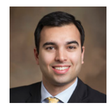
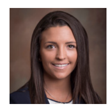
Valuing the Smaller Things

An asset allocation perspective on small- and mid-cap value.

May 2020



Som Priestley, CFA
Multi-Asset Solutions Strategist



Christina Moore, CFA
Multi-Asset Solutions Associate Strategist

KEY INSIGHTS

- While U.S. value and small- and mid-cap stocks have been out of favor recently, we believe exposure to these styles can improve portfolio durability.
- Historically, small- and mid-cap value have played important return-enhancing and risk-reducing portfolio roles, helping to reduce downside market exposure.
- History also suggests that investors who miss the initial months of a small-cap value outperformance cycle may sacrifice a large share of that outperformance.

The dynamic nature of capital markets means that generating durable investment results requires thoughtful portfolio design and ongoing revalidation of allocations through time. One key challenge is that markets evolve, and as a result, investment style leadership (such as the equity value style versus the growth style) tends to rotate over time. Historically, these cycles have lasted several years and have often prompted investors to question if an out-of-favor style will ever work again.

For most of the past decade, two equity styles—U.S. value and smaller capitalization (including both small- and mid-cap stocks)—have been out of favor. However, while the shorter-term performance of these styles has been challenged, longer-term data (Figure 1) show that both approaches historically have been strong drivers of positive returns and have accounted for a meaningful portion of the broad U.S. equity market, equaling approximately 15% of the Russell 3000 Index as of March 31, 2020.[1]

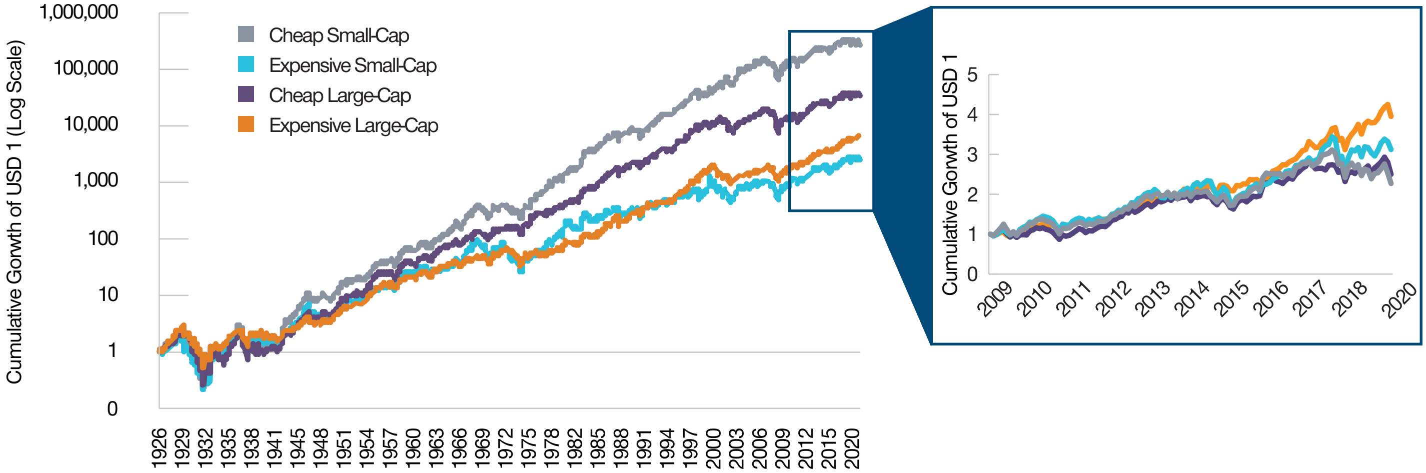
The goal of this paper is not to validate the continued existence of any specific return premia for small- and mid-cap value stocks. Rather, we focus here on the risk-based case, hopefully demonstrating to investors the benefits of ensuring that their portfolio positioning is properly diversified through a thoughtful reexamination of their U.S. equity style and size exposures.

To help illustrate possible negative consequences of under-diversification, we begin our analysis by reexamining

[1] The historical equity performance results and the size and style categories shown in Figures 1, 6, and 7 in this paper are based on long-term return series constructed by Dr. Kenneth French, a professor of finance at Dartmouth University, using data from the Center for Research in Security Prices. They are reproduced here by permission. Additional information on Dr. French's return and factor methodologies can be found at his research site, on the Web at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/index.html.

