



**Microcaps: Value  
Uncovered**

A magnifying glass with a silver handle and a white lens is positioned over the word 'Value' in the title. The lens is focused on the word, making it appear larger and more prominent.

The world of microcap stocks is an exciting, vast and rich place to allocate capital. In the US, it encompasses over 3,300 stocks which total nearly \$665 billion in market capitalization, representing a small but important 3% of the total US equity market. Many of these stocks are, in practice, far too small and illiquid to make material investments; therefore we define the microcap universe as stocks listed on a US exchange and with market capitalizations between \$30 million and \$1 billion. That brings this universe to 2,200 securities. We then run a liquidity screen eliminating stocks that do not meet our liquidity profile. This further reduces the universe to 1,600 investable stocks with a total market capitalization of just over \$635 billion, with average and median market caps of \$404 million and \$342 million, respectively.<sup>1</sup>

As we shall see, microcap stocks outperform their larger-cap brethren over the long run given market inefficiency, the liquidity risk premium, and other interesting effects related to their size. We will see how overlaying a quality-value bias augments this performance. Furthermore, active management is more effective at driving alpha given the large and diverse population of microcap stocks as well as their higher trading costs. We will also see how microcap investing stacks up against private equity and discuss some of the pitfalls of internal rate of return (“IRR”) calculations.

### **Performance and Risk**

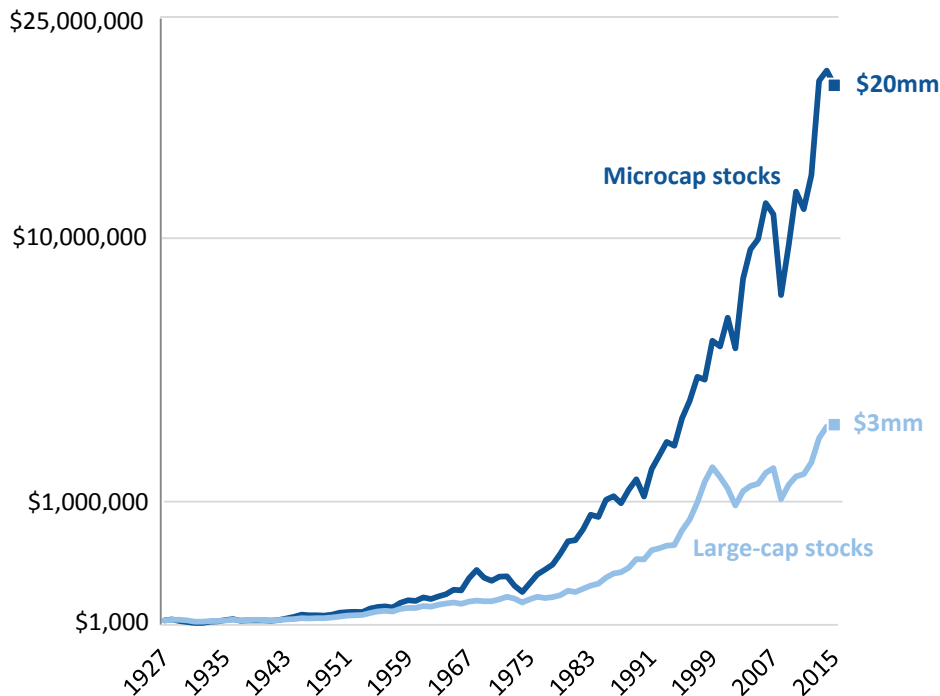
In order to understand the performance of small- and large-capitalization equities, we analyzed datasets provided by Fama-French<sup>2</sup> which go back to June of 1926. This represents almost 90 years of historical returns and is one of the most robust sources available for understanding long-term equity market performance. We compare the performance of the top decile, which represents large-capitalization stocks, with the average of the second- and third-lowest deciles, computed over 1,074 months through year-end 2015. We eliminate the lowest decile given that most of these stocks are too small and illiquid to make material investments in them.

The evidence is clear: Microcap stocks annualized 11.7% total return over this period, versus large caps’ 9.4%. In other words, microcaps on average beat large stocks by an annual spread of 235 basis points, which makes a material difference when compounded annually. To illustrate the point: If you were lucky or smart enough to invest \$1,000 in June of 1926, your capital would have turned into \$20 million if invested in microcaps compared to just \$3 million if invested in large caps.

