

## A case for microcap investing: Investors might be missing out on a potentially beneficial segment of the market cap spectrum

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Although definitions vary, there are approximately 4,850 companies with market caps under \$1 billion in the US (4,575 under \$700 million). As an asset class, microcaps offer investors the opportunity to participate in smaller, nimble and niche businesses where managements tend to operate free of the bureaucracy and complexity inextricably linked with global behemoths.

### Are microcap equities a viable

**asset class** and if so, are investors missing out on a potentially beneficial segment of the market cap spectrum? It is our belief that microcap equities are often an overlooked asset classes and should be more closely looked at as a component of a well-diversified portfolio. Despite our beliefs, microcaps are often shunned by institutional investors due to the notion that any premium earned is counterbalanced by inherently high price volatility. Adding to this stigma, many microcaps are overleveraged which compels many investors, including ourselves, to mitigate these risks by looking for companies with clean balance sheets. In an effort to take a closer look at the realities of microcap investing and the perceptions that inhibit consideration for institutional portfolios, we examined the Russell 2000 Index, the Russell Microcap Index and we constructed a Low-Debt Microcap Index\* using a subset of the Russell Microcap Index including only companies with debt-to-capital ratios of 30% or less.

\* The Low-Debt Microcap Index is a hypothetical model

We begin with a comparison of returns and volatility among these three indexes followed by a discussion of annualized returns and risk/reward. We continue by addressing similarities to and flushing out differences between microcap and private equity. Finally, we give mention to a highly valuable but little-mentioned paper on liquidity, which we believe makes an indirect case for microcaps.

Throughout this paper, we intend to demonstrate why investors should consider supplementing traditional small caps with microcaps.

We will show why low-debt microcaps actually benefit portfolios by generating favorable returns and risk/reward ratios.

This can be achieved, while producing lower correlations and providing exposure to a liquidity premium. Said another way, investors can enhance returns to small cap stocks by adding an allocation to low-debt microcaps.

### Definitions:

- We examined return history using Factset data starting with the creation of the Russell Microcap Index in July 2000 through September 2017
- We defined the risk/reward ratio using annualized returns calculated from July 2000 through September 2017 divided by the standard deviation of monthly returns.
- All data, unless otherwise noted, is sourced from FactSet.

### Explaining 5-year rolling risk:

To assess volatility for the indexes used throughout this paper, we use standard deviation, a simple and commonly accepted measure of volatility. It is important to note that volatility measured over shorter but relevant time periods can deviate sharply from its long-term average. For example, over our 17-year measurement period the standard deviation for the Russell 2000 (5.6) was 18% lower than that seen during the 5-year period ending Sep 2011 (6.8) and 39% higher than the 5-year period ending Aug 2017 (4.0). Similar differences were seen for each index revealing that standard deviation can vary significantly depending on the timeframe. Rather than base our study using risk and reward metrics for a single, 17-year period, we employ 5-year increments to match returns earned during periods of high (or low) volatility. Also, a five-year time horizon is a commonly used evaluation period for managers and asset class allocations.

Accordingly, each data point on the curve represents the return measured over the five years ending on that date. For example, the last point on the Rolling 5-yr Volatility chart (page 4) captures the five-year period from Oct 2012 – Sep 2017 providing values of 4.0 for the Russell 2000, 4.4 for the Russell Microcap and 4.6 for the low-debt microcap indexes. A total of 148 five-year periods are shown and graphing these data gives us the rolling five-year risk of each asset class.

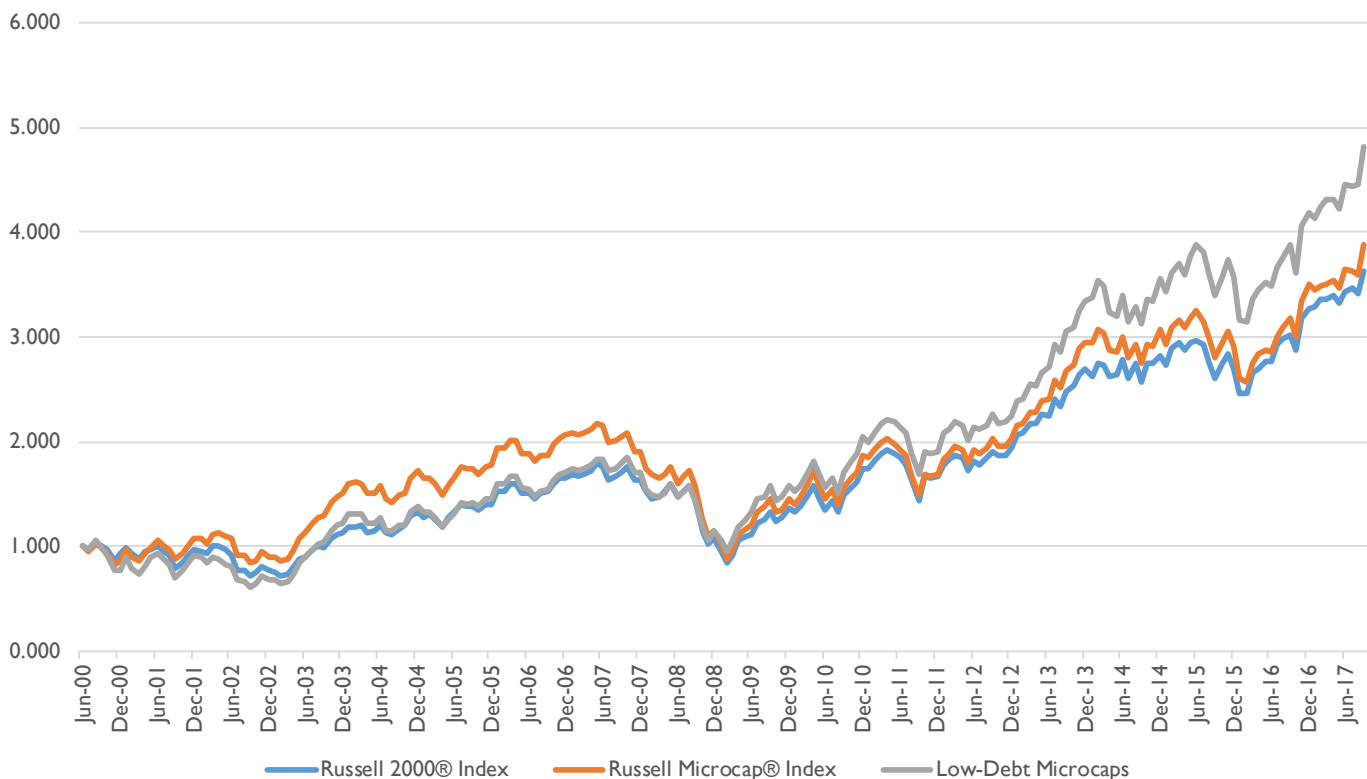
Similarly, we analyzed returns and risk/reward ratios using the same rolling framework.

