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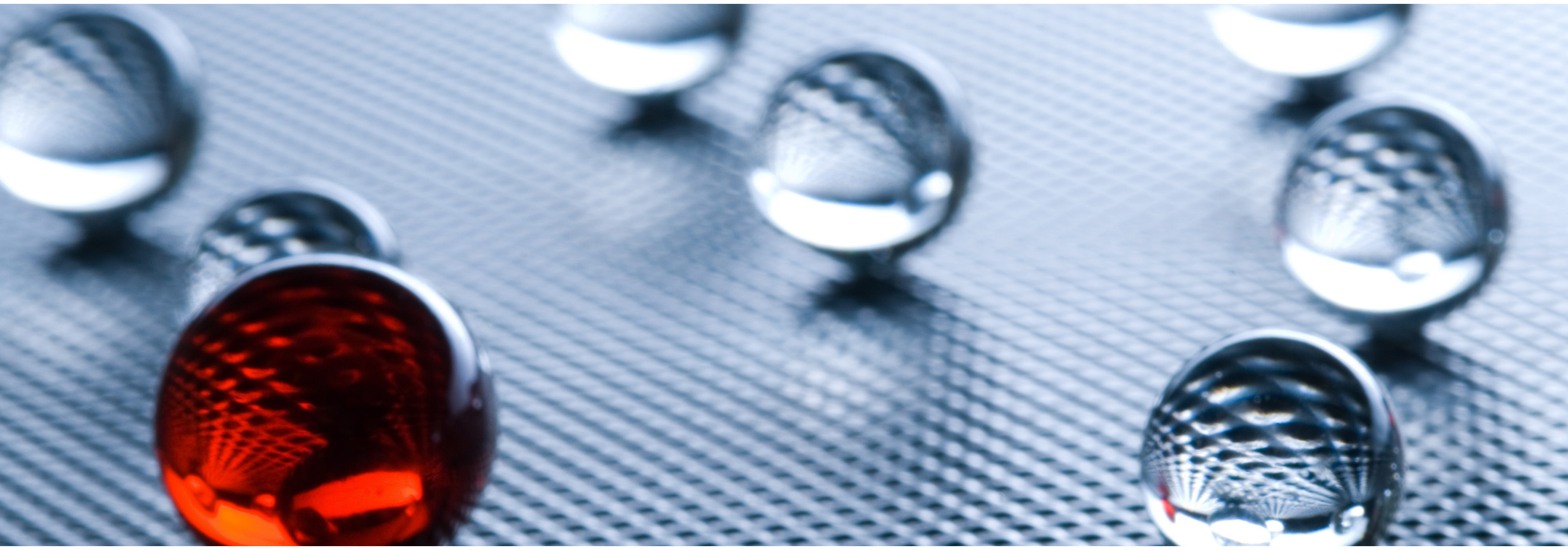

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Small Caps: To Index or Not To Index

More investors are taking a passive approach to small caps. Should they? We believe small caps span a wide range of characteristics and performance drivers that index funds merely average away, but that experienced managers have the potential to exploit. In this report—the fifth installment in our series on the potential limitations and hidden costs of equity indexation—we explore what we believe are common yet ultimately misguided assumptions about small caps, as well as their potential consequences for small-cap quality, growth and value investors seeking to generate attractive risk-adjusted returns.

Alpha-land: The Diverse Small-Cap Landscape

Small caps are now more passively managed than their mid-cap and large-cap peers: Small-cap index funds account for 61% of small-caps assets under management versus 56% for large caps and 45% for mid caps.[1]

Yet for all their popularity, index funds are not designed to capitalize on the extraordinary variations across performance drivers within the small-caps universe. Experienced small-cap managers, by contrast, can target significant disparities in quality, growth, value and risk characteristics when seeking better risk-adjusted returns than the index.

Over the last three decades, small-cap portfolio managers as a whole have delivered cumulative median alpha of 56 percentage points and have outpaced their large-cap and mid-cap counterparts (see figure 1).