**FIGURE 1**

**Micro Beats Large over the Long Term**

*Growth of \$1,000  
(Fama-French Returns June 1926–December 2015<sup>2</sup>)*



*The chart above is drawn to a square root scale on the compounded values of \$1,000 invested. \$20mm and \$3mm are the dollar amounts generated by microcap and large-cap stocks, respectively, as of 2015, based on an investment of \$1,000 beginning in 1927.*

Next, we analyzed the risk profiles of these returns by taking a look at their standard deviations. The average annualized standard deviation of microcaps over this dataset is 29% versus 18% for large caps. The higher return earned in microcap stocks is therefore somewhat justified by the higher level of volatility. What drives this spread in volatility? We attribute the higher volatility to lower liquidity and to the fact that microcap stocks tend to have less business diversification, scale, and market power. The microcaps’ batting average (the number of months they beat large caps) is 56%.

If we look at this dataset in 10-year rolling increments, however, we see a different picture. The standard deviations of microcaps and large-cap stocks converge to 5.8%. The microcaps’ return per unit of risk improves to 2.2x compared to just 1.7x for large caps, and the batting average jumps to 76%. Taking this longer-term view, the microcap investor is amply rewarded.

For a more practical and shorter-term example we look to the Russell Microcap Index<sup>3</sup> which is a good proxy for this universe. It represents 1,634 companies with a combined market capitalization of over \$400 billion and average and median market caps of \$254 million and \$179 million, respectively.<sup>1</sup> We will look at returns from the inception of this index (August 2000) through year-end 2015.

The Russell index data corroborates the longer-term Fama-French data. The Russell Microcap Index delivered an annualized return of 7.1% versus 4.6% for the Russell 1000.<sup>3</sup> This is a 249-basis-point spread, which, again, makes a material difference when compounded over many years.

Microcaps also behave somewhat differently from the broader market. When analyzing the Russell Microcap Index from its inception to the present we find it has an R-squared of 0.74 to the Russell 1000. This is one of the lowest correlations for two groupings within the equity universe, which is good for diversification purposes.

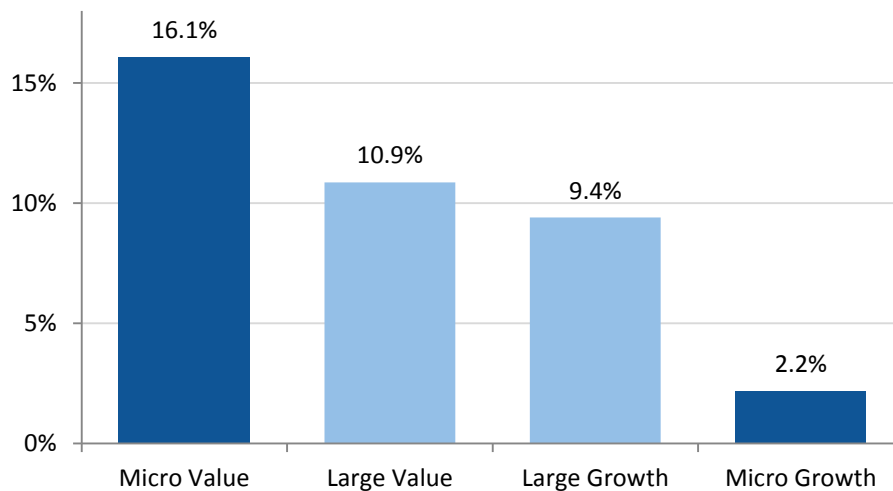
**Value vs. Growth**

We clearly see that microcap stocks outperform large-cap stocks, but what about style differences between value and growth? Taking the same period as before (June 1926 through December 2015), we ran the Fama-French data to compare the return of the smallest quintile with a high price-to-book ratio (micro growth) to that of the smallest quintile with a low price-to-book ratio (micro value). What we found is striking: The annualized return for micro value is 16.1% versus a mere 2.2% for micro growth. Large value also beats large growth but the spread is far smaller, with large-cap value delivering 10.9% versus 9.4% for large-cap growth.

