -5.2% |

Source: FTSE Russell

## Research Spotlight: Inverted Yield Curve and Market Returns

In late October 2022, the yield on the 3-Month Treasury Bill rose above the yield on the 10-Year Treasury Note and has steepened through 2023. Historically, such an inverted yield curve has usually been the result of the Federal Reserve's efforts to raise short term rates in an attempt to bring surging inflation under control. The Fed raised the fed funds rate nine times beginning in March 2022 and the current inverted yield is an expected outcome from the Fed's aggressive tightening efforts. The inverted yield curve is also seen as a potential signal of an economic slowdown and equity market underperformance as rising short term rates inhibit economic activity. We examine past periods with an inverted yield curve to identify the historical economic and stock market consequences.

**FIGURE 7** shows dates when the 3-Month Treasury Bill / 10-Year Treasury Note first inverted looking back to the 1960's. The table also shows the start date for any economic recession, as identified by the National Bureau of Economic Research, that began within two years of when the curve first inverted. In 8 of 10 of these prior periods, the U.S. economy fell into a recession within two years of the inversion and on five occasions the recession began within one year. Also, the U.S. economy was already in a recession when the yield curve inverted in January 1970.

**FIGURE 8** shows the average returns for the Russell 1000 Index for the six months and one year after the yield curve first inverted, compared to the average return for the index in all periods. For both the six months and one year after the yield curve inverted, market returns were significantly lower than the long-term market average.

Note that in the five months from the end of October 2022 through the end of March 2023, the Russell 1000 Index returned 6.6%, which is slightly better than long run six-month average and much better than the historical average six months after the yield curve inverted. This difference may be related to the economic resilience the U.S. has experienced since the Fed began raising short-term rates. For instance, unemployment near cycle lows at 3.5% is not yet suggesting that the economy is close to a recession. We will see whether the Fed's efforts and the recent inverted yield curve leads to an economic slowdown and lower stock market returns or if this cycle is able to avoid the compelling historical precedent.

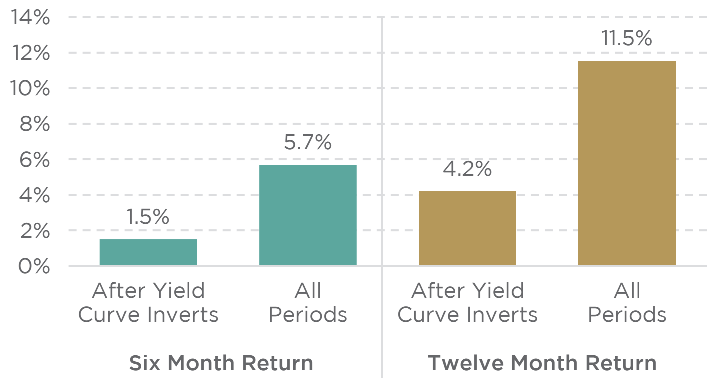
## 7 Yield Curve Inversions & Recessions

| Yield Curve Inverts | Recession Begins | Time Until Recession Begins |
|---|---|---|
| September 1966 | | |
| January 1969 | December 1969 | 11 Months |
| January 1970 | | |
| June 1973 | November 1973 | 5 Months |
| December 1978 | January 1980 | 13 Months |
| November 1980 | July 1981 | 8 Months |
| June 1989 | July 1990 | 13 Months |
| July 2000 | May 2001 | 10 Months |
| August 2006 | December 2007 | 16 Months |
| May 2019 | February 2020 | 8 Months |

Source:
- Federal Reserve Bank of St. Louis, 10-Year Treasury Constant Maturity Minus 3-Month Treasury Constant Maturity [T10Y3M], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/T10Y3M, April 10, 2023.
- FTSE Russell
- Brandywine Global Investment Management

## 8 Russell 1000 Index Returns

1962 - 2022




Source:
- Federal Reserve Bank of St. Louis, 10-Year Treasury Constant Maturity Minus 3-Month Treasury Constant Maturity [T10Y3M], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/T10Y3M, April 10, 2023.
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[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 (©2021) through FactSet Research (©2021) 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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