## Returns of small, micro and low-debt microcaps

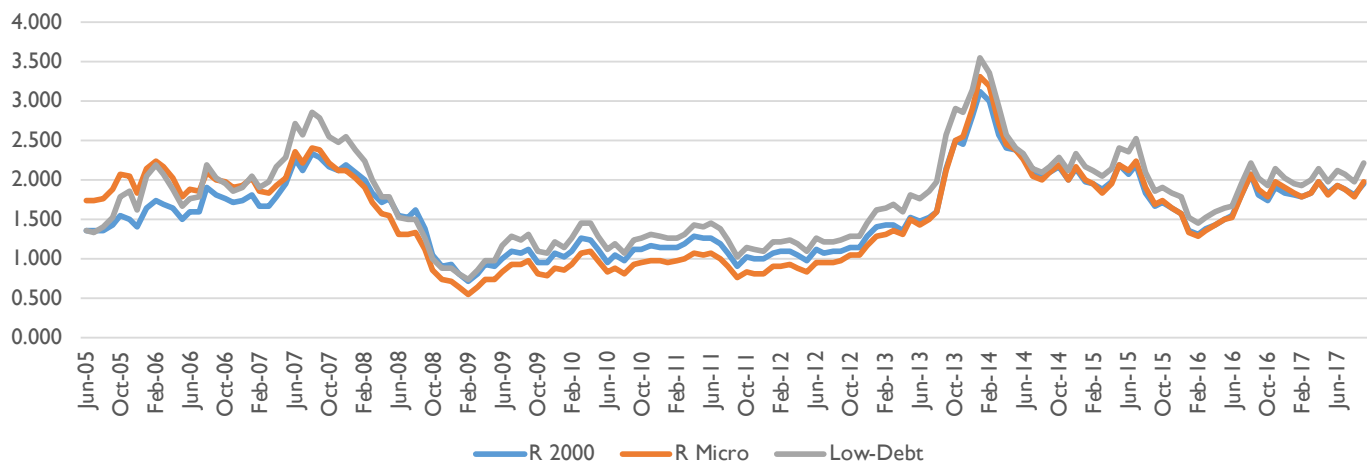
Throughout the 17-year time period examined, low-debt microcaps provided an annualized return of 9.5% - a full 130 bps above the Russell Microcap Index and 175 bps higher than the Russell 2000 Index.

Low-debt microcaps also outperformed the Russell 2000 in 94% of the rolling 5-year periods from June 2005 – September 2017 as depicted in the rolling return chart below.