FIGURE 1: ACTIVE SMALL-CAP MANAGERS HAVE DELIVERED SIGNIFICANT ALPHA IN RECENT DECADES

Source: Morningstar, Morgan Stanley Wealth Management Global Investment Office, data as of August 31, 2024. For illustrative purposes only. **Past performance is not indicative of future results.**

Passive investors *must accept* the averaging of significant disparities across the small-cap landscape, whereas experienced active managers, in our view, have the potential to *exploit* them. For the remainder of this report, we will explore key disparities in quality, growth and value characteristics of small caps that we believe can invite some of the most attractive investment opportunities.

Disparities in Quality

The Great Divide: Profitable vs. Unprofitable Small Caps

If you split the small-cap universe into profitable and unprofitable companies, two extremely different worlds emerge: This partition, in our view, deserves the highest investor consideration.

Wall Street analysts expect about 28% of the names in the Russell 2000 Index[2] to report negative earnings over the following 12 months versus just 3% of companies in the Russell 1000 Index[3] (see the left side of figure 2). As a group, profitable small caps have steadily beaten loss-making index members by a significant 6.5% per year since 2004. As shown on the right side of figure 2, profitable small caps have bested the Russell 2000 Index by 2.0% per year, while unprofitable names have *trailed* the index by 4.4%.[4] In our view, passive funds tracking small-cap indices lack the flexibility to exploit this crucial divide.

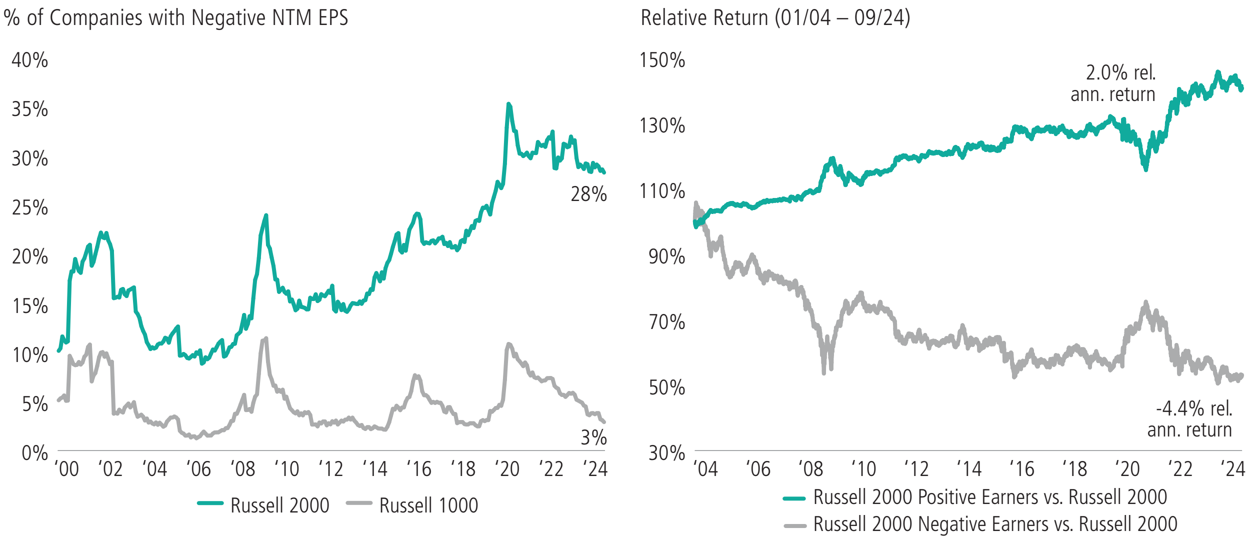
[1] Source: BofA, data as of September 30, 2024.

[2] Source: Neuberger Berman Research. The Russell 2000 Index includes the smallest 2000 U.S. companies in the Russell 3000 Index, measured by market cap. The Russell 3000 Index is a broad equity index representing roughly 96% of the investible U.S. stock market.

[3] Source: Neuberger Berman Research and FactSet. Data as of September 30, 2024. The Russell 1000 Index includes the top 1000 U.S. companies measured by market cap.

[4] Ibid.

FIGURE 2: MANY SMALL CAPS DO NOT EARN A PROFIT; THOSE THAT DO TEND TO OUTPERFORM THE REST



Source: Neuberger Berman Research and FactSet. Data as of September 30, 2024. For illustrative purposes only. Indexes are unmanaged and are not available for direct investment. **Past performance is into indicative of future results.**

How about risk? Profitable small caps, we find, are *not* as susceptible to market gyrations as investors might think.

