

Declining mean reversion and a focus on sustainable growth



From the Field
Q3 2024

Key Insights

- The digital age has changed competitive dynamics.
- Companies are gaining larger and more sustainable competitive advantages, leading to a lack of mean reversion in fundamentals.
- Traditional quantitative factors relying on mean reversion should be complemented with a measure of sustainable growth potential.



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Major global stock market indices rose in the third quarter of 2024. Key drivers included easing inflation in the U.S., which led to the Federal Reserve cutting the fed funds target rate by 50 basis points on September 18, along with China announcing an unexpectedly aggressive stimulus plan on September 24. We highlight three insights from quarterly factor returns:

- **Broadening of the global equity market:** For the past few years, the Russell 1000 Growth Index has outperformed major U.S. and global equity indices. This quarter witnessed a broadening of market performance, with the Russell 1000 Growth Index trailing all other indices shown in Figure 1. Notably, within the U.S., large-cap value outperformed large-cap growth, and small- to mid-caps outperformed large-caps.

Quarterly factor returns

(Fig. 1) July 1, 2024–September 30, 2024

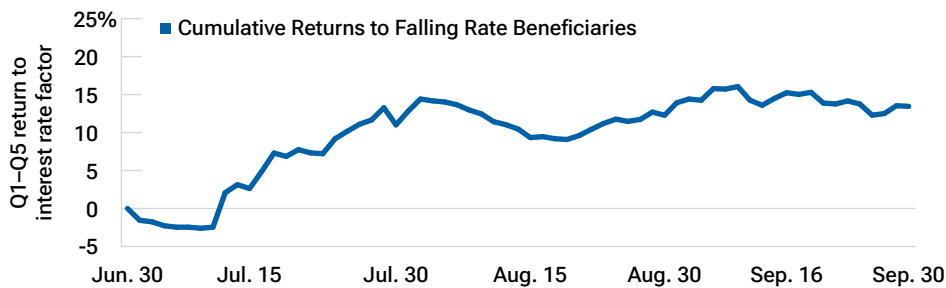
Index	Total Return	Valuation	Growth	Momentum	Quality	Profitability	Risk	Size
MSCI Pacific ex-Japan	14.31%	-2.98%	3.68%	-7.74%	-0.13%	-2.85%	9.76%	4.07%
Russell 1000 Value	9.43	-4.25	-0.67	-0.61	0.45	-0.49	-4.18	-0.98
MSCI Emerging Markets	8.88	-0.39	-1.13	-13.70	0.07	-4.58	0.94	-3.08
Russell 2500	8.75	-1.47	-0.75	7.13	-0.23	0.68	-1.35	2.32
MSCI Europe	6.63	-2.79	1.14	-3.14	-2.38	-6.67	-4.23	-8.12
Russell 1000	6.08	0.11	-2.99	-0.94	0.90	-0.84	-3.15	-2.44
MSCI Japan	5.88	-6.77	-0.83	-6.00	9.47	4.99	-11.68	-5.51
Russell 1000 Growth	3.19	1.83	-2.63	1.43	-0.54	-0.75	0.68	-1.73

Past performance is not a reliable indicator of future results.

Sources: Refinitiv/IDC data, Compustat, Worldscope, Russell, and MSCI. Analysis by T. Rowe Price. See Additional Disclosures. Total return data are in U.S. dollars. Factor returns are calculated as equal-weighted quintile spreads. Please see Appendix for more details on the factors.

Cumulative returns to falling rate beneficiaries

(Fig. 2) June 30, 2024–September 30, 2024



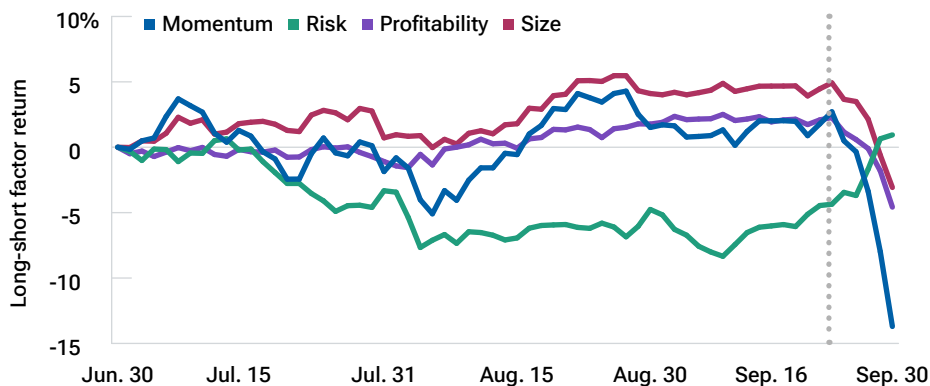
Past performance is not a reliable indicator of future results.