### Cumulative Returns



### 5-Year Rolling Cumulative Return



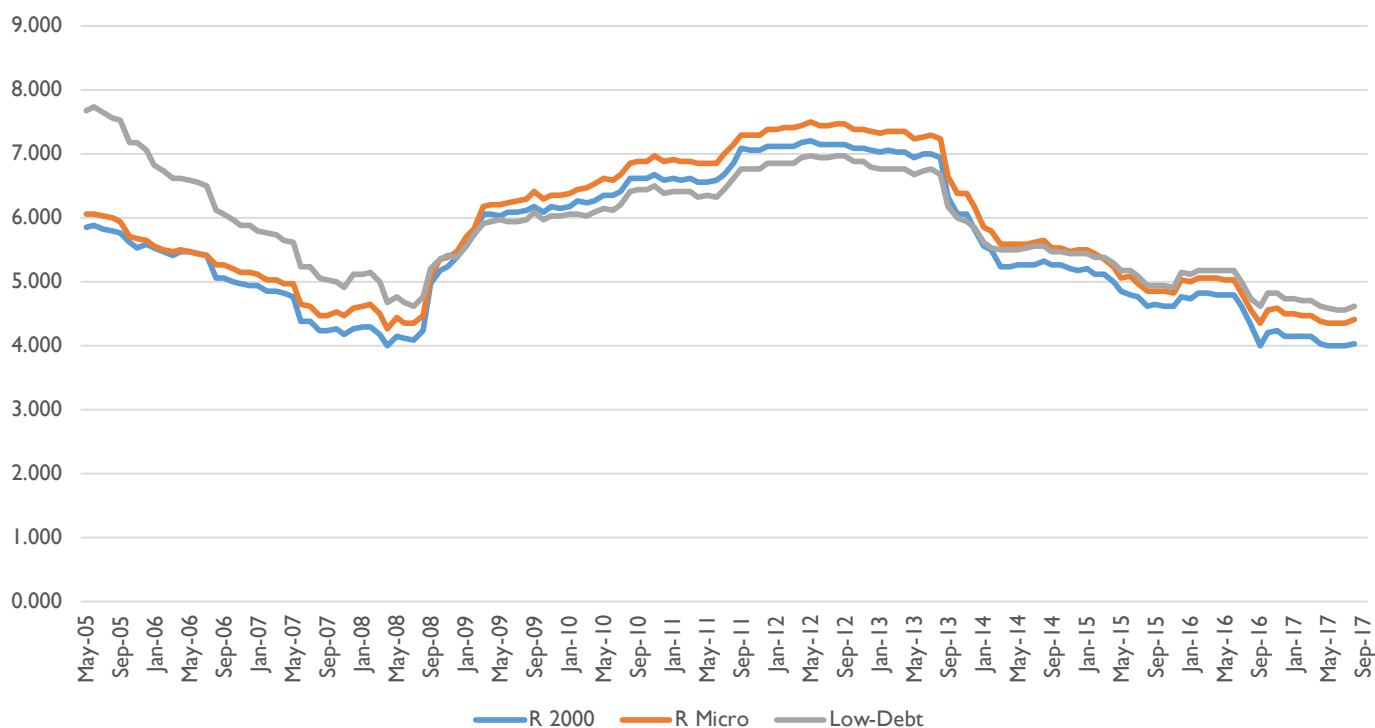
## Comparison of risk

As shown in the Rolling 5-yr Volatility chart below, the rolling five-year risk for each index follows a similar pattern. We should note the large difference between low-debt compared to small and microcaps is driven by abnormally high volatility in low-debt the first 2 years of the data. While we are hard pressed to explain this phenomenon, we can say this differential consistently narrowed and disappeared in April 2009 where low-debt micro remained the less volatile index for 60 consecutive months. This wide gap has not been observed since. Furthermore, low-debt micro was less volatile 41% of the entire 148-month period and 60% of the time since April 2009.

Over the entire 17-year timeframe, the standard deviation of monthly returns are 5.5, 5.8 and 6.2 for the Russell 2000, the Russell Micro Indexes and the Low-Debt Micro Index respectively.

Given the similar pattern and the proximity of the monthly standard deviations over the entire timeframe, we believe it is difficult to definitively conclude that low-debt micro is a substantially more volatile asset class compared to small caps. Certainly, these stocks can exhibit more volatility during any given period, but as shown in the next section, on a risk-reward basis, investors are better compensated for incurring risk in low-debt microcaps than small caps.

Rolling 5-yr Volatility (Standard Deviation)



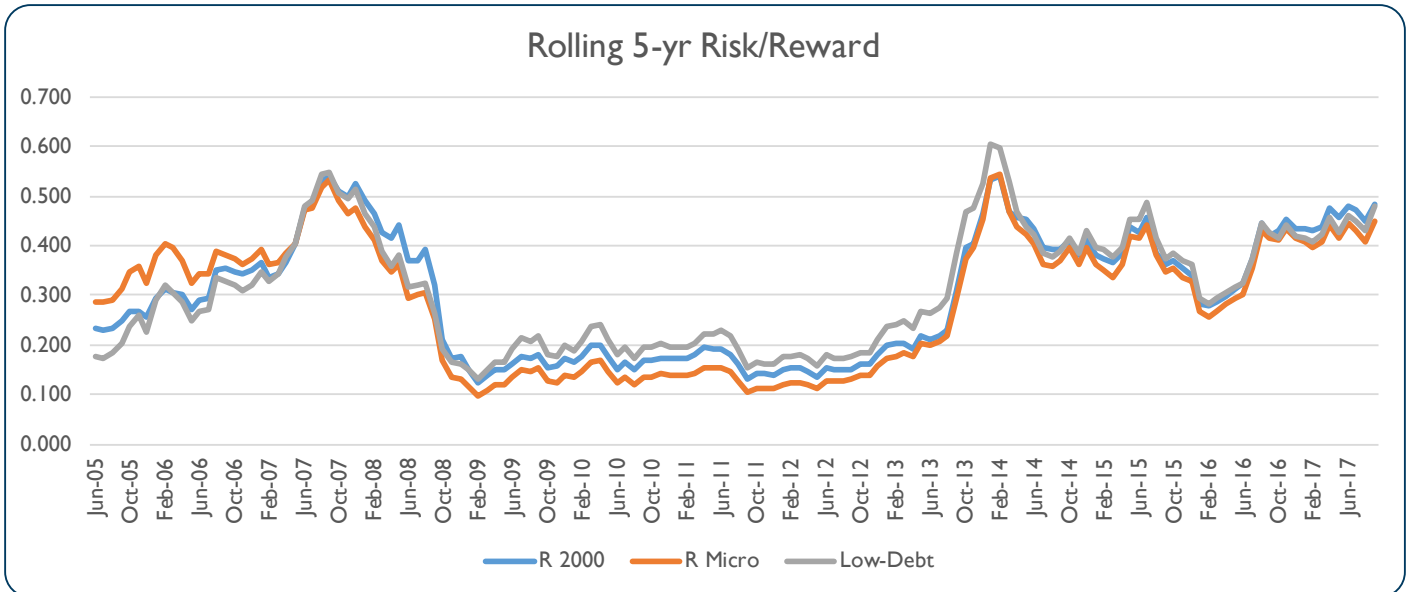
## Rolling Risk/Reward Ratio

The most essential function for an evaluation of asset classes is the determination of risk and reward. Because investing involves risk, we examined the return of each asset class divided by risk thereby demonstrating the more efficient asset class. Each point on the graph represents the five-year cumulative return divided by its risk (the standard deviation of monthly returns during the time period).

