Quantitative Review of U.S. Equities

Brandywine GLOBAL
A Franklin Templeton Company

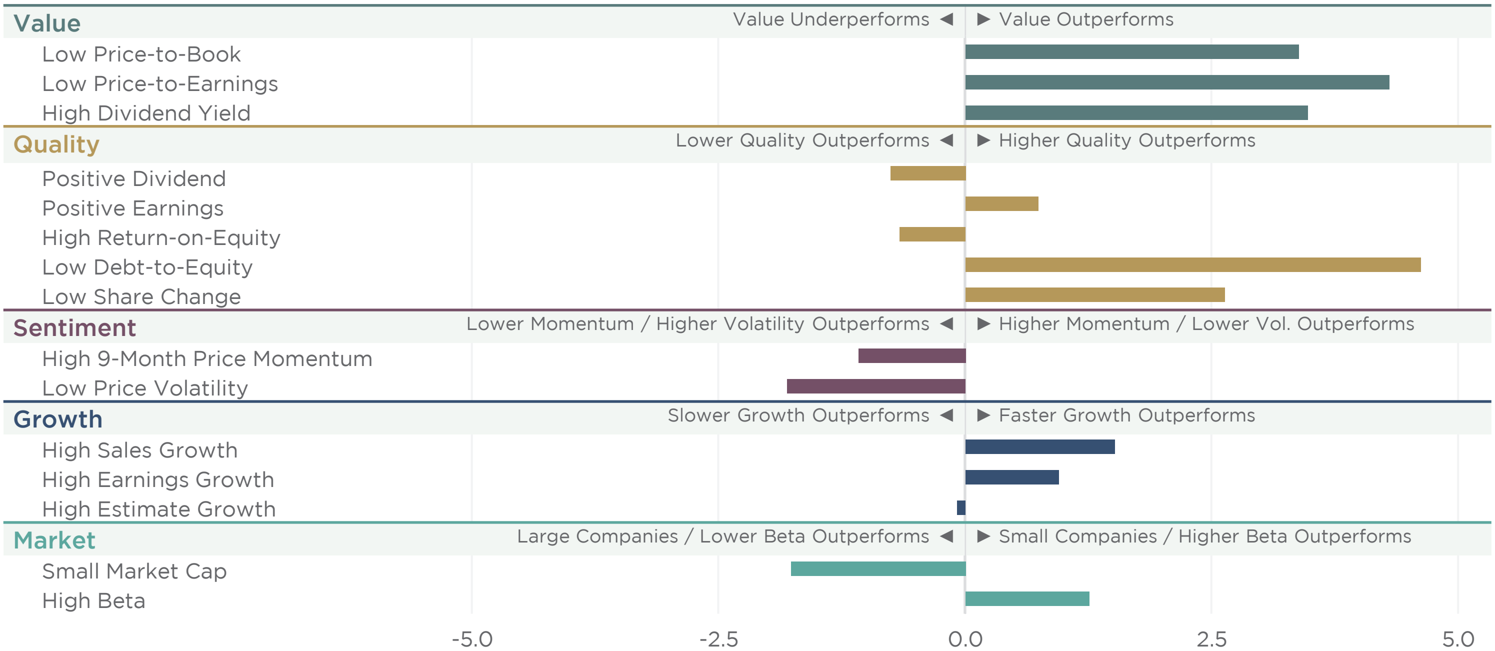
- After the U.S. stock market's strong 2023 first half, continued recession and inflation concerns finally led to a market pullback in the third quarter.
- Value factors were extremely negative in the first half but were positive this quarter. Year-to-date value factors remain quite negative in large cap but are mostly positive among small caps.
- Growth factors, so strongly positive in the first half, continued to do well this quarter. High sales growth has been a strong performer across the asset classes, while high earnings growth did better in small caps, and high estimate growth outperformed in large caps.
- Year to date, the Russell 1000 Growth Index's 25.0% return is well ahead of the Russell 1000 Value's 1.8% gain. Within small caps, the gap is narrower.
- Given the market decline this quarter, the defensive quality factors were generally positive. For the year, these factors are mostly negative in large caps, where returns were the strongest, but more positive in small caps, where returns were weaker.
- Higher beta and greater price volatility stocks, which usually suffer in a down market, were positive within the Russell 1000 and generally negative in the other indices.
- With growth continuing to do well despite the reversal of value factors, the price momentum factor was only slightly negative for the quarter, although very negative year to date.
- **Research Spotlight: Performance Concentration in 2023 & Examining the End of Yield Curve Inversion.** The strong returns by the broad market in the first half of 2023 was driven by a small number of growth stocks. With the market's third quarter decline and value stocks reversing their performance, we analyze the growth stocks returns in the third-quarter. We also look at what the end of a yield curve inversion meant historically for recessions and market returns.