**FIGURE 2**

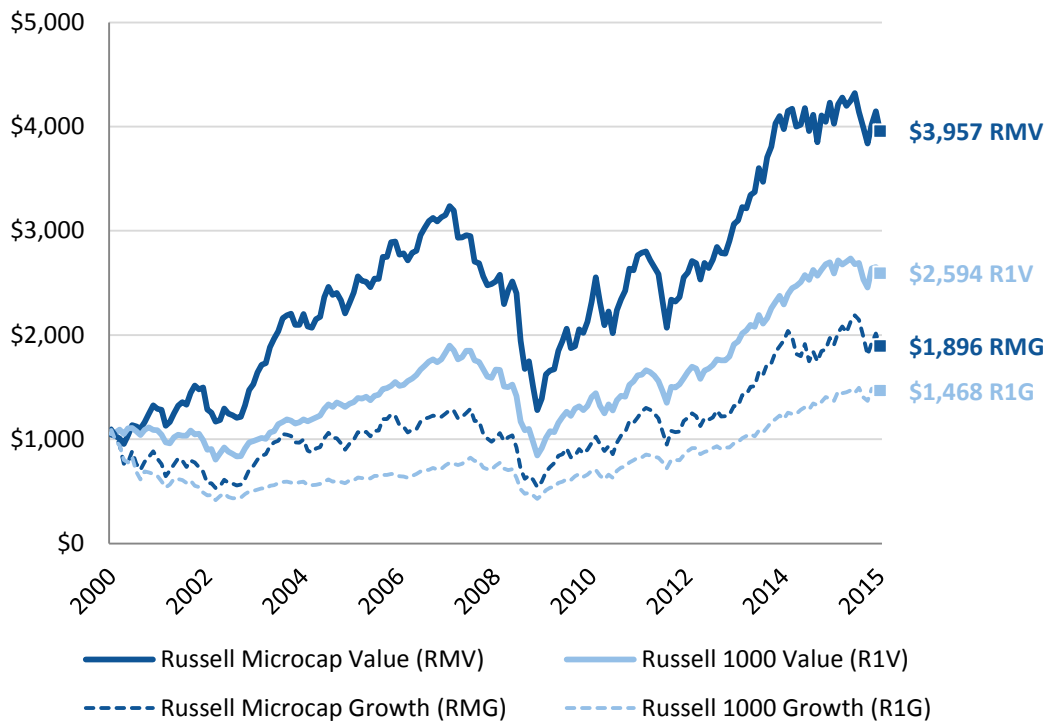
**Micro Value Beats All Other Equity Variations**

*(Fama-French Annualized Returns June 1926–December 2015<sup>2</sup>)*



Looking at style differences over shorter periods using the Russell indices yields similar results. The Russell Microcap Value Index gained a strong annualized return of 9.3% versus 4.2% for the Russell Microcap Growth Index (August 2000 through December 2015). The Russell 1000 Value Index returned 6.4% versus the Russell 1000 Growth Index’s 2.5% over the same period. This data reinforces the point that, from an asset allocation perspective, smaller stocks with a value tilt outperform all other equity variations.

**FIGURE 3**  
**Russell Micro Outperforms Large**  
*Growth of \$1,000*  
*(Russell Index Returns August 2000–December 2015<sup>3</sup>)*



**Inefficiency and Active Management**

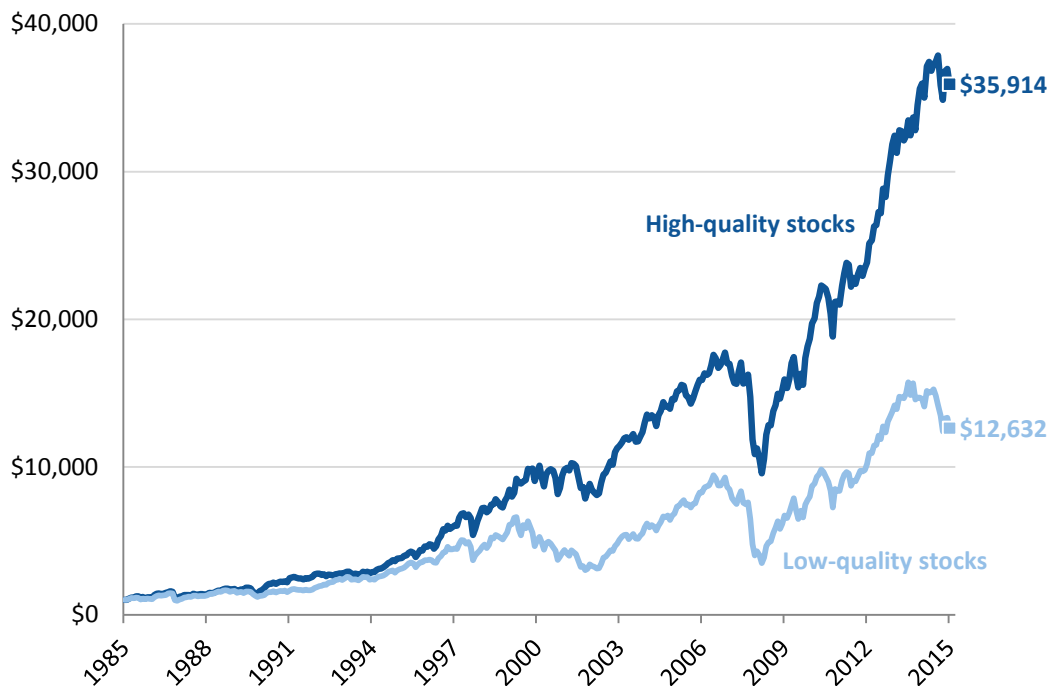
Why do microcaps outperform larger-caps? Microcaps occupy a less efficient marketplace, making them well suited to active management. This inefficiency stems in part from less analyst coverage, which reduces the dissemination of relevant information. According to FactSet Research Systems, a stock in the Russell Microcap Index has on average two “sell-side estimates”<sup>\*</sup> compared to four for a stock in the Russell 2000 and twelve for one in the Russell 1000. In fact, over 28% of microcaps have no sell-side coverage at all, compared to just 4% of small caps.<sup>4</sup>