Again, viewing the risk/reward over a five-year rolling period is appropriate as it reflects a long-term investor’s time horizon. The rolling risk/reward ratio of the three indexes follow a similar pattern; however the low-debt microcaps risk/reward ratio beat the Russell Micro Index by 8% (.154 vs .143) – a compelling result.

Moreover, we observed a similar improvement compared to the Russell 2000; low-debt micro caps risk/reward ratio demonstrated a 2.6% improvement. Finally, over the entire 17-year period, the risk/reward ratio for low-debt microcaps (average monthly return divided by standard deviation of monthly return) beat the Russell Microcap Index by 7.9% and the Russell 2000 by 8.5%.

Higher returns and superior risk reward ratios suggest investors should not avoid but embrace low-debt microcaps as a legitimate allocation within the traditional small cap space for institutional portfolios.



### Risk/Reward Further Examined

We decided to explore this risk-reward phenomena further to determine if the positive result in low-debt microcaps was driven by a specific time period or a small number of outliers. In fact, low-debt microcap’s risk reward surpassed that of the Russell 2000 in 96 of 148 months or 65% of the time.

During months which low-debt micro was positive, the risk-reward ratio was 12.3% better than the Russell 2000 and only 7.7% worse during negative months. Investors can take comfort that the more favorable risk-reward ratio seen in low-debt microcaps was reasonably consistent over time and not determined by an outlier.

**Difference in Rolling 5-Yr Risk Reward  
(Low-Debt vs Russell 2000)**



Scrutinizing the low-debt microcap advantage from another perspective, we examined risk/reward at the sector level using annualized returns and standard deviation of monthly returns from June 2000 – September 2017. The breadth of the result is equally impressive; low-debt microcaps outperformed in all 11 sectors, risk was lower in 7 of 11 sectors creating a favorable risk-reward ratio in 9 of 11 sectors.

**Chart Summary (Above)**

# of 5 yr periods favorable	94
# of 5 yr periods	148
% of 5 yr periods	64%
avg difference when favorable	12.2%
avg difference when unfavorable	-7.2%
avg R/R difference (all periods)	5.1%

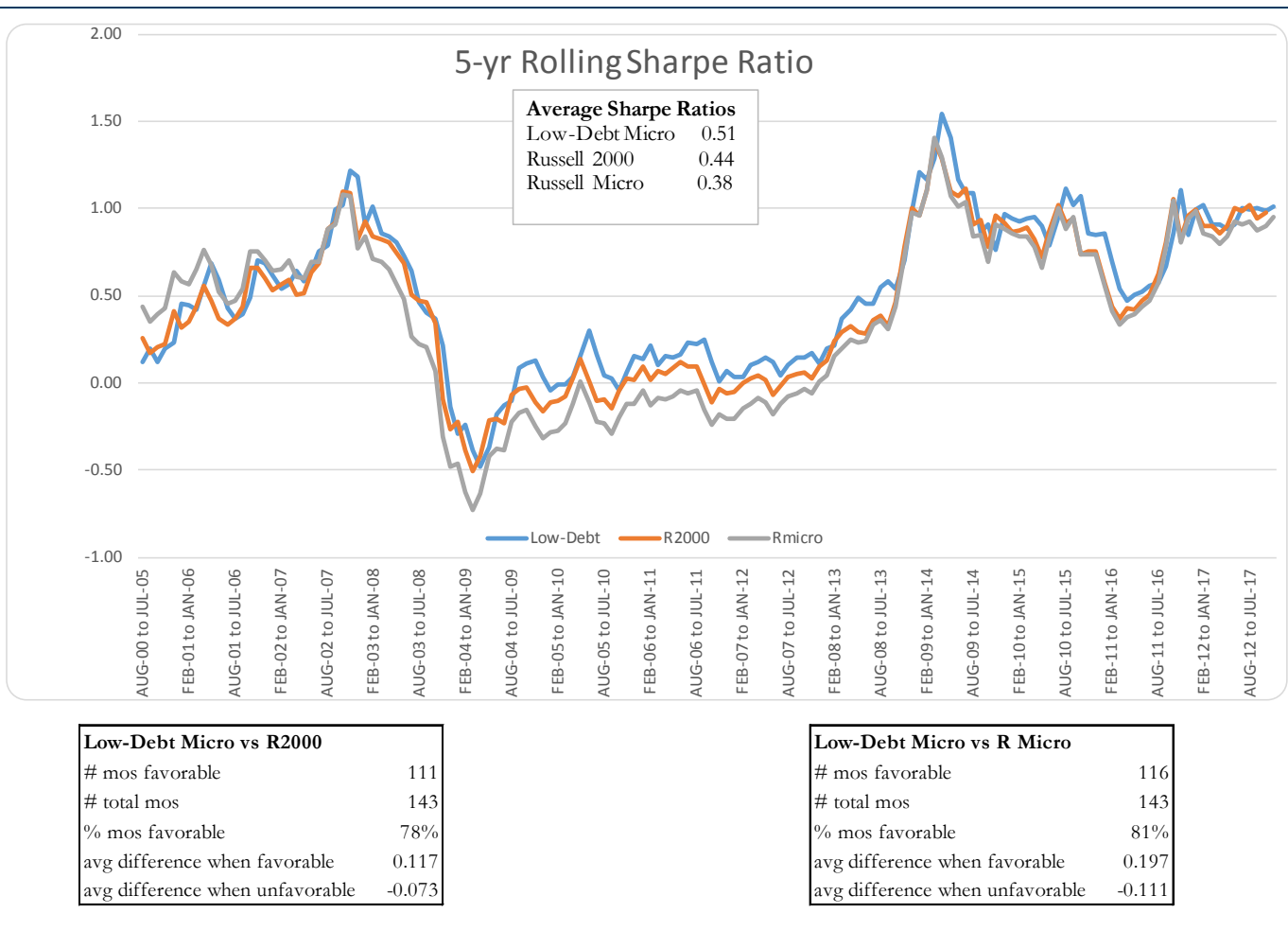
	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Information Technology	Materials	Real Estate	Telecom Services	Utilities	Total	# sectors improved
<b>Returns</b>													
Low-Debt	10.78%	16.32%	6.50%	15.02%	8.68%	13.38%	4.98%	13.09%	14.27%	0.56%	12.10%	9.53%	
R 2000	7.80%	11.50%	3.15%	9.09%	8.46%	9.18%	1.83%	12.85%	13.36%	-7.14%	10.63%	7.75%	
Diff	2.98%	4.82%	3.35%	5.93%	0.23%	4.19%	3.16%	0.24%	0.91%	7.69%	1.47%	1.77%	11.0
<b>StDev</b>													
Low-Debt	6.43	5.26	8.82	4.59	7.54	5.89	8.27	7.48	5.15	8.71	3.61	6.23	
R 2000	6.58	4.05	9.58	5.06	6.20	6.07	8.36	7.03	5.58	8.66	3.90	5.55	
Diff	(0.15)	1.21	(0.76)	(0.47)	1.34	(0.18)	(0.09)	0.44	(0.44)	0.05	(0.29)	0.68	7.0
<b>Risk Reward by Sector</b>													
Low-Debt	1.68	3.10	0.74	3.27	1.15	2.27	0.60	1.75	2.77	0.06	3.35	1.53	
R 2000	1.19	2.84	0.33	1.80	1.36	1.51	0.22	1.83	2.39	-0.82	2.73	1.40	
Diff	0.490	0.262	0.408	1.477	(0.213)	0.758	0.384	(0.077)	0.379	0.888	0.624	0.131	9.0