Long-Term Small- and Mid-Cap Value Performance Tells One Story, More Recent Performance Another

(Fig. 1) Historical performance of equity style factors



Past performance is not a reliable indicator of future performance.

July 31, 1926, through February 29, 2020 (subset December 31, 2009, through February 29, 2020).

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> "Our process seeks to avoid undesired structural bias caused by elevated (or reduced) exposure to particular investment styles...

the strategic allocation case for small- and mid-cap value stocks, then take a closer look at some of the key attributes of these investment styles.

Our Portfolio Construction Principles

We believe that strategic asset allocation is the most important driver of outcomes over time for many multi-asset portfolios and that equity allocations should be broadly diversified across regions, sectors, capitalizations, and styles in an effort to distribute and mitigate overall portfolio risk.[2] Unless we have a particular investment objective, we tend to design strategic asset allocations that are style- and size-neutral relative to broad market benchmarks like the Russell 3000 Index. There are two key reasons for this practice:

- **Size:** Market capitalization weights essentially represent investors' consensus view of company valuations, and thus, in our view, are reasonable starting points in the absence of any particular view or objective.
- **Style:** Our process seeks to avoid undesired structural bias caused by elevated (or reduced) exposure to particular investment styles relative to the most commonly used core benchmarks.

We examined the potential risk of maintaining incomplete market exposure in a portfolio—specifically, strategic allocations that do not incorporate small- and mid-cap value stocks. We looked at conditional value at risk (CVaR), a measure of downside risk, for four hypothetical portfolios that tracked different benchmarks or benchmark blends: the Russell Top 200 Growth Index (reflecting both a size and a style bias), the Russell Top 200 Index (a size bias), a blend of the Russell Top 200 and small- and mid-cap growth indexes (both size and style biases) and the Russell 3000 Index (a balanced exposure).

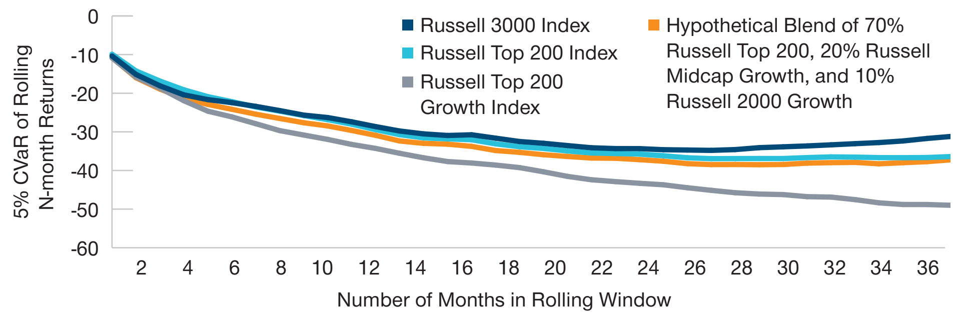
Figure 2 shows the historical CVaR of each index over expanding rolling

[2] Strategic allocation establishes the targeted mix of long-term asset class exposures.

> We believe that size and style diversification can improve portfolio durability across market cycles...

A Size- and Style-Diversified Portfolio Historically Has Been More Defensive Over the Long Term

(Fig. 2) CVaR for rolling n-month total returns



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January 31, 1986, through March 31, 2020.
Source: Russell (see Additional Disclosures). All data analysis by T. Rowe Price. The hypothetical index blend assumes monthly rebalancing and is not representative of an actual portfolio or investment.

windows covering a period that began January 31, 1986, and ended March 31, 2020. Our analysis found that we could not have achieved the lowest historical downside exposure profile unless small- and mid-cap value stocks were added to achieve a fully balanced portfolio (i.e., the Russell 3000 Index).