Sources: FactSet, Refinitiv, and Russell. The universe is the Russell 1000 Index. Interest rate exposure is calculated using a regression of daily Russell 1000 stock returns on the ICE BofA U.S. Treasury 20+ Year Bond Index. FactSet sources the benchmark returns directly from ICE. Stocks are then sorted into quintiles based on interest rate exposure. The chart is based on factor values as of 6/30/24 with no rebalancing. Return is calculated as a long-short spread of stocks that benefited from falling rates (first quintile) minus stocks that benefited from rising rates (fifth quintile). We performed a six-month regression on June 30, 2024, for the first half of 2024; we held the basket static in the third quarter and analyzed the betas from July 1 through September 30, 2024.

- Interest rate exposure was a prominent factor this quarter:** In our second-quarter 2024 newsletter, we detailed the construction of a proprietary factor that estimated every stock's sensitivity to interest rates. Interest rates turned out to be a prominent factor this quarter, as investors correctly anticipated that the Fed would cut the fed funds rate in September (Figure 2). Interestingly, for most of the quarter, beneficiaries of falling rates outperformed beneficiaries of rising rates. However, in early August, the factor reversed as investors became concerned about a weakening U.S. labor market outlook, recession fears, and the unwind of the Japanese yen carry trade. We find this important because we wrote last quarter about how stocks' response to falling rates would depend on why rates are falling, and that played out clearly in Figure 2.
- Chinese stimulus drove a low-quality, negative momentum rally:** In late September, China unveiled an unexpectedly large stimulus package that significantly impacted factor performance in emerging markets (Figure 3). Immediately following the stimulus announcement, momentum, profitability, and size factors (proxies for quality) underperformed sharply, while riskier stocks rose sharply. We observed spillover of these effects to stocks in other regions that had economic exposure to China. Time will tell whether the stimulus package is successful enough to justify this reversal of leadership in China.

Emerging markets factor performance

(Fig. 3) June 30, 2024–September 30, 2024



Past performance is not a reliable indicator of future results.

Sources: FactSet, Refinitiv, MSCI, and Barra. The universe is the MSCI Emerging Markets Index. Factor returns are calculated as a long-short spread of top quintile minus bottom quintile. Factors are defined as in Figure 1. Please see Appendix for more details on the factors. Please see page 8 for information about this MSCI Barra information.

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Market insight – What we’re monitoring

In this quarter’s newsletter, we take a deeper look at what has fueled the large-cap growth leadership of the last decade. We believe an underappreciated change is that the advantages of scale have led to an unprecedented lack of mean reversion in fundamentals. Our key points are:

- The digital age has changed competitive dynamics.
- Companies are gaining larger and more sustainable competitive advantages, leading to a lack of mean reversion in fundamentals.
- Traditional quantitative factors relying on mean reversion should be complemented with a measure of sustainable growth potential.

We conclude with a discussion of the “durable growth” factor that we developed to navigate this environment and identify potential sustainable growth winners.