Results were similar compared to the Russell Microcap Index (not shown): low-debt microcaps outperformed in 9 of 11 sectors and risk was lower in 7 of 11 sectors for a combined improvement in 9 of 11 sectors. All said, the more favorable risk/reward ratio in low-debt microcaps was not driven by a single or small group of sectors.\*

\* Note, we defined low-debt as 30% for all companies except Utilities and REITs because these industries utilize higher debt loads due to their consistent cash flows. The 30% debt to cap threshold is too low to distinguish lower risk companies in these industries. Additionally, biotech was excluded from this analysis because we believed the inclusion would skew results. To our surprise, the exclusion did not make a meaningful difference in risk/return in the benchmark or for healthcare.

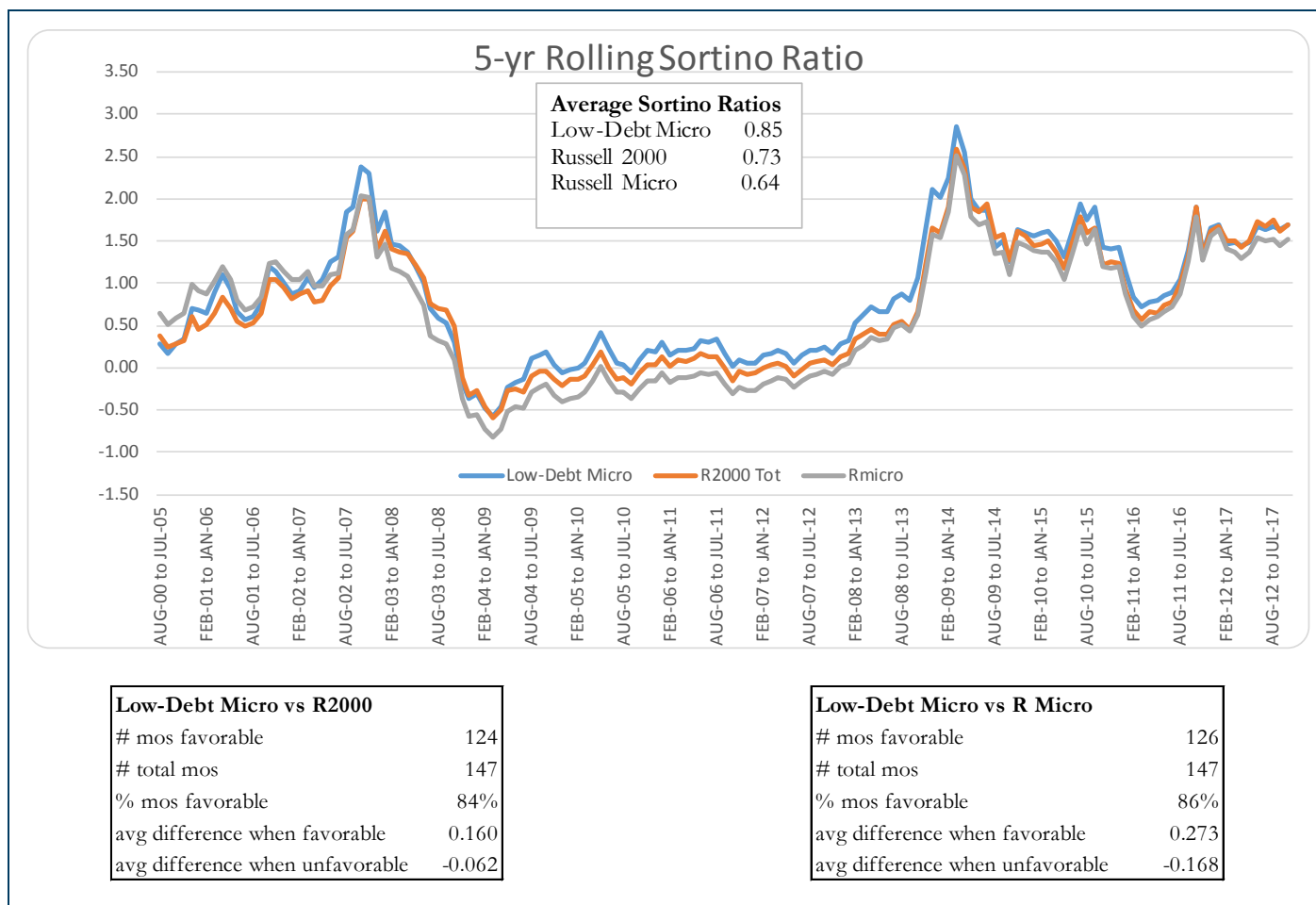
## 5-year Rolling Sharpe and Sortino Ratios