<sup>\*</sup> “Sell-side estimates” refers to research on publicly traded companies, such as sales and earnings estimates, published by third-party firms.

Due to their smaller size, microcaps offer the fundamental analyst better access to management and an opportunity to better understand the drivers of the business. In a hypothetical example, Company A, which is large and well followed, conducts a restructuring to lower costs. The investment community will rapidly determine the value of the cost savings and the share price will adjust accordingly. If, on the other hand, Company B, which is small and underfollowed, conducts a similar restructuring, it may take more time for the market to decipher the effects on the business.

One of the arguments against microcaps is their lower quality as evidenced by ROEs. On the surface this is valid: The Russell Microcap Index has an average ROE of 6.0% versus 13.6% for the Russell 1000. This is most likely due to the greater market power and scale of larger companies. However, active management has a key role to play here: Since there are more microcap names to analyze than there are large-cap names, and given the wide dispersion of returns among them, the active manager can add significant value by picking higher-quality and more liquid companies with leading ROEs. This quality bias has shown to deliver superior performance over time. In fact, according to the Leuthold Group, high-quality stocks outperformed low-quality stocks by 390 basis points on an annualized basis from 1985 through 2015.<sup>5</sup> Leuthold defines high-quality stocks as those with high ROEs, low financial leverage, and stability of earnings and sales.

**FIGURE 4**  
**Quality Is a Winner over Time**  
*Growth of \$1,000*  
*(Leuthold Annualized Return Data 1985–2015<sup>5</sup>)*



There is clearly a place for passive management in a portfolio; however, passive investment in microcaps has not been successful. Microcap exchange traded funds (ETFs) have been poor proxies for the indices they track as evidenced by high tracking error.<sup>6</sup> Much of this is due to higher trading costs for less-liquid securities. As we have mentioned, the active manager can avoid the most illiquid names and choose to buy higher-quality names, thereby adding value to the investment process.

### **Liquidity Risk Premium**

Another factor driving stronger microcap performance is the liquidity risk premium. Because of lower daily trading volumes, trading costs for microcap stocks are higher. Trading costs result from both direct commissions and the price movements caused by buying or selling shares. Investors are compensated to some degree with higher returns in exchange for less liquidity.

For example, take Empire Resources, Inc. (ERS), which has a market capitalization of \$30 million and trades on average 4,000 shares or \$15,000 per day. To build a \$1 million position would take around 333 trading days (this assumes acquiring 20% of the daily trading volume). This thinly traded stock would be very difficult for an institutional investor to own. On the other hand, this liquidity distortion is far less of an issue as we move up the cap spectrum. By avoiding the smallest microcap stocks with limited float, we can construct a portfolio that provides better liquidity without compromising performance. For example, ICF International (ICFI), which has a market capitalization of \$760 million and trades on average over 100,000 shares or \$3.4 million per day, would take under two days to reach a \$1 million position, assuming we acquire 20% of the daily trading volume.

Liquidity risk is therefore dependent on the size and share turnover of the company, but fund size matters as well. Larger funds pose a threat to their own performance as they grow, reducing their flexibility to buy and sell positions.