Profitable members of the Russell 2000 tend to offer more attractive returns than the overall index while exhibiting lower beta to the economy and to the index. This combination makes profitable small caps a more attractive investment than an index fund, in our view.

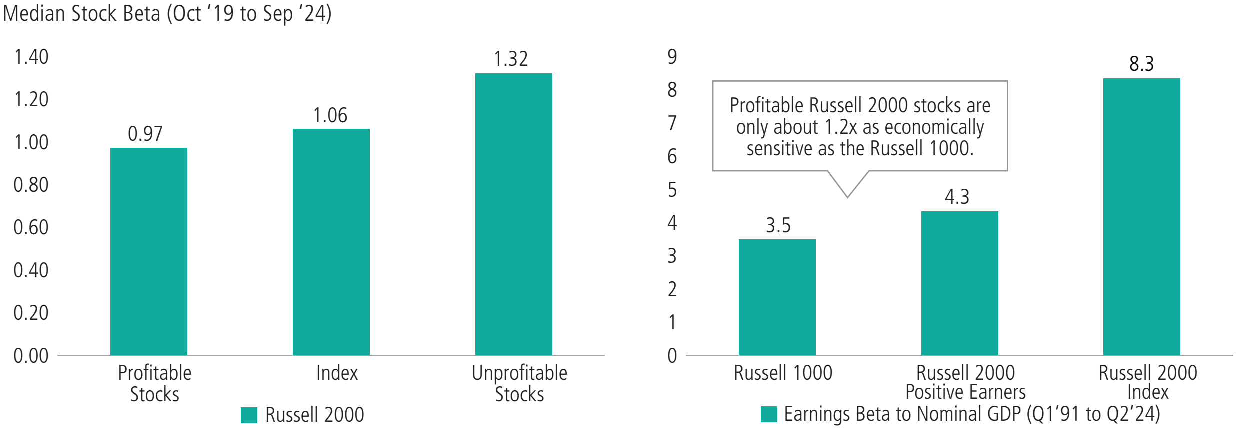
As shown on the left side of figure 3, the median 5-year market beta of profitable stocks in the Russell 2000 Index is only 0.97, while the median beta of unprofitable stocks is much higher, at 1.32.[5] Why are small caps perceived as a particularly risky asset class? The unprofitable bunch are the tail that wags the dog.

There is a fundamental reason for this disconnect, in our view: The earnings of profitable small caps historically are only about *half* as sensitive to swings in the overall economy (measured by changes in nominal GDP) as the earnings of the broader Russell 2000 Index, but the earnings of the unprofitable ones are about *three times as geared* to the economy as that of the index.[6]

As shown on the right side of figure 3, when nominal GDP increases by 1%, profitable small caps tend to see a 4.3% increase in earnings versus an 8.3% jump for the Russell 2000 Index as a whole; on the flip side, when GDP growth decelerates, earnings for the broader index tend to slow nearly twice as fast as earnings for the subset of profitable small caps.[7]

[5] Source: Neuberger Berman Research and FactSet. Data as of October 15, 2024.
[6] Source: Neuberger Berman Research and FactSet. Data as of June 30, 2024.
[7] Source: Neuberger Berman Research and FactSet. Data as of June 30, 2024.

FIGURE 3: PROFITABLE SMALL CAPS TEND TO BE LESS RISKY THAN UNPROFITABLE ONES



Source: Neuberger Berman Research and FactSet. Data as of September 30, 2024. For illustrative purposes only. Indexes are unmanaged and are not available for direct investment. **Past performance is not indicative of future results.**