The evidence of favorable risk/reward in low-debt microcaps is also borne out using Sharpe and Sortino ratios. Again, we used a five-year rolling timeframe to account for relevant investor time horizons. As shown in the chart below and on the following page, the three indexes move together but across the entire timeframe, low-debt microcaps provided a noteworthy 16% (0.51 v 0.41) higher Sharpe ratio versus the Russell 2000. Similarly, a 33% (0.51 vs 0.38) benefit was generated by owning low-debt microcaps compared to the entire Russell Microcap Index.



Low-debt microcaps also produced a 17% and 33% better Sortino ratio compared to the Russell 2000 and Russell Microcap Indexes, respectively.

The benefits in both ratios were consistently evident; low-debt microcaps exceeded the Russell 2000 78% of the time. Finally, the benefit of owning low-debt microcaps becomes apparent as the Russell Micro Index underperformed the Russell 2000 by 13% and 8% using Sharpe and Sortino ratios, respectively.



### Concluding comment on Risk/Reward

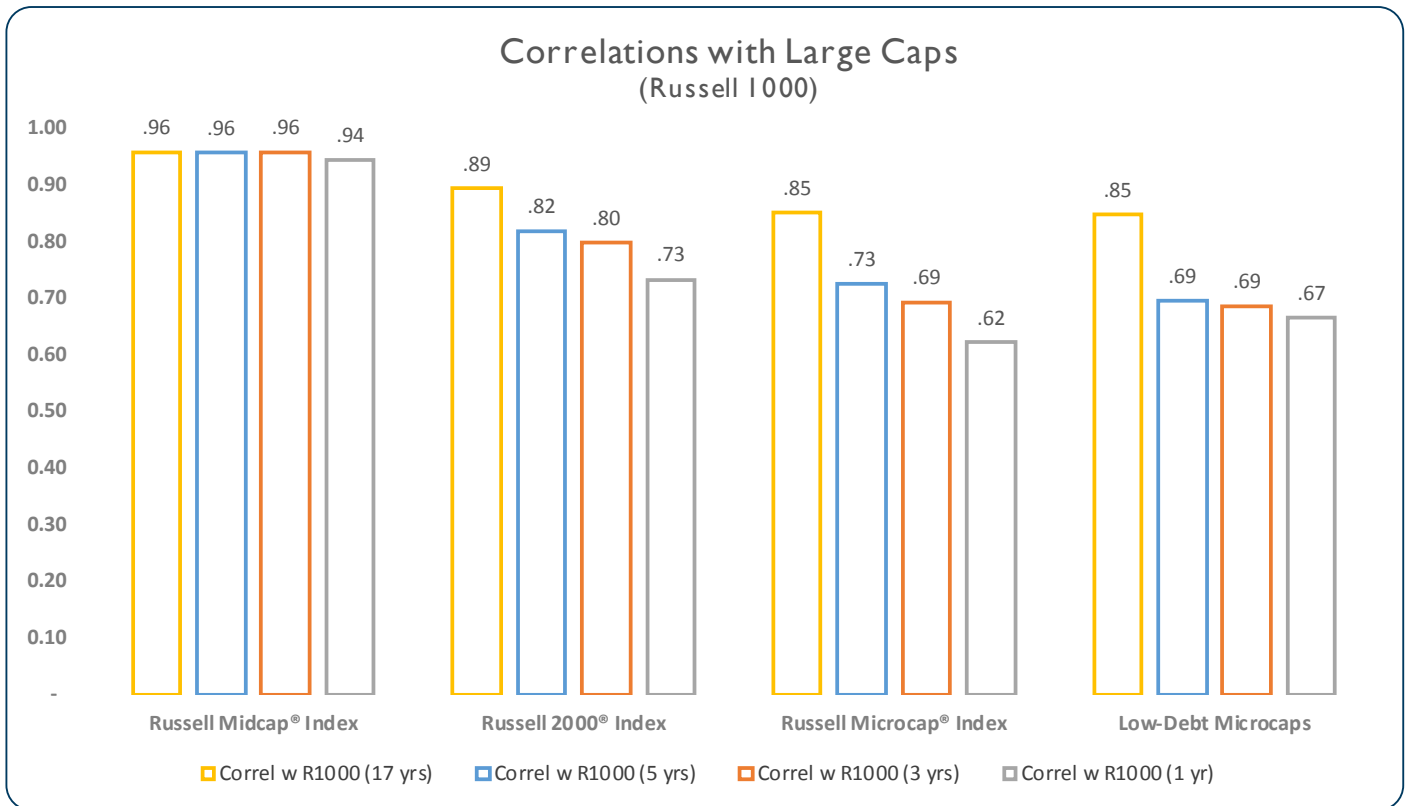
Based on this analysis, when the microcap universe is limited to companies bearing low debt-to-capital ratios, they are more efficient on a risk/reward basis. The fact that we use 148 periods demonstrates low-debt microcap’s results are consistent and not a result of any specific time period used. The benefit was seen not only in our definition of risk/reward where it was broadly apparent across sectors but also corroborated using widely adopted Sharpe and Sortino measures. Our work also showed that risk in low-debt microcaps, as measured by standard deviation, is not dissimilar than the Russell 2000. We believe this is a strong case that low-debt microcaps can both hold their own in comparison to small caps and supplement a small cap allocation to improve a portfolio’s risk/reward profile.