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 Third Quarter 2023 Russell 1000 Index Factor Returns

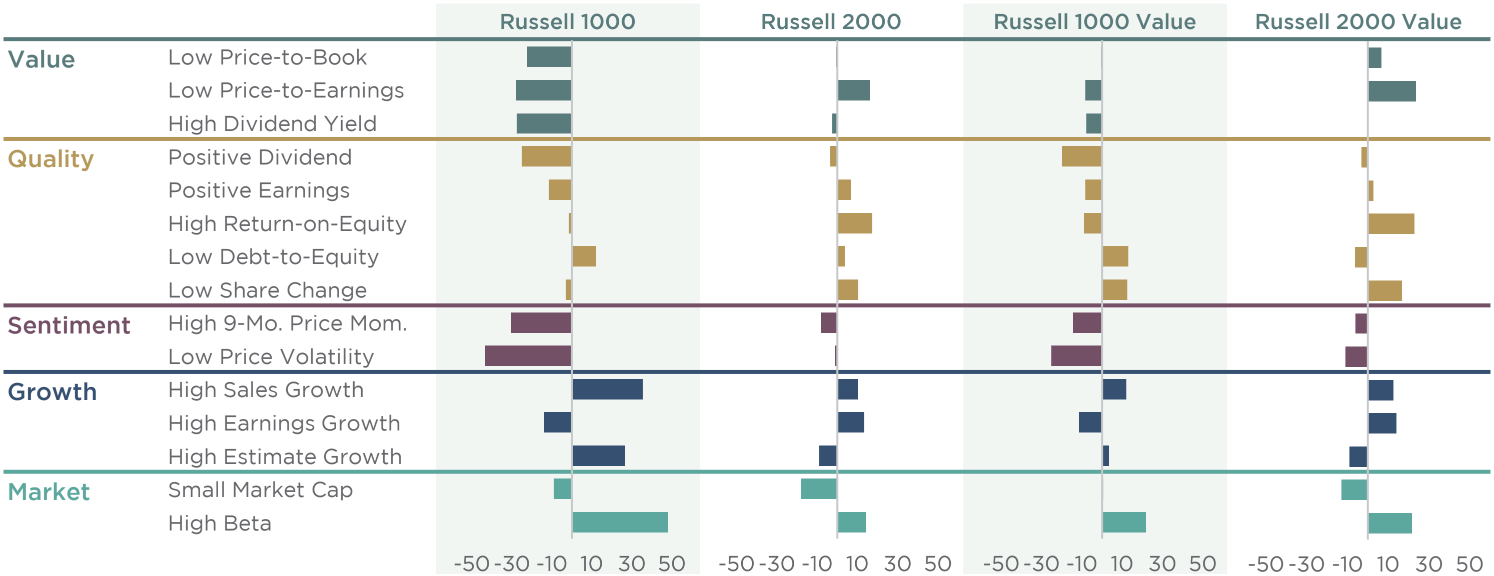
QTD; % Return Difference Between Factors'[1] High and Low Quartiles; Russell 1000 Index; As of 9/30/2023