The risk-reduction potential of small- and mid-cap value stocks may appear somewhat surprising given their cyclicality. However, as shown in Figure 3, investment substyles historically have diversified each other well during annual periods in which one of them has underperformed the Russell 3000 Index. To give just one example, Figure 3 shows that historically, when the Russell Top 200 Growth Index underperformed the Russell 3000 Index on an annual basis, the underperformance equaled about 6.4 percentage points, on

Conditional Performance of Russell Style Indexes

(Fig. 3) Average 12-month excess returns relative to the Russell 3000 Index

	Average Excess Returns in Periods When Index Shown Below Has Underperformed the Russell 3000 Index (Percentage Points)					
Relative Performance Versus the Russell 3000 Index for:	**Russell Top 200 Growth Index**	**Russell Top 200 Value Index**	**Russell Midcap Growth Index**	**Russell Midcap Value Index**	**Russell 2000 Growth Index**	**Russell 2000 Value Index**
Russell Top 200 Growth	-6.4	3.2	0.3	5.6	1.1	5.2
Russell Top 200 Value	1.7	-4.1	2.0	-2.0	1.4	-1.8
Russell Midcap Growth	0.9	5.4	-4.5	1.8	-2.7	2.1
Russell Midcap Value	9.4	-1.5	2.2	-5.7	0.9	-4.8
Russell 2000 Growth	0.9	2.5	-7.6	-3.6	-8.2	-4.3
Russell 2000 Value	10.5	-3.0	1.2	-8.3	-2.1	-9.0

Most negative **Most positive**

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January 31, 1986, through March 31, 2020.
Source: Russell (see Additional Disclosures). All data analysis by T. Rowe Price.

> ...there is a risk that many investors may have drifted to underweight positions relative to their strategic small- and mid-cap value exposure targets.

average. By contrast, during those same periods, the Russell 2000 Value Index outperformed the Russell 3000 Index by 10.5 percentage points, on average.

We believe that size and style diversification can improve portfolio durability across market cycles, as a properly specified portfolio should be less dependent on a single environment to succeed. In our view, a strategic allocation to small- and mid-cap value equities can play an important role in achieving that durability.

Quantifying the Risk of a Structural Underweight

Given the length and degree of large-cap growth outperformance in recent years, there is a risk that many investors may have drifted to underweight positions relative to their strategic small- and mid-cap value exposure targets.[3] To quantify this risk, we examined a hypothetical portfolio that allocated to U.S. large-, mid- and small-cap growth and value equities.

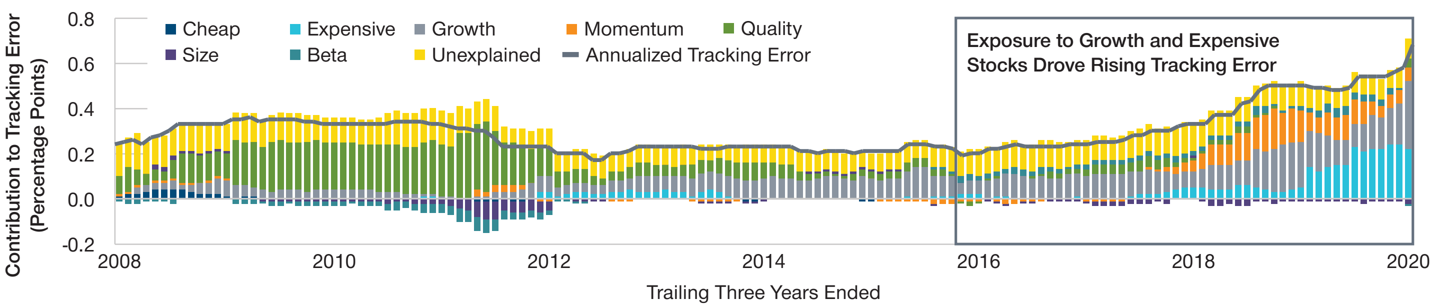
In our scenario, hypothetical portfolio exposures were weighted to be style neutral and in line with Russell 3000 Index market capitalization at the beginning of the period (March 31, 2005). The hypothetical portfolio was then allowed to drift over a 15-year period—an admittedly extreme scenario intended to highlight the potential long-term effects of portfolio drift. By the end of that period, the hypothetical portfolio was significantly overweight large-cap growth stocks and significantly underweight small- and mid-cap value stocks.

Figure 4 shows the factor decomposition of the drifting hypothetical portfolio's tracking error versus the Russell 3000 Index. There are two key observations to make:

- Over time, the hypothetical portfolio's tracking error would have increased.