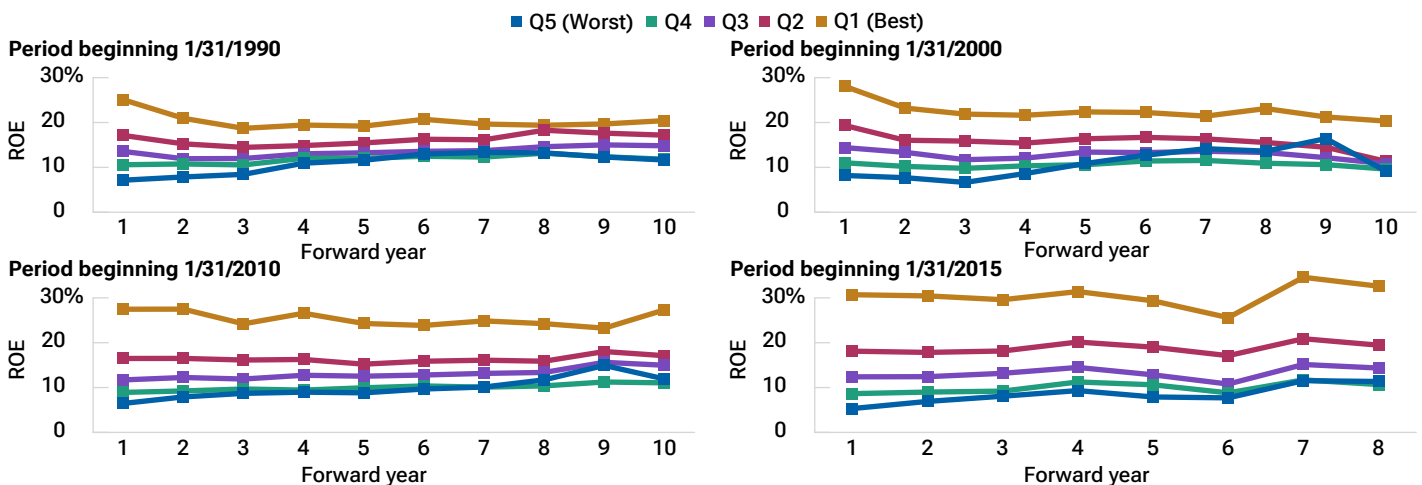
Persistent growth and the lack of mean reversion

Investors have theorized why growth benchmarks and factors have outpaced their respective value factors over the last decade. Most explanations include academic references to the impact of low interest rates on equity duration, or the decline of accounting relevancy coming from the rise of intangibles and asset-light businesses. We agree that those factors account for some of the explanation. However, we believe that the more important driver leading to narrow markets, growth outperformance, and industry concentration is the structural shift ushered in by the digital age. The digital age is all about data, network effects, and scaled digital solutions, which have led to more persistent “abnormal” growth rates, competitive advantages, and barriers to entry—which, in turn, have led to non-mean-reverting fundamentals.

“The digital age is all about data, network effects, and scaled digital solutions, which have led to more persistent ‘abnormal’ growth rates, competitive advantages, and barriers to entry—which, in turn, have led to non-mean-reverting fundamentals.”

Increasing persistence of winners

(Fig. 4) 1990–2023



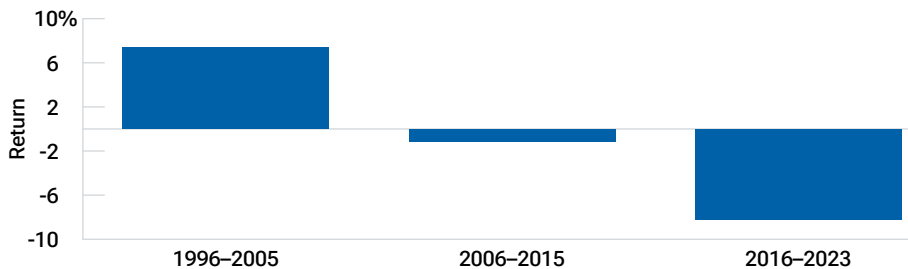
Past performance is not a reliable indicator of future results.

Sources: FactSet, LSEG, IDC data, Compustat, and Russell. Analysis by T. Rowe Price. ROE, which is return on equity, is calculated using trailing 12-month data. The Russell 1000 Index is the universe for the ROE quintiles, with the x-axis representing the forward year values for the respective time period plotted. All charts begin on January 31 of the year listed. The ROE quintiles are constituted as of the start date and are not reconstituted for the forward years.

Value investing is predicated on the assumption that markets overextrapolate current conditions while competition forces a cadence of mean reversion. Economic theory teaches that competition drives abnormal returns toward the cost of capital, and value investors historically have benefited from understanding these “base rates” and not overextrapolating outsized strong or weak performance into the future. While this historically made sense, it turns out that, more recently, extrapolating winners has been the right thing to do. Winners have continued to win, and losers haven’t been able to catch up to their scaled superiors. One can see the more persistent fundamentals in Figure 4, which illustrates the more consistent abnormal returns in recent periods versus historical precedents. This coincides with the degradation in value-signal performance per Figure 5.