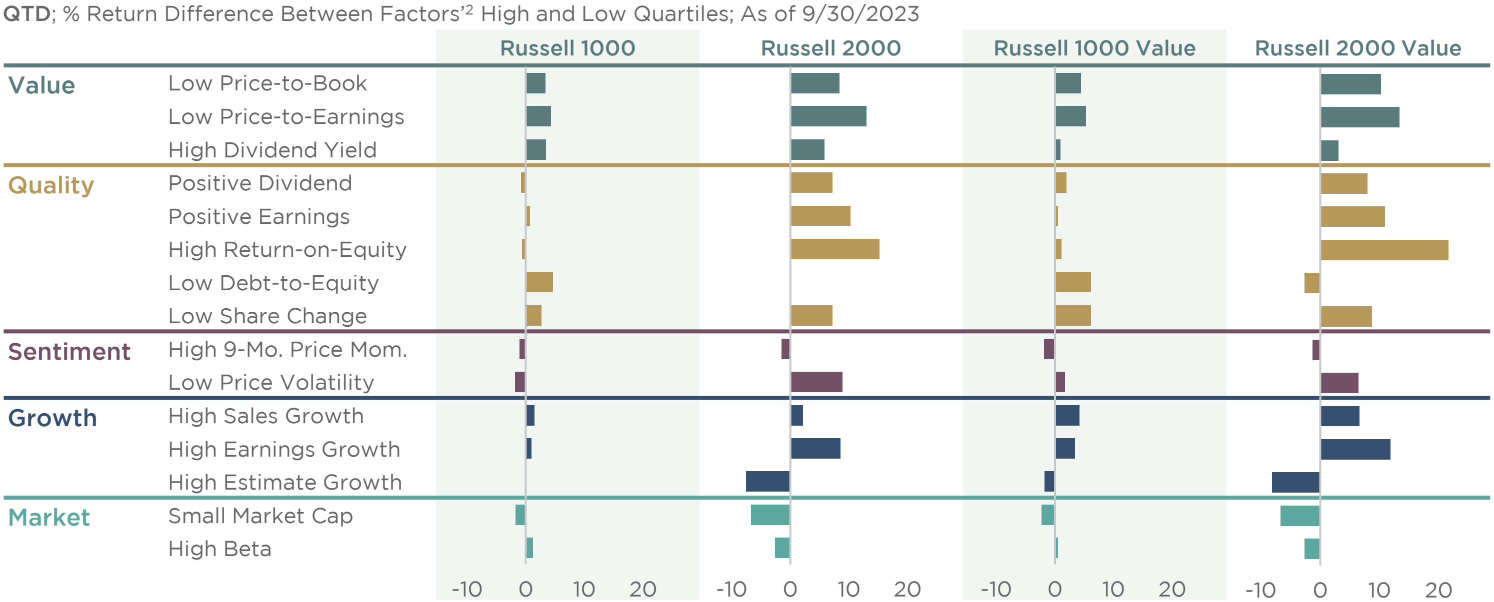
Source: Brandywine Global, FactSet, FTSE Russell

2 Russell Index 2023 Factor Returns

YTD; % Return Difference Between Factors'[1] High and Low Quartiles; As of 9/30/2023



QTD; % Return Difference Between Factors'[2] High and Low Quartiles; As of 9/30/2023



Source: Brandywine Global, FactSet, FTSE Russell

Third Quarter 2023 Factor Returns

While inflation is down significantly from its mid-2022 peak near 9.0%, this quarter the annual rate bounced to 3.7% from 3.0%, still well above the Federal Reserve's (Fed's) long-term target of 2.0%. The Fed did raise the federal funds target rate by 25 basis points in July to an upper bound of 5.5% and did not rule out another increase later in the fall. With persistent inflation, the yield on 10-Year Treasury reached 4.57%, rising from 3.84% on June 30, its highest level since 2007 before the 2008 financial crisis. The higher rates fueled continued speculation about a coming economic recession, though the labor market showed little signs of an imminent economic decline. These negative events finally impacted the U.S. equity market, where the Russell 1000 Index rose 16.9% in the first half but was off 3.3% in the third quarter for a still respectable year-to-date gain of 13.1%.

The first half of 2023's strong equity returns were driven primarily by a narrow group of technology-oriented growth stocks. For instance, in this period, information technology stocks gained 44.7% in the Russell 1000 Index, interactive media stocks were up 56.2%, and Amazon rose 55.2%. Over the same period, the worst-performing groups included value-oriented sectors, such as energy and financials, down 5.9% and up 2.9%, respectively. This quarter, energy and financials were two of only three broad sectors generating positive returns as well as outperforming the Russell 1000 with gains of 12.6% and 0.1%, helping boost the turnaround in value factors. However, the growth stocks with extraordinary gains in the first half did not fair badly in the third quarter. Technology stocks in the Russell 1000 Index were off only 5.0%, Amazon was down 2.5%, and the interactive media industry actually rose 7.3%. Technology stocks outperformed by 28% in the first half but lagged by only 2% this quarter.