Tracking Error Increasingly Was Driven by High-Growth, Expensive Stocks

(Fig. 4) Hypothetical drifted portfolio versus Russell 3000 Index, factor decomposition of rolling 36-month tracking error



Benchmark Weights in Hypothetical Portfolio

	Russell Top 200 Growth Index	Russell Top 200 Value Index	Russell Midcap Growth Index	Russell Midcap Value Index	Russell 2000 Growth Index	Russell 2000 Value Index
Beginning of Period	35.0%	35.0%	10.0%	10.0%	5.0%	5.0%
End of Period	48.4	24.7	11.4	7.9	4.6	3.0

The information contains hypothetical analysis which is shown for Illustrative purposes only and is not indicative of realized past or future performance. See the end of the paper for important information.

March 31, 2005, through March 31, 2020.

Sources: Russell, Worldscope, ICE BofAML, I/B/E/S, S&P Global Market Intelligence, Compustat (see Additional Disclosures). All data analysis by T. Rowe Price.

[3] The Russell 1000 Growth Index outperformed the Russell 1000 Value Index by 5.3% annualized over the trailing 10 years ended March 31, 2020.

[4] Please see the appendix for the style factor definitions and methodology used in this analysis.

Potential Performance Impact on a Hypothetical Drifted Portfolio vs. the Russell 3000 Index[1]

(Fig. 5) Potential impact of relative return scenarios on hypothetical portfolio performance

Scenario	Drifted Portfolio Return	Russell 3000 Index Return	Drifted Portfolio Underperformance (Percentage Points)
Russell 3000 Value Index Outperforms Russell 3000 Growth Index by 10%	8.61%	9.46%	**-0.85**
Russell 2500 Value Index Outperforms Russell 2500 Growth Index by 10%	6.74	7.46	**-0.72**
Russell 2500 Index Outperforms Russell 1000 Index by 10%	5.34	5.71	**-0.37**

The information contains hypothetical analysis which is shown for Illustrative purposes only and is not indicative of realized past or future performance. See the end of the paper for important information.
As of March 31, 2020.
Sources: Russell, MSCI (see Additional Disclosures). All data analysis by T. Rowe Price. **Actual results may differ significantly.**

[1] Ex-ante performance results were based on hypothetical portfolio and index constituents holdings as of March 31, 2020. Relative performance was determined by an ex-ante covariance matrix and a hypothetical shock scenario consisting of 10% outperformance by the Russell 3000 Value Index vs. the Russell 3000 Growth Index. Russell 3000 Value Index return was assumed to be +15% and the Russell 3000 Growth Index return was assumed to be +5%. An ex-ante covariance matrix was computed using the MSCI Barra Global Equity Long-Term Risk Model. Additional information about this model can be found on the web at https://www.msci.com/documents/10199/242721/Barra_Global_Equity_Model_GEM3.pdf

- An increasing share of the tracking error would have been driven by heightened exposure to both high-growth stocks and expensive stocks.[4]

These results highlight a potentially undesirable dynamic. Not only would active risk in the hypothetical portfolio have increased, it would have increased because of heightened exposure to a progressively narrower set of drivers. Specifically, as time went on, the hypothetical portfolio would have become increasingly reliant on large-cap growth equity to outperform its benchmark.

Figure 5 attempts to quantify that risk by shocking the hypothetical portfolio at the end of the 15-year study period. We see that the hypothetical drifted portfolio would have been susceptible to a change in equity style regime and could have underperformed the Russell 3000 Index by 0.85 percentage points if value stocks had outperformed growth stocks by 10%, and by 0.72 percentage points if small- and mid-cap value stocks (represented by the Russell 2500 Value Index) had outperformed their growth counterparts by 10%.

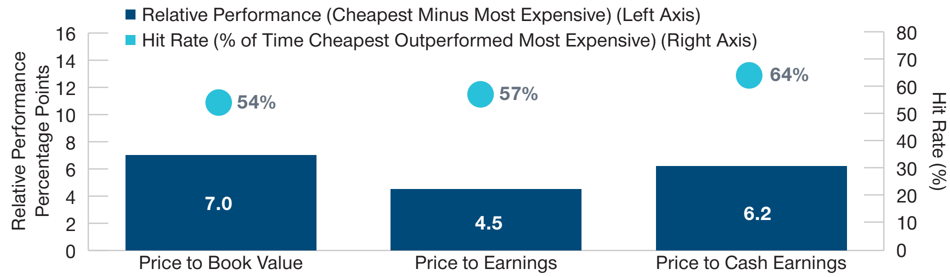
These findings illustrate the potential benefits of holding a diversified U.S. equity portfolio and not allowing strategic style and size exposures to drift beyond allowable ranges.

