

# EXAMINING THE SMALL CAP UNIVERSE

Part Two:  
The Risky Small Cap Fallacy

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## Part Two: The Risky Small Cap Fallacy



*In our prior piece, “Planning for the Extended Maturity Cycle of Large Cap Equity”, we observed small cap stocks have outperformed large caps over long periods of time until recently, with US large cap market stocks outperforming in the past cycle. We see this as a combination of a unique period in industry history combined with the nature of market cap weight passive index construction. In this paper, we explore the small cap risk and return and outline the beneficial contributions that small caps make to an equity allocation, regardless of the expectation of “higher risk”.*

Asset allocators use mean-variance models to optimize their portfolios and, in the case of public markets, use asset class proxies as a starting point. For small cap equities these proxies are well-known indices such as the Russell 2000 or the MSCI EAFE or Global Small Cap indices. What we will show in this installment is that, unlike large cap indices, median small cap active managers systematically outperform their relevant indices across regions and timeframes. We question whether a good proxy for an asset class supports median manager outperformance on such a consistent basis and see this dynamic as an unavoidable shortcoming of index construction.

This bias has several implications for asset allocation, the most important of which is a sub-optimal allocation for practitioners using these indices. We believe small cap allocations are too low based on sharpe ratios being at peak levels in large cap indices and being structurally underestimated in the small cap asset class when indices are used as a proxy. As well, as we will show, the benefits of diversification for small cap returns in standard models is being overwhelmed by US large cap sharpe ratios.

- 1) The maturing of the great cash flow migration leading to risk return patterns across equity asset classes reverting to historical norms, and,

- 2) Small cap indices being poor small cap asset class proxies.

We see an opportunity for allocators to improve portfolio quality by rebalancing equity allocations towards a greater geographic and cap size diversity through global small cap, international small cap, US small cap, and Canadian small cap strategies.

The mean-variance optimization (MVO) approach is a popular method to determine the optimal asset allocation mix, one that represents the most favourable balance between risk and return. The primary inputs to the model are asset class returns and volatility assumptions. Typically, the practitioner uses passive index historical returns series as the proxy for expected asset class returns and covariance inputs. Those passive index asset class returns are readily available, have historical integrity and are globally recognized...but are they most suitable? We believe there are several shortfalls to this approach to employing passive index returns in MVO models, particularly when it comes to small cap equities:

- a) Small cap active managers have consistently outperformed their respective benchmarks over long periods of time. We have described this dynamic in



our prior communications and provide additional support herein.

- b) Small cap active management returns do not perfectly correlate with passive indices, both small and large, and therefore a source of improved portfolio risk-return efficiency.

To demonstrate these points, we provide two supporting data examples.

### 1. Active Small Cap Alpha

We analyzed active small cap equities against major small cap benchmarks and concluded on a consistent pattern. In Chart 1 on the right, the Russell 2000 has consistently ranked below median against active US small cap managers over rolling 5-year periods going back to December 2008. In more recent years, more than 80% of active managers have delivered alpha against the benchmark. The average outperformance of the rolling-5-year results is 118 bps of alpha.

A corresponding argument can be made for international small cap stocks. As shown in Chart 2 at right, the MSCI EAFE Small Cap Index has consistently ranked below median against active International small cap managers over rolling 5-year periods.

Last, Chart 3 illustrates Canadian small cap active manager outperformance against the passive index has been the most pronounced out of the three geographic regions.

The S&P/TSX Small Cap index underperformed all active managers over rolling 5-years periods going back to 2008, and only reached third decile in only two of 60 periods analyzed. The average outperformance of the rolling-5-year results is 546 bps of alpha. We believe this is result of the Canadian equity market being an extremely narrow market with heavy

concentration in energy and materials sectors, and the Index’s exposure to micro capitalization companies. These structural issues have also resulted in higher volatility in passive than the median active manager.

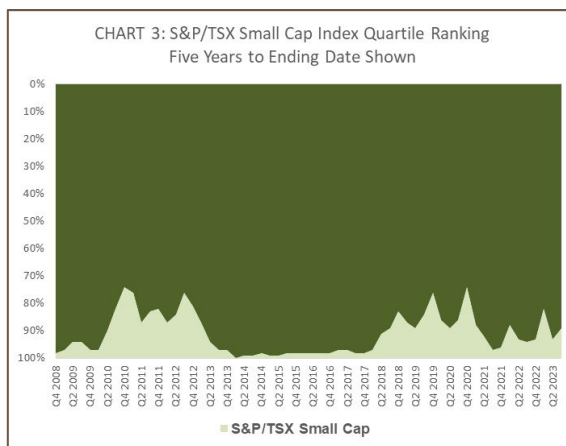
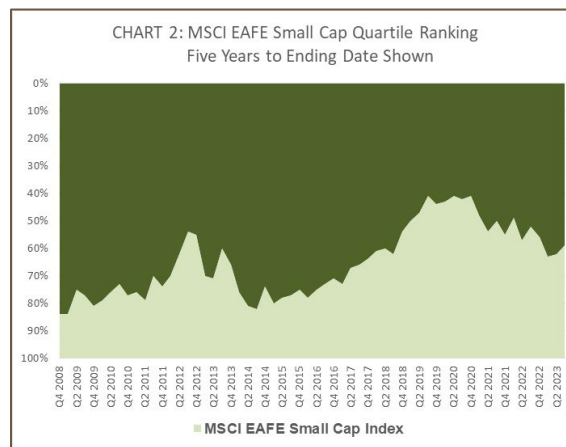
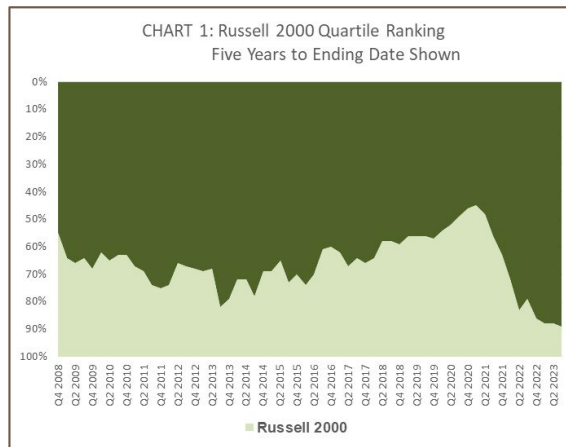
### 2. Active Small Cap Contribution to Portfolio Risk