### **Small Companies, the M&A Effect, and Insider Ownership**

Microcap companies have other characteristics that make them attractive. Because they are small (law of small numbers) their growth rates can appear larger off smaller bases, small acquisitions can have greater effects, and cost savings can be more pronounced. In a world of very low interest rates and tepid GDP growth, larger companies have a heightened appetite for acquisitions, and microcaps tend to be their targets. In fact, over 60% of all mergers and acquisitions conducted since 1992 occurred at the microcap level compared to 25% at the small-cap level.<sup>4</sup>

Another factor is that owners tend to run better businesses than managers. Microcap equities have higher overall levels of insider ownership than larger companies. The Russell Microcap Index has 10% insider ownership on average, compared to 4% for the Russell 2000 and 0.4% for the Russell 1000, as of year-end 2015.<sup>1</sup> At times, higher family ownership and dual-class share structures can lead to nepotism and an asymmetric alignment of shareholder and manager interests (agency problems); despite this drawback, we believe high levels of insider ownership are a net positive as owner-managers' interests are more aligned with the interests of shareholders.

**Microcap vs. Private Equity**

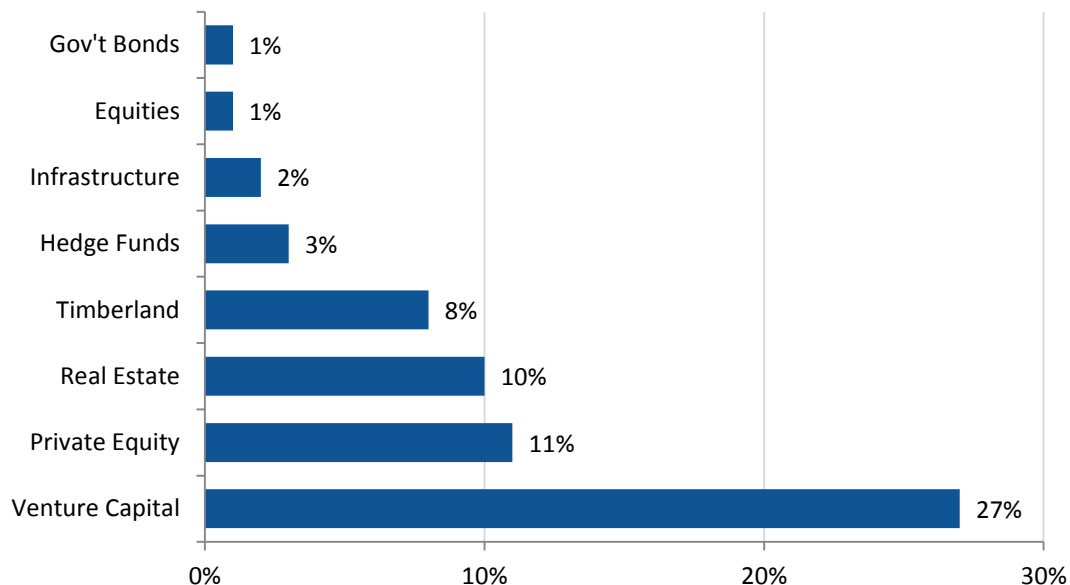
It is often argued that microcap equities form their own asset class comparable to private equity. While private equity has a place in a diversified portfolio with the power to influence a company, it also has some real limitations. These limitations include less liquidity, higher volatility due to leverage, marking-to-market unquoted assets, smoothing of returns, potential distortions using internal rate of return (IRR) measurement, and high fees. So, is the investor being compensated for these limitations? Let’s take a closer look.

A private equity portfolio generally comprises private, unlisted companies that are assigned values by the very firms that own them. This creates a conflict of interest and biases valuations upward. Additionally, these assets are priced less frequently than those in public equity, which creates a smoothing effect on the return profile.<sup>7</sup> This makes a private equity portfolio’s stated volatility appear low when actual volatility may be far higher. Figure 5 shows the difference between adjusted and reported (from index returns) volatilities for several asset classes. It highlights that private equity and venture capital have far higher actual volatilities than what is reported. High autocorrelations in private equity help prove this to be the case, as most of the return profile’s history correlates with itself.

**FIGURE 5**

**Volatility in Private Equity Is Higher than Reported**

*Actual versus Reported Volatility across Asset Classes  
(December 2012<sup>7</sup>)*



Inherently, the drivers of private equity businesses like GDP, interest rates, and industrial production are no different from those of public equity investment, despite the belief that private equity is uncorrelated to all other asset classes. If correlations are indeed high between the two asset classes, and given the far higher debt levels and lower liquidity in private equity, the investor may be increasing risk without being adequately compensated with higher returns.