Specific Dynamics of Small- and Mid-Cap Value

We have covered the broad case for setting and maintaining a diversified equity allocation that includes dedicated exposures to small- and mid-cap value stocks. Next, we will consider three dynamics specific to small- and mid-cap value equities.

Small-Cap Value Stocks Typically Outperformed During the 12 Months From When the Market Declined 20% or More

(Fig. 6) 12-month forward returns and hit rates by various measures



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July 31, 1951, through March 31, 2020.
Source: Kenneth R. French (©2020). Used by permission. All data analysis by T. Rowe Price. Relative performance was measured starting in the month of the market trough in a downturn of 20% or more, inclusive of that month. The performance results and the size and style categories shown here are based on long-term return series constructed by Dr. French using data from the Center for Research in Security Prices. Additional information on Dr. French's return and factor methodologies can be found at his research site, on the Web at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/index.html.

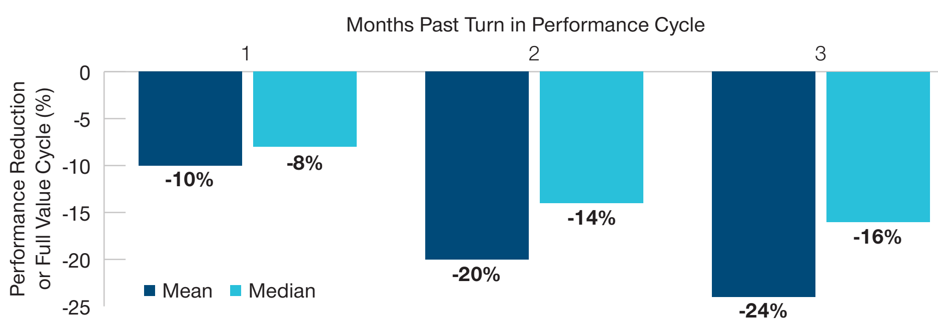
Small- and Mid-Cap Value Performance Following Market Drawdowns

As we have stated, equity investment styles historically have cycled through leadership positions over time. A natural follow-on question is: What periods have been particularly conducive to small- and mid-cap value performance?

One scenario that stands out across a long-term performance history are the excess returns on inexpensively priced small- and mid-cap stocks versus relatively expensive stocks following periods of broad market decline.

Missing the Initial Months in a Value Cycle Significantly Reduced Outperformance

(Fig. 7) Reduction in total outperformance for U.S. small- and mid-cap value versus U.S. small- and mid-cap growth[1]



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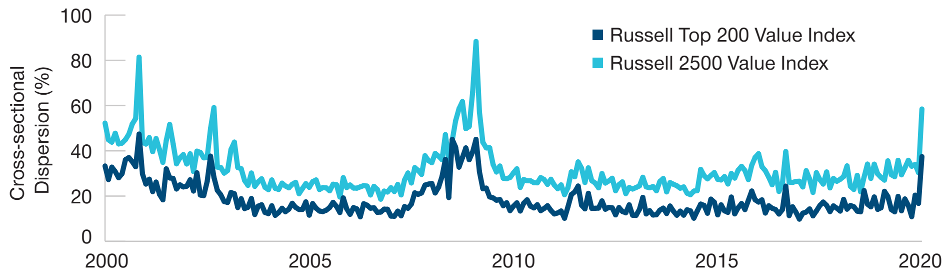
[1] Late entry was measured relative to an assumed cyclical turn indicated by a reversal in relative value/growth performance of more than 20% that lasted at least 3 months.

Dispersion of Monthly Returns Has Been Higher in the Small- and Mid-Cap Value Universe

(Fig. 8) Cross-sectional dispersion within the Russell 2500 Value Index and the Russell Top 200 Value Index



March 31, 2000, through March 31, 2020.