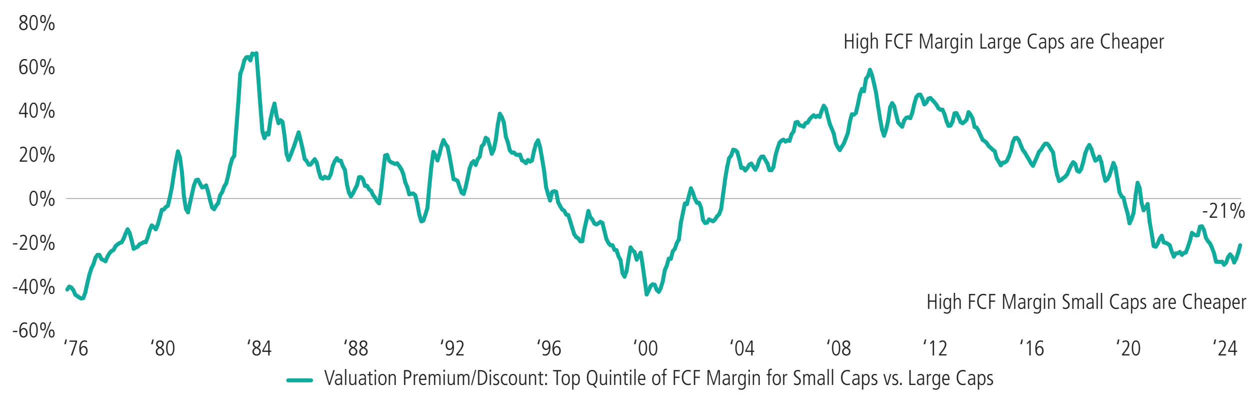
While by no means immune to economic gyrations, profitable small caps tend to lean more on company- and industry-specific growth drivers to deliver earnings—we believe this makes them less susceptible to broader economic fluctuations than their unprofitable peers. (For a closer look at how a variety of significant macroeconomic indicators can influence the performance of small caps versus large caps, see table 1 in the Appendix.)

Free Cash Flow Margins on Sale

Higher-quality small caps tend to have meaningfully larger free cash flow (FCF) margins than small caps as a whole.

Furthermore, FCF margins within the top small-cap quintile tend to be comparable to those in the top large-cap quintile.[8] *And yet, the top small-cap quintile is priced 21% cheaper than the top large-cap quintile, as of September 30 (see figure 4).*[9] We believe this exploitable anomaly exists because, as Michael Goldstein of Empirical Research Partners has noted on occasion: "Investors habitually underestimate the persistence of FCF margins and overestimate the persistence of top-line growth rates."

FIGURE 4: SMALL CAPS WITH FREE CASH FLOW MARGINS IN THE TOP QUINTILE ARE TRADING AT DEEP DISCOUNTS TO THEIR LARGE-CAP PEERS



Source: Empirical Research Partners. Data as of September 30, 2024. For illustrative purposes only. **Past performance is not indicative of future results.**

[8] Source: Empirical Research Partners. Data as of June 30, 2024.
[9] Source: Empirical Research Partners. Data as of September 30, 2024.

A Look Beneath the Hood: Small-Cap Balance Sheets

We find that companies with sturdier balance sheets tend to be less vulnerable to economic downturns and possess greater financial flexibility to weather unexpected business and economic surprises. Balance sheet strength should, therefore, be an important investment consideration for long-term investors.