Microcaps, by contrast, have relatively low levels of financial leverage compared with private equity and larger-capitalization stocks. The debt-to-EBITDA ratio is 2.0x for the Russell 1000 Index and 1.8x for the Russell Microcap Index as of March 2016, compared to at least 4.0x for a typical private equity portfolio by our estimate.

Examining the measurement of returns in private versus public equity reveals further distortions. Most public equity portfolios use daily time-weighted returns given that the securities they hold are generally quoted daily. Most private equity funds, on the other hand, determine their performance using IRR calculations, which have some serious flaws. IRRs are very dependent on the timing of cash flows, the duration of the investment, and, importantly, the assumption that all interim proceeds will be reinvested at the stated IRR.

Figure 6 shows how much the assumption that all cash flows are reinvested at the same rate distorts reported IRR. In the first column, the investor puts in \$100,000 and receives cash flows of \$175,000 over the life of the investment, for an IRR of 15%. However, if this investor had put the same amount in an investment compounding at 10%, the total cash received would be greater. The difference is that the investor must *also* reinvest those interim cash flows at 15% to actually realize the stated return.

**FIGURE 6**  
**IRRs May Overstate Returns**  
**Unless You Can Reinvest Interim Cash Flows at the Same Rate**

Year	Cash Flows Resulting in a 15% IRR	Versus a 10% Compounded Return (CAGR)
0	-100,000	100,000 (initial investment)
1	50,000	110,000
2	25,000	121,000
3	0	133,100
4	0	146,410
5	0	161,051
6	0	177,156
7	100,000	194,872
<b>Ending Cash:</b>	<b>175,000</b>	<b>194,872</b>
<b>IRR:</b>	<b>15%</b>	
<b>CAGR:</b>	<b>8%</b>	<b>10%</b>

**A 15% IRR can potentially result in less cash than a 10% compounded return.**

The IRR calculation is also heavily distorted by the *timing* of cash flows. One way a shorter-duration fund vehicle can game its return is by borrowing money and extracting a large dividend payment from its portfolio companies. For example, if the investor puts in \$100 million and the private equity fund buys a company, borrows \$50 million, and immediately returns \$50 million to the investor, that makes the IRR look fantastic. However, the reality is that the combination of leverage and timing have augmented the investor's return such that it would be unrealistic to assume this high rate could be sustained over the remaining life of the fund. Finally, the stated IRR only relates to *invested* capital, while a higher level of *committed* capital is typically waiting on the sidelines to be invested, creating a further drag on actual realized returns.

Private equity benchmark returns are also biased upward over time due to selection, backfill, and survivorship biases. Given that private equity funds comprise the benchmark, whereas most public equity benchmarks track actual company (stock) performance, private equity firms can incubate a variety of funds and choose to submit only those funds that generate superior returns for benchmark inclusion (selection bias). After cherry-picking the very best funds, they can retroactively provide historical performance (backfill bias). Should one of these funds begin to perform poorly, the manager can remove the fund from the benchmark, wiping out its poor performance history (survivorship bias). Clearly, these biases have the potential to result in overstated performance in private equity indices.

High returns, or the expectation of future high returns, tends to attract capital. This can lead to too much capital chasing too few solid ideas. The private equity and venture space has attracted fantastic amounts of capital since 2009: Fund flows show that global private equity has raised over \$800 billion on a net basis since 2009, compared to net *outflows* of \$2 billion for US actively managed microcap mutual funds.<sup>8</sup> According to Preqin, the number of private equity funds has steadily increased over time, rising from 1,145 funds in 2013 to 1,684 through the first quarter of 2016, which represents a 47% increase. These funds have an aggregated \$775 billion in dry powder—an all-time high.<sup>9</sup> We find it difficult to believe this amount of capital can be deployed at anywhere near historical reported returns.

In addition to these significant limitations, private equity funds also employ higher fees than traditional equity vehicles. Many funds charge 1, 2, or even 3% of committed capital (even if all capital is not deployed) and 20% of profits above a hurdle rate. In short, the private equity investor faces limited liquidity, higher than reported volatility, and somewhat less reliable performance measurements—and pays handsomely for the privilege.