3 Russell Value & Growth Index

As of 9/30/2023

	2023			
	Third Quarter		Year to Date	
	Growth	Value	Growth	Value
Russell 1000 Index	-3.1%	-3.2%	25.0%	1.8%
Russell Midcap Index	-5.2%	-4.5%	9.9%	0.5%
Russell 2000 Index	-7.3%	-3.0%	5.2%	-0.5%
Russell Microcap Index	-12.0%	-5.6%	-5.7%	-6.4%

Source: FTSE Russell

For the year within the broad large-cap market, the growth factors of high sales growth and high estimates growth are very strongly positive due to that small group of technology-oriented stocks with extremely high returns in the first half. High earnings growth was weaker because several high-performing technology names, such as NVIDIA Corp., actually fall within the lowest earnings growth group. Within small cap, high sales growth and high earnings growth have done well while high estimate growth lagged. None of the growth factors were as powerful within small cap as in large caps as the very strong returns were concentrated in the large growth names. Value factors have not come close to erasing their 2023 deficit with larger stocks, but within smaller caps, the underperformance was less earlier in the year, and value has done better this quarter. **FIGURE 3** shows the Russell Index impact of the value and growth factor performance across various cap groups for the quarter and year. In the quarter, the Russell 1000 Growth and Russell 1000 Value Indices had nearly the same return while in the smaller-cap indices, the value index outperformed. For the year in the Russell 1000, the spread between growth and value is extremely wide (25.0% versus 1.8%) while in the smaller-cap indices, the gap is much narrower. This performance again reflects the market's performance concentration in a narrow group of large-cap growth stocks earlier this year.

4 Russell U.S. Index

As of 9/30/2023

	2023	
	Third Quarter	Year to Date
Russell 1000 Index	-3.2%	13.0%
Russell Midcap Index	-4.7%	3.9%
Russell 2000 Index	-5.1%	2.5%
Russell Microcap Index	-7.9%	-5.8%

Source: FTSE Russell

Factors that tend to underperform in down markets, such as smaller market cap, higher beta, and high stock price volatility, did lag this quarter in most of the indices. Higher beta and high stock volatility conversely did well year to date due to the earlier market gains, particularly in large caps. However, smaller-cap stocks still trailed in the market rally earlier in 2023, even though smaller stocks tend to do well when the market rises. This result is an indication of the unusual market in the first half when the small group of large-cap growth stocks' extraordinary performance was detached from the rest of the market's returns. **FIGURE 4** shows some small underperformance in the smaller Russell indices for the quarter (particularly the Russell Microcap Index) and the much larger underperformance year to date, even though the broad market was up.

Quality factors such as positive dividend, positive earnings, high return-on-equity, and low share change also generally do well in down markets and were mostly positive performers this quarter. The factors did best in the smaller caps where the returns were worst. For the year, the quality factors were more negative in the large-cap stocks with their strong year-to-date performance and more positive in the smaller caps, which have lower 2023 returns to date.

The price momentum factor was slightly negative this quarter as the value factors did reverse while growth factors generally continued their performance trend from earlier this year. For the year, price momentum is very negative particularly among the largest-cap companies in the Russell 1000. This performance reflects the large swing in factor returns from 2022 to 2023 as value did very well last year as growth lagged, with a complete returns reversal this year.

Research Spotlight: Performance Concentration in 2023 & Examining the End of Yield Curve Inversion.

As we discussed last quarter, the U.S. equity market's strong first half performance was extremely narrow with the top 10 contributors providing 10.4% of the index's 16.7% gain. With this quarter's decline in the index of 3.2%, we might expect a sharp reversal in these high-returning stocks from mostly technology-focused sectors. However, **FIGURE 5** shows that while some of these stocks underperformed in the third quarter, the size of the underperformance was quite small. The best-performing stocks earlier in the year, NVIDIA and Meta, actually continued to outperform with positive third-quarter returns. This outcome is particularly surprising given the sharp rise in long-term interest rates, with the 10-year Treasury rising to 4.57% from 3.84% in the quarter. Growth stock valuations rely more heavily on rising future earnings, but those future earnings have a lower value as interest rates increase. The third-quarter returns for many of these growth names run counter to this usually important influence on stock prices.