Average 12-month forward returns value long-short by decade group

(Fig. 5) Periods from 1996 through 2023



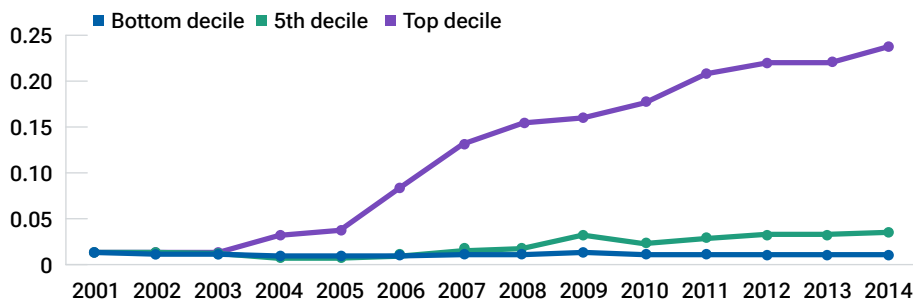
Past performance is not a reliable indicator of future results.

Sources: LSEG, IDC data, Compustat, and Russell. Analysis by T. Rowe Price. The universe is the Russell 1000 Index for value quintiles. Returns are calculated using the cap-weighted 12-month forward (or subsequent) return of the quintile spreads. Quintiles are reconstituted at month end through 9/30/2023 and use return data through 9/30/2024. Please see Appendix for more details on the factors.

This shifting nature of competition was foreshadowed by Erik Brynjolfsson and Andrew McAfee at the MIT Center for Digital Business in their book, *“The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies.”* The Economist newspaper and the Organization for Economic Cooperation and Development (OECD) have since followed with related discussions on the growing concentration in marketplaces and the historic advantages of scale in this winners-take-all economy (*The Economist* March 2016, *Winners Take All*). The OECD’s focus on industry concentration

Log mark-up growth over time in different parts of the distribution

(Fig. 6) 2001-2014



Past performance is not a reliable indicator of future results.

Sources: Mark-ups in the digital era, Calligaris, Criscuolo, and Marcolin. [OECD (2018), Mark-ups in the digital era, https://www.oecd-ilibrary.org/industry-and-services/mark-ups-in-the-digital-era_4efe2d25-en]

This graph from the OECD research on competition shows the significant growth rates of mark-up leaders over time versus the mid- and low-mark-up companies. Mark-ups are a different measure of market power (i.e., changes in mark-up pricing). Mark-ups are measured by unit price divided by marginal cost. The deciles represent the top, median, and bottom decile of mark-ups in the universe. The Y axis shows the log differences from 2001 for each of these deciles, using the Cobb-Douglass production function. The research examines firms across 26 countries. Data points in the graph are approximate.



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and market power has led to a mosaic of metrics all showing a tremendous separation of winners versus losers from digitization's three competitive shifting drivers: "(i) network effects, both direct and indirect, (ii) economies of scope in data collection and analysis, and, thanks to this information, (iii) high and increasing levels of price and product differentiation thanks to the pervasive power of data analytics."¹ Their research illustrates a historical, notable advantage for winning firms, large companies, and large countries relative to their smaller, less successful peers.

To summarize, the digital age confers greater advantages of scale to technology winners due to the benefits of platform economics and the flywheel of more data leading to better algorithms, and vice versa. In addition, these businesses are highly scalable with low marginal cost: While a widget manufacturer needs a new costly plant to increase production, a software provider may be able to add incremental revenue with little additional cost.

Non-technology firms also have significant advantages of scale: Larger firms have more proprietary data and greater resources to invest in technology solutions, which has led to stronger growth and higher profitability—and, hence, more money to reinvest into technology solutions. They also tend to benefit from other drivers of scale, such as increased regulation.

For investors, the implication of the digital era and non-mean-reverting fundamentals is straightforward. Reliance on mean-reverting quantitative value factors alone will not, based on our analysis, garner the same excess returns as has occurred in previous decades. Instead, we believe that identifying and owning the compounding winners will help to deliver excess returns. Recognizing this structural shift, we have researched and created a durable growth factor aimed at delineating winners and losers from within the higher-expectations universe of securities (i.e., the Russell 1000 Index).