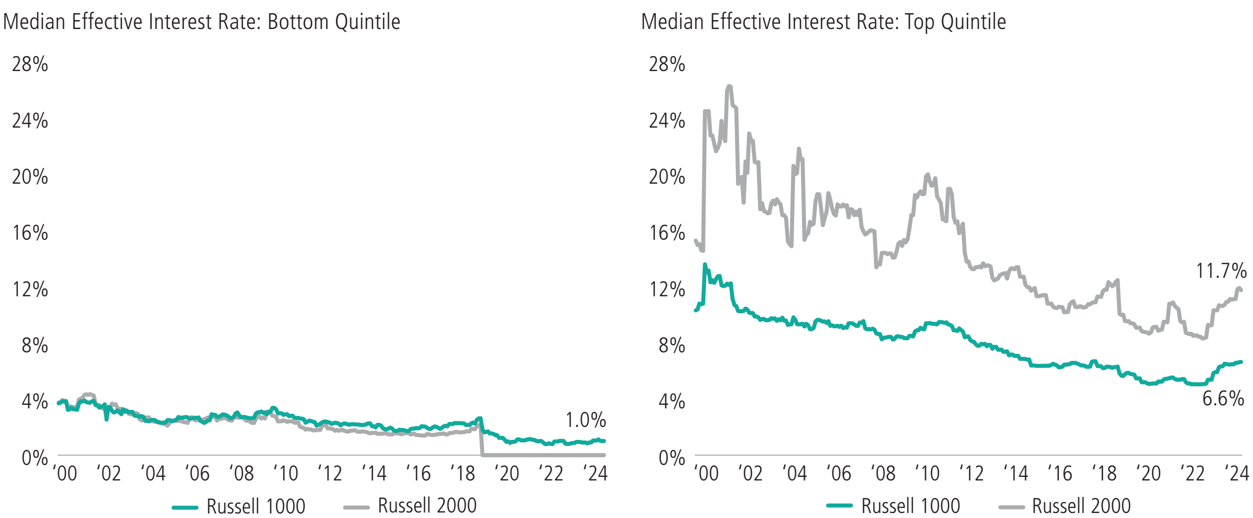
The aggregate balance sheet of the Russell 2000 Index is much weaker than that of the Russell 1000 Index. The average interest coverage ratio (as measured by the ratio of LTM EBITDA to interest expense) for the Russell 2000 is less than one-third of the Russell 1000;[10] furthermore, 87% of the debt outstanding among the Russell 2000 is rated as high-yield compared to just 9% for the Russell 1000.[11] No wonder small caps often get painted with a high-risk brush.

A look beneath the hood, though, reveals a wide range of small-cap balance sheet strength. We find that the median effective interest rate (MEIR)—measured as a company's total interest paid over the last 12 months divided by the total debt on its balance sheet—can be a useful gauge. All else equal, the lower the MEIR, the stronger a company's balance sheet.

As shown on the left side of figure 5, median MEIRs of small-cap stocks in the bottom quintile of the Russell 2000—those with the lowest interest rate burden on their debt—are very similar to their large-cap counterparts in the Russell 1000. By contrast, small caps with interest rates in the top quintile have much higher median MEIRs compared to their Russell 1000 counterparts, as shown on the right.

In other words, the 400 most conservative balance sheets among the Russell 2000 are very similar to the 200 most conservative balance sheets among the Russell 1000. However, the effective interest rate gap between the best of the two indices and the worst of the two indices widens *substantially*—from 1% to 5%—when we compare small and large companies that have the most aggressive balance sheets.

FIGURE 5: BALANCE SHEET STRENGTH CAN VARY GREATLY AMONG SMALL CAPS



Source: Neuberger Berman Research and FactSet, data as of September 30, 2024. For illustrative purposes only. Indexes are unmanaged and are not available for direct investment. **Past performance is not indicative of future results.**

We believe small-cap investors need not bear a broader index's balance sheet risks, especially when there are plenty of sturdier companies to choose from.

[10] Source: Neuberger Berman Research and FactSet. Data as of September 30, 2024.
[11] Source: BofA. Data as of September 30, 2024.

Disparities in Growth

Over the past 40 years, the Russell 2000 has delivered average earnings growth of 10% per year. However, we find that the earnings growth of profitable Russell 2000 companies averaged 54% per year versus 3% for the median company in the index.[12] Such a wide range of growth trajectories provides yet another under-exploited opportunity for thoughtful small-cap selection, in our view.

Of course, that *average* growth figure is not representative of the growth profile of a typical small-cap company. Rather, it highlights an extreme *skew* in the growth profiles of small caps, with some upstarts compounding at very high rates on their way to becoming marquee businesses, and many others struggling to achieve even modest growth trajectories.

Over the past 10 years, an incredible 276 stocks that belonged to the Russell 2000 saw earnings grow by 500% or more,[13] and the cumulative growth of each stock in this group averaged a staggering 4,750%. While the Russell 2000 Index has consistently included more unprofitable companies than the Russell 1000 Index, we believe it also offers a richer set of strong earnings compounders than the large-cap index.

These observations suggest to us that, when it comes to small caps, searching for companies with attractive growth profiles—rather than relying on an index that homogenizes radically different growth trajectories—is well worth the effort.