In an earlier letter, we discussed the impact of an inverted yield curve (short-term government rates exceed long-term rates) on economic activity 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 the gap widened to 189 basis points in May 2023. While the 10-year yield rose sharply last quarter and into the fourth quarter, T-bills yields were stable, resulting in the spread narrowing to 78 basis points early in October. While the inversion has not disappeared, we analyzed what historically have been implications of a return to a more normal yield curve relationship. **FIGURE 6** shows that the onset of a recession occurred on average much closer to the end of the yield curve inversion than to when short rates first exceeded long rates. This result may be merely coincidence since the recession on average occurred about 10 months after the yield curve inverted, or it could be a more meaningful relationship. For instance, the recession may lead to a lowering of credit demand and a decline in short rates. Alternatively, Fed efforts to lower inflation may have been successful, causing short rates to decline but also triggering a recession. Of course, the historical record contains a great deal of variability and does not guarantee any particular outcome this cycle.

FIGURE 7 depicts the historical returns once the yield curve inversion ends. Initially, the market has on average underperformed in the first six months after a return to a standard yield curve. However, the full 12 months after had closer to typical annual market returns, suggesting a quick rebound from any market weakness or dislocation occurring near the end of the yield curve inversion. Again, past cycles present significant variability and may not be a good predictor for today's developments.

5 Top 10 Contributors to Russell 1000 Index Returns in 2023's First Half As of 9/30/2023

	Returns	
	First Half 2023 Return	Third Quarter 2023
Apple Inc.	49.7%	-9.6%
Microsoft Corporation	42.7%	-5.6%
NVIDIA Corporation	189.5%	6.6%
Amazon.com, Inc.	55.2%	-0.6%
Meta Platforms Inc.	138.5%	6.6%
Tesla, Inc.	112.5%	-2.8%
Alphabet Inc.	35.7%	9.9%
Broadcom Inc.	57.1%	-3.2%
Eli Lilly and Company	28.9%	15.9%
Advanced Micro Devices, Inc.	75.9%	-7.6%
Russell 1000 Return	**16.7%**	**-3.2%**

Source: Brandywine Global, FactSet, FTSE Russell

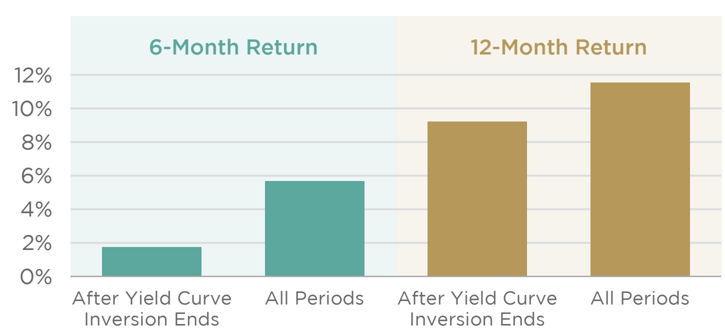
6 Yield Curve Inversion Timeline Comparison to Beginning of Recession As of 9/30/2023

Yield Curve Inverts	Recession Begins	Time Until Recession Begins	Yield Curve Inversion Ends	Time Until Recession Begins
Sep. 1966	--	--	--	--
Jan. 1969	Jan. 1970	12 Months	Feb. 1969	11 Months Later
Jan. 1970	--	--	--	--
Jun. 1973	Dec. 1973	6 Months	Jul. 1974	7 Months Prior
Dec. 1978	Feb. 1980	14 Months	May. 1980	3 Months Prior
Nov. 1980	Aug. 1981	9 Months	Sep. 1981	1 Month Prior
Jun. 1989	Aug. 1990	14 Months	Sep. 1989	11 Months Later
Jul. 2000	Apr. 2001	9 Months	Feb. 2001	2 Months Later
Aug. 2006	Jan. 2008	17 Months	Jun. 2007	7 Months Later
May. 2019	Mar. 2020	10 Months	Oct. 2019	5 Months Later
	Average	**11.4 Months**		**3.4 Months Later**

Source: Brandywine Global, 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

7 Russell 1000 Index Returns

%, 1962 – 2022, As of 9/30/2023



Source: Brandywine Global, FactSet, FTSE Russell

[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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