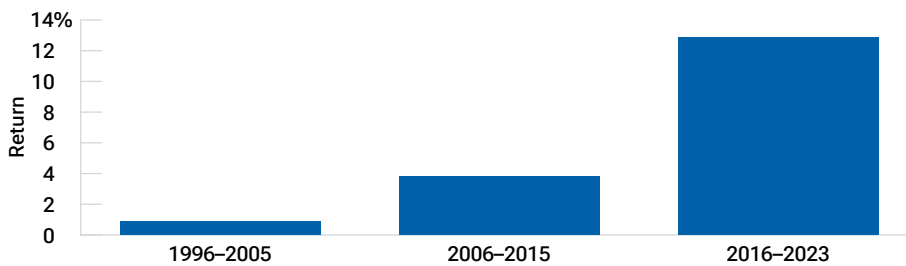
¹ Mark-ups in the digital era, Calligaris, Criscuolo, and Marcolin, pages 5–6.



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Durable growth average 12-month forward returns long-short by decade group

(Fig. 7) Periods from 1996 through 2023



Past performance is not a reliable indicator of future results.

Sources: LSEG, IDC data, Compustat, Russell, and FactSet. Analysis by T. Rowe Price. The universe is the Russell 1000 Index for durable growth scores. Returns shown do not represent performance of an actual investment and the index and durable growth buckets cannot be invested into directly. Returns are calculated using the cap-weighted 12-month forward return of the durable growth spreads. Durable growth scores are reconstituted at month end through 9/30/2023 and use return data through 9/30/2024. Durable growth combines five subfactors (EPS growth, EPS stability, ROE 5-year median, sales-per-share growth, and debt-to-invested capital ex-cash). If the stock's subfactor is above the median of the universe (or below the 66th percentile for debt-to-invested capital) it scores a 1 for that subfactor. If it is below, it gets a 0. The five subfactors' scores are then summed up. If a stock meets the threshold for all five factors, its durable growth score would be 5. If it is below for all of them, its durable growth score is 0. The long-short performance is calculated using durable growth 5 less durable growth 0 performance. The durable growth buckets are reconstituted every month at month end for the entire history shown.

Durable growth

Our durable growth framework is a five-factor framework developed to try to identify companies that have demonstrated superior growth in a sustainable way. Stocks exhibiting recent growth tend to trade at higher multiples, reflecting high expectations. Many fail to live up to their valuation-implied expectations. The durable growth factor we constructed seeks to identify robust growth that has been achieved consistently over time and is thus less likely to disappoint. Specifically, we define durable growth stocks as having favorable topline growth, while not sacrificing bottom-line growth, and doing so consistently over the last five years to avoid confusing cyclical growth with secular growth.

Profitable growth through high returns on equity achieved without leveraging the balance sheet is also required. We feel these attributes, in combination, demonstrate a durability measure indicating high-quality sustainable profitability and growth. As value has struggled, the benefit of durable growth companies has been an effective complement to certain investment strategies. Figure 7 illustrates the performance of the durable growth factor by decade, showing an increasing relevance in the last 10 years as the digital age has proceeded. While traditional growth metrics tended to underperform due to high implied expectations, durable growth stocks have generally met expectations and, therefore, performed well.

Summary and conclusion

Fundamentals have been affected by changing technology and consequent changes in competitive dynamics. Mean reversion has not persisted in the last decade as it has in the past. We believe that investment strategies employing quantitative factors should adapt to navigate the less mean-reverting environment. One effective way to do so is by developing a process for separating sustainable growers from the apparent growers. We have revisited our durable growth research and consider it a critical support tool.

Appendix

Factors are our internally constructed metrics defined as follows:

Valuation: Proprietary composite of valuation metrics based on earnings, sales, book value, and dividends. Specific value factor weighting may vary by region and sector.

Growth: Proprietary composite of growth metrics based on historical and forward-looking earnings and sales growth. Factor selection and weighting vary by region and industry.

Momentum: Proprietary measure of medium-term price momentum.

Quality: Proprietary measure of quality based on fundamental and stock price stability; balance sheet strength; and measures of profitability, capital usage, and earnings quality.

Profitability: Return on equity.

Risk: Proprietary composite capturing stock return stability over multiple time horizons (positive return means risky stocks outperform stable stocks).

Size: Market capitalization (positive return means larger stocks outperform smaller stocks).

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