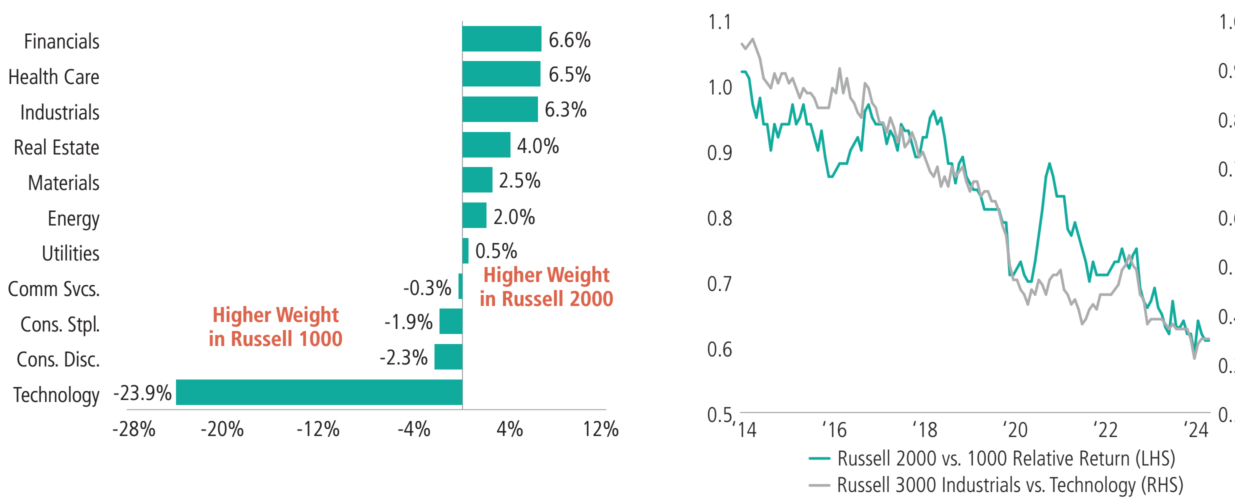
Disparities in Value (Sectoral Composition)

Small-cap equities have been out of favor for over a decade, underperforming their large-cap counterparts by an annualized 5% since 2014.[14] A primary culprit for that relative underperformance, in our view, has been the sectoral composition of small caps vs. large caps.

The Russell 2000 Index is currently 24% less weighted to the Technology sector relative to the Russell 1000 Index, and 7% more weighted to the "old-economy" Industrials sector (see the left side of figure 6).[15] We find that up to 83% of the relative underperformance of the Russell 2000 vs. the Russell 1000 going back to 2014 can be explained by the relative performance of these two sectors (as shown on the right).[16]

FIGURE 6: SECTOR TILTS HAVE PLAYED A SIGNIFICANT ROLE IN THE RELATIVE PERFORMANCE OF SMALL CAPS

Russell 2000 vs. 1000 Sector Tilts



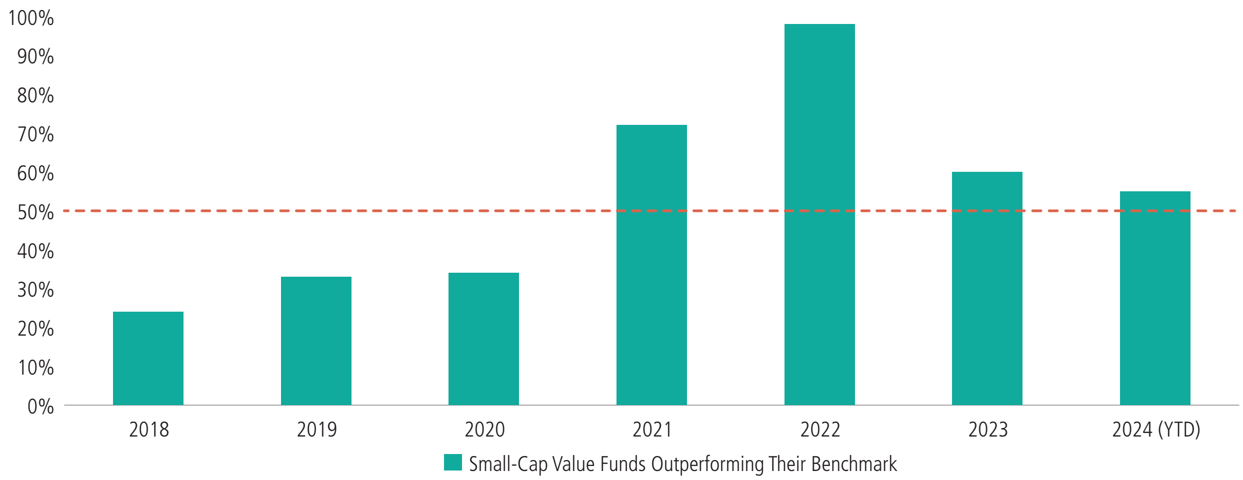
Source: Neuberger Berman Research and FactSet. Data as of October 15, 2024. For illustrative purposes only. Indexes are unmanaged and are not available for direct investment. **Past performance is not indicative of future results.**