To illustrate this point, Figure 6 shows forward 12-month returns for the most inexpensive small- and mid-cap stocks minus the most expensive stocks (i.e., a long/short position) measured from at least a 20% drawdown in the broad equity market. Over a period running from July 31, 1951, through March 31, 2020, cheaper stocks experienced significant relative outperformance in such environments across the three valuation measures used in Figure 6.

Small- and Mid-Cap Value Outperformance May Occur Rapidly

Another interesting dynamic we observed in our analysis was that shifts in relative outperformance potentially can occur very rapidly. Figure 7 shows the share of small- and mid-cap value relative outperformance that could have been sacrificed if an investor had been one, two, or three months late investing in such stocks at the beginning of a cycle. Over a period running from July 31, 1926, through March 31, 2020, an investor who mistimed the beginning of an outperformance cycle in small- and mid-cap value stocks by just three months could have missed up to 24% of small value's outperformance versus small growth over the subsequent full cycle, on average.

Our finding that small- and mid-cap value stocks historically have tended to outperform their more expensive peers following broad market declines, combined with the fact that this relative performance shift potentially can occur very abruptly, reinforces the importance of maintaining value exposure through all investment cycles, in our view.

Inefficiency Could Create Opportunities for Active Return

The inclusion of small- and mid-cap value equities in a strategic asset allocation provides exposure to potentially less efficient markets, which may create opportunities to enhance returns via active management. One measure of a market's inefficiency is cross-sectional security dispersion. Figure 8 shows that over a 20-year period ended March 31, 2020, security dispersion within the Russell 2500 Value Index was consistently higher than within the Russell Top 200 Value Index.

The potentially higher level of security dispersion among small-cap stocks, coupled with other factors (for example, lighter industry analyst coverage of the small-cap universe) makes the small- and mid-cap value space particularly attractive for active managers, in our view. In a world that may be return-constrained across levels of equity beta going forward, we believe active returns increasingly could be needed to meet investment objectives.

Conclusions

In our view, small- and mid-cap value stocks have an important role to play in most equity portfolios. While much has been written about the potential for small-cap value stocks to generate returns in excess of the broad equity market, less has been said about their potential risk-related benefits. As we have shown here, the addition of small- and mid-cap value stocks provides investors with more diversified U.S. equity market coverage and, over longer-term historical periods, has often led to more durable returns over time.

In summary, we believe the key takeaways from our analysis for investors are:

- While nobody knows what future market leadership will look like, maintaining a balanced and disciplined approach to equity allocation can provide a more all-weather approach by making portfolios less reliant on a single factor to drive returns.
- Historically, when market leadership has changed, it typically has changed quickly and by large margins. By the time the trend was recognized, much of the opportunity to benefit from it could have been lost.
- Less efficient market segments and a wider opportunity set in small- and mid-cap equities create potential opportunities to enhance returns through active management.

Managing equity allocations over time is a challenging task. In our view, the best course for most investors is to focus on their long-term objectives, understand the potential paths to those objectives, and avoid the distractions of shorter-term market cycles. In that sense, we believe small- and mid-cap value stocks offer attractive opportunities that should not overlooked.

Appendix: T. Rowe Price's Style Factor Definitions

Factor	Metric Methodology
Value	**Fundamental factor based on value-related balance sheet and income statement items:** Enterprise value (EV)/earnings before interest, taxes, depreciation, and amortization (EBITDA); EV/sales; free cash flow yield; price/book; forward 12-month earnings per share (EPS). Cheap is defined as relatively lower valuation metrics; positive exposure to the value factor. Expensive is defined as relatively higher valuation metrics; negative exposure to the value factor.
Growth	**Fundamental factor based on growth-related balance sheet and income statement items:** Forward two-year EPS growth; forward two-year sales growth; trailing 12-month EPS growth; trailing 12-month sales growth. High growth is defined as relatively higher growth metrics; positive exposure to the growth factor. Low growth is defined as relatively lower growth metrics; negative exposure to the growth factor.
Size	**Small minus large:** Market capitalization.
Momentum	**High minus low:** Trailing nine-month stock price momentum.
Beta	U.S. equity market factor using Russell 3000 Index excess return over cash.
Quality	**High minus low:** Composite average of market cap-weighted factors including return stability, return on equity, earnings quality, payout policy.

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