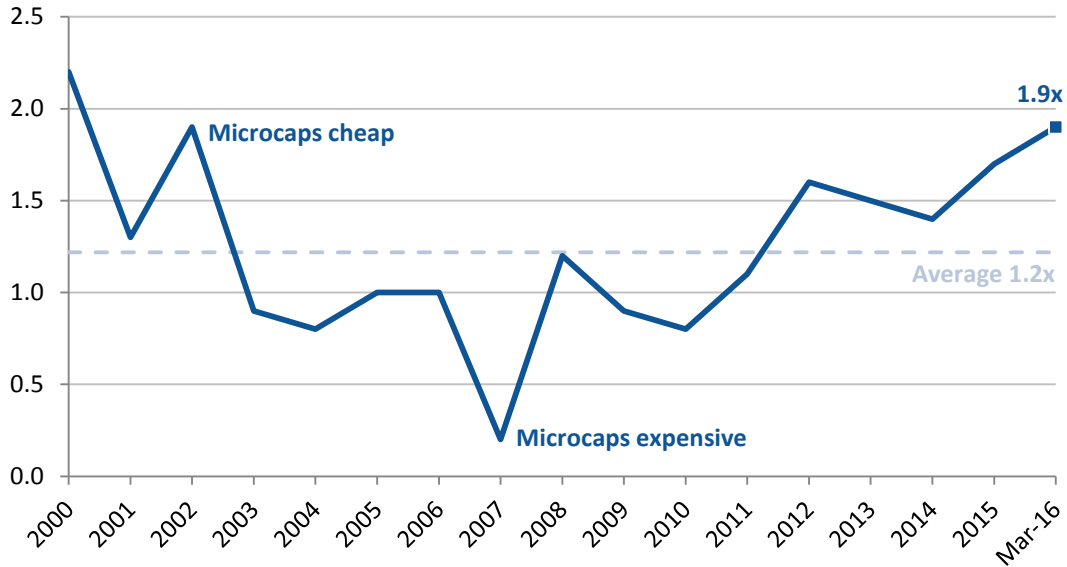
### **Why Now: Valuation and Geographic Exposure**

Are microcaps interesting today relative to other asset classes? If we focus on valuation, microcaps have, on average, traded at a discount to large caps over the last 15 years. When comparing the Russell Microcap Index to the Russell 1000 Index we find that their price-to-book (P/B) ratios have averaged 1.9x and 3.1x, respectively. On an enterprise value-to-EBITDA (EV/EBITDA) basis the Russell Microcap Index has averaged 8.2x, versus 9.4x for the Russell 1000 Index over the same period. As Figure 7 illustrates, current valuation spreads between microcaps and large caps are wider than they have been historically: The P/B spread between the Russell Microcap Index and the Russell 1000 Index was 1.9x as of March 2016 versus its 15-year historical average of 1.2x.

FIGURE 7

Microcaps Appear Cheap

Large-cap versus Microcap Price-to-Book Spreads  
(Russell Index Data 2000–2015<sup>3</sup>)



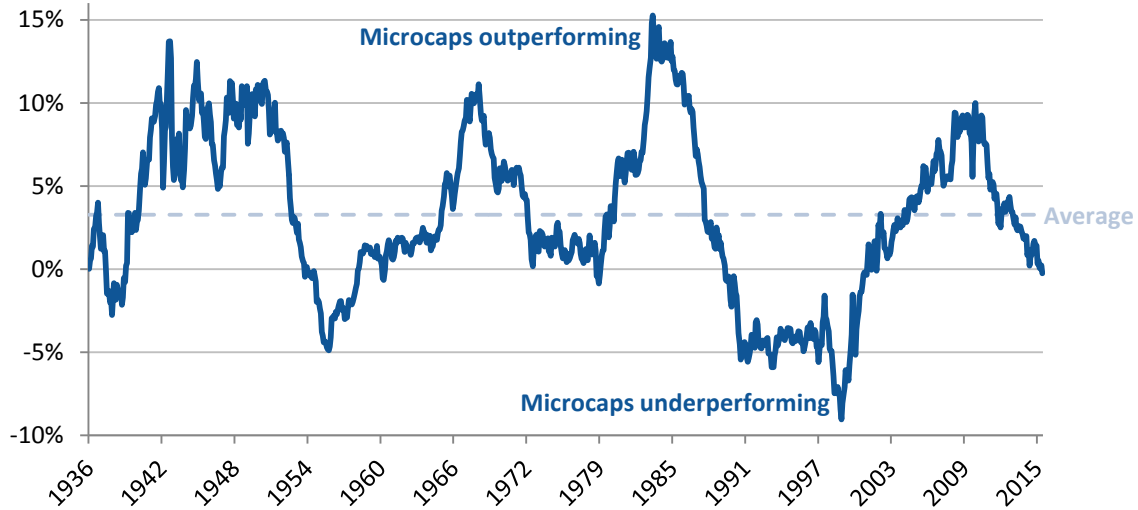
Microcaps also have more domestic exposure than large stocks, which tend to derive more of their sales from international markets, including emerging ones. Companies in the Russell 1000 derive 36% of their sales from international geographies, versus approximately 14% for the Russell Microcap Index as of December 2015.<sup>1</sup> This has worked in microcaps’ favor as the strong dollar has dampened international sales. A second issue has been lower organic sales of US goods sold internationally as their prices inflate more rapidly than those of local goods, resulting in a loss of market share. In addition, while the US domestic economy is seeing tepid growth, relative to other developed markets it has been an island of strength and stability. Microcaps have benefited from this trend and may continue to do so. Additionally, the free cash flow domestic companies generate can be readily redeployed in the form of dividends and buybacks whereas many larger corporations have cash trapped abroad.