[12] Source: BofA Equity Strategy. Data as of May 30, 2024.
[13] Within the Russell 1000, the number of companies that saw earnings grow by at least 500% was 103.
[14] Neuberger Berman Research and FactSet, data as of October 15, 2024.
[15] Source: Neuberger Berman Research and FactSet. Data as of October 15, 2024.
[16] Source: Neuberger Berman Research and FactSet. Data as of October 15, 2024.

Passive investors have little choice but to match the weights of the index being tracked and accept these sectoral distortions, whereas active managers have the flexibility to deviate meaningfully from index weights and potentially improve their relative performance, in our view.

For example, being underweight the struggling healthcare sector in 2021 – 2023 helped a majority of small-cap value managers beat their benchmarks—and 55% continue to do so thus far in 2024 (see figure 7).[17]

FIGURE 7: SECTORAL POSITIONING HAS HELPED SMALL-CAP VALUE MANAGERS BEAT THEIR BENCHMARKS



Source: BofA, data as of September 30, 2024.

This ability to address sectoral distortions is yet another reason we believe taking an active investment approach makes good sense.

Ten Surprising Facts About Small Caps

As a group, small caps exhibit an especially wide array of characteristics and performance drivers. Here are 10 that even seasoned investors may not realize.

1. **Small caps are not that small.** As of September 30, 2024, 27 stocks in the Russell 2000 Index had a market cap greater than Bath and Body Works, the smallest member of the S&P 500 Index.[18] On the other hand, a notable 83 stocks within the S&P 500 Index had smaller market caps than Summit Therapeutics, the largest stock in the Russell 2000 Index.
2. **A century of cycles:** Small cap vs. large cap performance leadership cycles are nothing new. Since 1925, these cycles have lasted about a decade at a time.[19]
3. **Russell 2000 composition changes rapidly.** Only 56% of companies that were in the Russell 2000 Index in 2019 still appear in the index today, vs. 81% for the S&P 500 during the same period. Of the 2019 constituents, 25% were acquired, an additional 7% were delisted, and only 4% moved up to the Mid Cap Index (S&P 400). Of the current constituents, 26% came from IPOs and SPACs over the previous five years.[20]

(Continued on Page 8)

[17] Source: Neuberger Berman Research and FactSet. Data as of June 3, 2024.
[18] Source: Neuberger Berman Research and FactSet. Data as of September 30, 2024.
[19] Source: BofA. Data as of June 3, 2024.
[20] Source: Morgan Stanley. Data as of October 16, 2024.

4. **Small cap earnings are highly sensitive to economic growth.** According to 2025 consensus estimates, 77% of Russell 2000 corporate earnings will come from cyclically sensitive sectors such as Financials, Materials, Industrials, Energy, and Consumer Discretionary.[21]

5. **Economic downturns don't always hurt small caps more than large caps.** Small caps typically underperform in bear markets, but there are exceptions: Since 1974, small caps outperformed large caps during four of the last 13 downturns, including the inflationary regimes of the 1970s and 1980s, as well as the aftermath of the dotcom bubble in 2001.[22] And during periods of market stress, such as the COVID-19 pandemic, Brexit and the Taper Tantrum, we found that the average realized volatility of the Russell 2000 was often lower than that of the S&P 500.[23]