## Correlations

It is well understood that small and microcaps offer an institutional portfolio diversification relative to large caps. Active managers will painfully acknowledge equity correlations reached and maintained historic highs during the US Federal Reserve’s QE period beginning late 2008. It is not surprising to see that small and microcaps were highly correlated with large caps from July 2000 –

Sept 2017 at .89 and .85, respectively. As the Fed began to wind down QE in January 2014, market correlations declined and microcaps and low-debt microcaps provided lower correlations to large caps compared to small caps as depicted in the 1, 3 and 5 year bars on the following page.



## Private Equity

It is no secret that private equity advisor assets have exploded over the past 2 decades. The SEC quoted in June 2015 that private equity advisors managed \$5.0 trillion compared to just over \$700 billion in 2000. Microcaps may be a link between small cap and private equity from more than one vantage point. Many microcaps are similar to the companies that most Private Equity managers target: small capitalization (\$50 mil - \$1B), little street research and public information, high/stable cash flows, low leverage and attractive valuations. In addition, there is a natural progression that owners consider when deciding to finance an expansion. Sourcing capital in the form of private equity is often considered side by side with going public as a small/microcap company. In this sense, private equity is akin to investing in microcaps as both involve owning similar portions of the capitalization spectrum.

From another vantage point, investing in private equity is an attempt to capture an illiquidity premium, an excess return to compensate investors for the inability to quickly sell an asset without offering a substantial discount to fair value. However, private equity is not without its disadvantages highlighted by problematic conduct on the part of private equity managers resulting in an increased focus by the SEC imposing enforcement actions to protect investors. In the following section, we demonstrate why we believe illiquidity in the equity markets is preferable to that of private equity. The disadvantages of the private equity asset class, many of which are structural, are listed below.

### Disadvantages:

1. **Conflicts of interest between private equity advisors and investors** – Potential conflicts include providing preferential access given to certain investors for co-investment, increasing management fees by extending the life of the fund, charging high consulting fees to private equity portfolio companies for advice on M&A and restructuring and failing to disclose conflicts of interest.
2. **Liquidity** – Clients can usually redeem their microcap assets at any time with only a few days needed for full liquidation. Some private equity assets may be redeemed only quarterly or annually after initial lock-up periods which can last up to several years.
3. **Uncalled cash** – Private equity may keep large portions of the investment portfolio in unproductive cash for long periods while searching for investment ideas. Investment managers of publicly traded stocks tend to use a cash guideline.
4. **Transparency** – Private equity funds may choose not to disclose holdings leaving investors in the dark regarding risk and diversification. Investment managers of publicly traded stocks usually reports assets (and returns) quarterly. (Source\*\*: see Disclosures)
5. **Use of leverage** – Private equity can be financed with high levels of debt which may increase risk.
6. **Valuation** – Private equity assets are often valued based on appraisal which may be considered subjective and lacking impartiality. Microcap stocks are traded on public stock exchanges providing clients an observable portfolio market value on a daily basis.
7. **Fees** – Private equity typically charge higher base fees but may charge additional performance-based fees or restructuring/advisory fees to portfolio companies. The standard investment management fee for microcap strategies tends to run a flat rate based only on AUM.

## Private Equity Conclusion

In addition to being a legitimate stand-alone asset class, low-debt microcaps are a sensible choice to complement or replace a private equity allocation in institutional portfolios. Both private equity managers and microcap investors seek similar characteristics in prospective companies for holdings, but the numerous disadvantages of private equity listed above are structural and need to be offset by manager skill which is not easily overcome.

## Liquidity

It is well understood that investors seek liquidity to maintain low portfolio transaction costs and many investors avoid microcaps outright for this reason. “Liquidity as an Investment Style” by Ibbotson, Chen, Kim and Hu (2013), *Financial Analysts Journal*, May/June 2013, in our opinion, receives far too little discussion and we believe an indirect case for microcap stocks can be inferred. The authors found returns attributed to liquidity shows a consistent and robust outcome – the least liquid stocks outperformed an equally weighted market portfolio 2.35% per year measured over 1972 - 2011. Not only did the authors identify a strong excess return for illiquid stocks, they also found return premiums in illiquid stocks exist across capitalization and style and the results are consistent and stable over time. Finally, the liquidity effect is strongest in the microcap stocks.

Interestingly, when the CFA Institute selected “Liquidity as an Investment Style” as best article for the prestigious Graham and Dodd Award in 2013, the Institute’s editor surprisingly noted ‘liquidity has rarely been treated as a control in cross-sectional studies of stock returns’.

While the authors demonstrate that the liquidity effect is not the same as the size effect, across the microcap spectrum. The least liquid and mid-low liquid microcaps handsomely outperformed - the liquidity effect seen in the study was quite strong in microcaps. Also, the 2 least liquid microcap quartiles beat small, mid and large.

## Why does the liquidity premium exist

The authors postulate “Liquidity has perhaps the most straightforward explanation as to why it deserves to be a style. Investors clearly want more liquidity and are willing to pay for it in all asset classes, including stocks. Less liquidity comes with costs: it takes longer to trade less liquid stocks, and the transaction costs tend to be higher. In equilibrium, these costs must be compensated by less liquid stocks earning higher gross returns. The liquidity style rewards the investor who has longer horizons and is willing to trade less frequently.”

Importantly, liquidity is a factor with several other critical features: it is easily identified beforehand, easily measured, and when combined with other styles, low liquidity added to returns in each style.