Despite being cheaper than their historical average, microcaps have also been somewhat out of favor as they have underperformed large-cap stocks since 2009, as illustrated by Figure 8 below. While this trend could persist, it also may be at an inflection point given lower relative valuations.

**FIGURE 8**

**Are Microcaps Poised to Outperform?**

*Microcap versus Large-Cap 10-Year Rolling Return Spreads  
(Fama-French Returns June 1936–December 2015<sup>2</sup>)*



**Summary**

Microcap investing offers compelling returns for the long-term investor well in excess of large-cap returns because microcaps are an underfollowed and less efficient asset class. Many of these companies take an entrepreneurial and dynamic approach to managing and growing their businesses. Microcaps are not without risk, of course, as they typically have less liquidity which leads to higher volatility. Overlaying microcaps with a value-quality tilt significantly improves these returns and reduces risk. Further, given their inefficiency and limited coverage, this asset class is ripe for active management. Microcaps also enjoy higher insider ownership, greater exposure to the domestic economy, and increased M&A activity relative to larger stocks. Microcap investing presents a viable alternative to private equity investing given its increased relative liquidity, unlevered return profiles, more reliable performance metrics, and much lower fees.

Microcaps are an exciting place to invest and have proven themselves as a viable asset class that can add significant value to an investor’s portfolio over the long run.

## About the Manager

DGHM employs a fundamental, value-driven investment philosophy with a particular expertise in small- and microcap investing. The firm's team of nine Sector Specialists is passionate about uncovering high-quality franchises trading at discounts to intrinsic value. The DGHM MicroCap Value strategy has achieved an annualized return of 14.0% since its inception in 1990.<sup>10</sup>

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<sup>1</sup> FactSet Research Systems Inc.

<sup>2</sup> Kenneth R. French Data Library, Tuck School of Business at Dartmouth College. (2015). Retrieved from [http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data\\_library.html](http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html). The date ranges used in this paper begin in June 1926 and end in December 2015. Deciles 2 and 3, used to calculate the microcap returns, have average market caps of \$362 million and \$732 million, respectively, in 2015 dollars. The returns are weighted by market cap and computed monthly.

<sup>3</sup> Russell data via FactSet Research Systems. The Russell Microcap, Russell Microcap Value, Russell 1000, and Russell 1000 Value indices are trademarked by Frank Russell Company. The Russell Microcap Index represents US microcap stocks. The Russell 1000 Index represents the largest US publicly traded companies. The Russell Microcap Value and Russell 1000 Value indices represent companies within the Russell Microcap and Russell 1000 indices, respectively, that exhibit lower price-to-book and price-to-earnings ratios and lower forecasted growth values.

<sup>4</sup> Furey Research Partners. (2015). *The Case For Microcaps 2015* [PowerPoint slides].

<sup>5</sup> Leuthold Group. (2016). Retrieved from <http://www.leutholdgroup.com/stock-market/articles/2016/04/07/high-quality-stocks-slightly-underperform-ytd>.

<sup>6</sup> Conway, Brendan. (March 18, 2013). Microcap ETFs Still Don't Work: Morningstar. *Barron's*. Retrieved from <http://blogs.barrons.com/focusonfunds/2013/03/18/microcap-etfs-still-dont-work-morningstar/>.

<sup>7</sup> Pedersen, Niels, Page, Sébastien, and He, Fei. (2014). Asset Allocation: Risk Models for Alternative Investments. *Financial Analysts Journal*, 70(3), 34-45.

<sup>8</sup> Evercore ISI. "Microcap mutual funds" are those with at least 75% of their holdings in microcap stocks.

<sup>9</sup> Prequin. (2016). The Prequin Quarterly Update: Private Equity, Q1 2016 [Excel workbook].

<sup>10</sup> As of March 31, 2016, gross of fees.