6. **Dividends matter for small caps.** Dividend yield has been a very effective and top-performing factor within small caps over the long run. Currently, 41% of the stocks within the Russell 2000 Index pay a dividend. In addition, for the first time in 15 years, a greater percentage of Russell 2000 stocks carry a dividend yield exceeding the 10-year Treasury yield than among the S&P 500.[24] In addition, the S&P 600 Index has the highest dividend yield (1.9%) among major broad U.S. equity indices, including the S&P 500 (1.4%).[25]

7. **Small caps have relatively strong pricing power during inflationary regimes.** Contrary to popular belief, small caps have historically been better at passing on rising costs to customers and preserving margins than large caps. Small caps have outperformed large caps when inflation was elevated (think the early 1960s and 1970s), as well as during periods of below-trend GDP growth and high-but-decelerating inflation.[26]

8. **Illiquidity fears are overstated.** Small-cap illiquidity risk is not as great, relative to large caps, as many investors might think. While small caps have been less liquid than large caps in the past, small-cap liquidity (average daily trading volume as a percent of market cap) has improved significantly relative to large caps since 2021 and has exceeded that of large caps since 2023.[27]

9. **An M&A boom may not be a small-cap boon.** An increase in M&A activity can give a boost to certain sectors such as health care, which tends to outperform when dealmaking accelerates.[28] However, an acceleration in broad-based M&A activity doesn't always coincide with extended periods of small-cap outperformance vs. large caps.

10. **Retail investors account for a third of small-cap trading.** Individual investors account for approximately 35% of small-cap trading volumes compared to 20% for large-cap volumes.[29] In our view, this dynamic creates inefficiencies for active managers to exploit.

[21] Source: Neuberger Berman Research and Morgan Stanley. Data as of October 18, 2024.
[22] Source: BofA. Data as of June 3, 2024. Based on Russell indices back to 1979, and The Center for Research in Security Prices, for historical returns prior to 1979.
[23] Source: BofA. Data as of June 3, 2024.
[24] Ibid.
[25] Ibid.
[26] Ibid.
[27] Ibid.
[28] Ibid.
[29] Ibid.

Conclusion

We believe small caps give experienced active managers the opportunity to exploit—rather than accept—significant disparities in quality, growth and value across the highly contoured small-cap landscape. Furthermore, we believe small-cap managers have the potential to build portfolios with attractive characteristics more comparable to large caps than investors might truly appreciate.

This is the fifth installment in our series on the potential limitations and hidden costs of indexation. For more perspective, please see: The Fine Print of Indexation, The Limitations of Passive Investing to Achieve a Net-Zero Outcome, The Muddy Logic of Passive Commodity Investing, and The Pitfalls of Investing in Factor Indices.

And for a closer look at why we believe the next small-cap cycle is about to begin, please read Small-Caps: The Next Cycle Is Upon Us.

Appendix

TABLE 1: CORRELATIONS OF SMALL-CAP VS. LARGE-CAP RELATIVE PERFORMANCE WITH SIGNIFICANT MACRO DRIVERS

Macro Drivers of Small vs. Large Caps	Correl. with Russell 2000 vs. 1000 y/y
ISM Mfg.	38%
Brent Oil Price	36%
NFIB Small Business Optimism	32%
CRB Industrial Metals	32%
U.S. Industrial Production	18%
U.S. IG Bond Spreads	-20%
SLOOS - Net % Tightening (Small firms)	-27%
U.S. High-Yield Spreads	-28%
Trade-Weighted USD (Nominal, Broad)	-30%
SLOOS - Net % Tightening (Large/Med. firms)	-31%
VIX	-31%

Source: Neuberger Berman Research and FactSet. January 2000 to September 2024.

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Index Definitions

The S&P 500 Index consists of 500 U.S. stocks chosen for market size, liquidity and industry group representation. It is a market value-weighted index (stock price times number of shares outstanding), with each stock's weight in the Index proportionate to its market value.

The Russell 1000® Index measures the performance of the large-cap segment of the U.S. equity universe. It is a subset of the Russell 3000® Index and includes approximately 1,000 of the largest securities based on a combination of their market cap and current index membership.

The Russell 2000® Index measures the performance of the small-cap segment of the U.S. equity universe.

The Russell 3000® Index measures the performance of the largest 3,000 U.S. companies designed to represent approximately 98% of the investable US equity market.

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