We also concur with the authors that this style is low-cost to implement. It is our belief that the mainstream view on liquidity is, in fact, all wrong; investors should be seeking rather than avoiding investment managers of less liquid stocks who are skilled in the art of managing them.

We do not believe the low-debt microcap advantage gets arbitrated away by fast acting hedge funds. It’s hard to cite a fundamental reason why it wouldn’t have happened by now. We believe this phenomenon is structural and lasting given the dearth of information on microcaps compared to large or even midcaps. The average number of analysts covering micro is shown below:

	R 1000	R Midcap	R 2000	R Micro	RMV
<b>Total Co's</b>	978	780	1,976	1,495	1,068
<b>Avg # analysts</b>	15.9	13.9	5.5	2.8	2.7
<b># uncovered</b>	10	10	159	351	266
<b>% uncovered</b>	1.0%	1.3%	8.0%	23.5%	24.9%
<i>As of 1/11/18</i>					

The lack of research will likely persist because lower trading volumes on microcaps generate fewer commission dollars for brokerage firms which severely limits the economic incentive for brokerage firms to provide research coverage. Compounding this disincentive is the sharp deterioration in the economics of sell-side research owing to plunging commission rates over the past decade which are unlikely to rebound.

Another significant factor contributing to microcaps' information gap is the fact that management teams attend fewer investor conferences limiting investors' opportunity gain insight from private, one-on-one interviews. As a result of this structural information gap, microcaps should remain an enduring and exploitable opportunity.

## Final Conclusion

In this paper, we've provided rationale for low-debt microcaps to receive consideration as a stand-alone asset class or as a portion of a small cap allocation. We have also shown that compared to small caps, microcap stocks that carry a low-debt load are:

- no different on a risk basis,
- may perform favorably on a risk/reward basis broadly observed across time, sectors and free of outliers,
- are less correlated to large caps,

We've also pointed to research that argues the existence of a liquidity premium and it is widely understood that microcaps trade less than other asset classes.

Importantly, many of these positive attributes were not seen in the Russell Micro Index, they were observed in our custom Low-Debt Microcap Index. It is our belief that microcaps with high debt loads carry extra fundamental risk weighing down the risk/reward of the overall index. Excluding higher debt companies allows investors to realize the small cap anomaly in this asset class.

## About The Author:

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Michael Barr is a Portfolio Manager on the Small and Micro Cap Value Strategies team for Foundry Partners. Michael started in the industry in 1987 and has been with Foundry Partners since the company's transition from ClearArc Capital, formerly Fifth Third Asset Management (FTAM). He was with FTAM from 2011-Jan 31, 2013 in a similar capacity. Prior to his time at FTAM, he was with Victory Capital Management since 1998, where he was a Managing Director - Equity Analyst, providing stock research and analysis with a focus on Healthcare, Consumer Staples, Cyclical, and Basic Industries throughout his tenure.

Mr. Barr graduated from the University of Missouri with a B.S.B.A. in Finance. He is a CFA charterholder.

## About Foundry Partners:

Foundry Partners, LLC, is a boutique asset management company that specializes in active management. Established in September of 2012, the company officially began managing assets in February 2013. The firm originated after its founders, former Fifth Third Asset Management Employees, acquired the growth and value products/assets from Fifth Third Asset Management, Inc. (FTAM), now known as ClearArc Capital. As part of Foundry's long term plan to grow both organically and strategic acquisition, Foundry Partners added to its Cleveland office with the acquisition of the Small and Mid-Cap Value team (and assets) from Dreman Value Management. This was followed by acquiring growth manager, Arbor Capital Management in Minneapolis. As part of each transaction, the accompanying portfolio management teams transitioned over to Foundry Partners.

The firm was formed out of a desire to create a unique and independent atmosphere. With an average of over 20 years of investment experience our autonomous investment teams are able to offer a diverse product set while bringing the stability and confidence needed to navigate a variety of market environments.

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The Low-Debt Microcap model performance results are subject to a number of limitations, and do not reflect the results of any actual Foundry Partners client accounts, which are materially different to those of the model. The performance of an actual client account will likely vary from the Low-Debt Microcap model, including custodial costs and other fees, actual transaction costs in a client account being higher or lower than the model transaction costs, market conditions during trading, investment selection availability, and/or other factors.

The performance shown is back-tested (“pro-forma”) performance, derived from the retroactive application of a model developed with the benefit of hindsight. There are inherent limitations of showing portfolio performance based on hypothetical results. Unlike actual performance records, hypothetical results cannot accurately reflect the effect of material economic or market factors on the price of the securities, and therefore, results may be over or under-stated due to the impact of these factors. Since hypothetical results do not represent actual trading and may not accurately reflect the impact of material economic and market factors, it is unknown what effect these factors might have had on Foundry Partners decision-making if we were actually managing clients’ money. The Low-Debt Microcap model was created by excluding companies from the Russell Microcap Index with debt to capital ratio of 30% or more, other than REIT’s and Utilities. Those sectors, we raised the debt-to-capital threshold to the sector average. The Low-Debt Microcap model did not exist during the periods shown.

Investment advisory fees are described in Foundry Partner’s Form ADV Part2A. To illustrate the possible effect of management fees on total return of an account, what follows is an illustration: an account that earned 5.00% “gross” each calendar year for ten years would have earned an annualized “gross” return of 5.00%, with a ten-year cumulative return of 62.89%, assuming no contributions or withdrawals. Assuming a 1.00% management fee assessed at year-end, that same account would have earned 3.95% annualized “net” return, with a ten-year cumulative return of 47.31%. Actual investment advisory fees may vary.

\*\* <https://www.investor.gov/introduction-investing/basics/investment-products/private-equity-funds>

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