Instinctively, one would assume active managers take on a disproportionate amount of risk to achieve the alpha results. We analyze the widely accepted Sharpe ratio to question this thought.

As we are building multi-asset portfolios, we must focus on the contribution of small cap equities to a broader portfolio and not focus on the Sharpe ratio of each asset class in isolation. Academia provides us a simple construct to determine whether adding small cap equities will improve the mean-variance efficiency of a large-cap portfolio: if the Sharpe ratio of a small-cap portfolio is greater than the Sharpe ratio of a large-cap portfolio multiplied by the correlation of the two, then adding a small cap allocation will increase the efficiency of the portfolio.

We calculated this statistic for all active managers and found that active small cap managers have historically increased the efficiency of a portfolio when combined with its large cap counterpart. This is largely due to the higher Sharpe ratios active management has been able to deliver. Even in some cases where the average active small cap Sharpe ratio was below that of the comparable large cap index, most active managers would have still contributed to improved portfolio

efficiency. However, as shown in the tables below, this relationship has broken down for US large and small caps in recent years. The S&P 500 US large cap index has held on to its best performers and let their winners run. The biggest winners of the decade, such as Apple, Microsoft, Amazon,



Nvidia and Google, now make up greater than 20% of the S&P index and drive a material amount of the index performance.

We've spoken about the structural failing of all small cap indices is the "sell your winners" phenomenon. Another benefit that large cap indices have is selling losers. Very few

companies enter terminal decline and stay in the Russell 1000. A company will exit the Russell 1000 and enter the Russell 2000 through its decline in weight and may pass right down to the bottom, while driving negative returns the entire way.

#### US SMALL CAP MANAGER CONTRIBUTION TO EFFICIENCY – 10 YEARS ENDING

	<u>12/31/2007</u>	<u>12/31/2012</u>	<u>12/31/2017</u>	<u>12/31/2022</u>
S&P 500 Index Sharpe Ratio	0.16	0.37	0.54	0.80
Avg. Active US Sm Cap Manager Sharpe Ratio	0.36	0.48	0.49	0.53
Avg Active US Sm Cap Manager Correlation	0.70	0.89	0.88	0.85
<b>Pct. Of US Sm Cap Managers Improving Efficiency</b>	<b>92%</b>	<b>90%</b>	<b>51%</b>	<b>9%</b>

#### INTERNATIONAL SMALL CAP MANAGER CONTRIBUTION TO EFFICIENCY – 10 YEARS ENDING

	<u>12/31/2012</u>	<u>12/31/2017</u>	<u>12/31/2022</u>
MSCI EAFE Index Sharpe Ratio	0.38	0.11	0.30
Avg. Active Intl. Sm Cap Manager Sharpe Ratio	0.57	0.33	0.39
Avg Active Intl. Sm Cap Manager Correlation	0.97	0.95	0.92
<b>Pct. Of Intl. Sm Cap Managers Improving Efficiency</b>	<b>97%</b>	<b>98%</b>	<b>89%</b>

#### CANADIAN SMALL CAP MANAGER CONTRIBUTION TO EFFICIENCY – 10 YEARS ENDING

	<u>12/31/2012</u>	<u>12/31/2017</u>	<u>12/31/2022</u>
S&P/TSX Composite Index Sharpe Ratio	0.51	0.29	0.56
Avg. Active Cdn. Sm Cap Manager Sharpe Ratio	0.60	0.47	0.53
Avg Active Cdn Sm Cap Manager Correlation	0.89	0.87	0.85
<b>Pct. Of Intl. Sm Cap Managers Improving Efficiency</b>	<b>82%</b>	<b>79%</b>	<b>59%</b>

Any investment is a contract simply based on the exchange of money now for money in the future. The nature of the contract defines - or at least parameterizes - the expectations around the timing, amount, and certainty of future cash flows. The greater the uncertainty on the timing and amount, the greater the volatility of the security and the greater the return potential. The type of contract is what delineates asset classes. The nature of the contract combined with the nature of the payor influences the riskiness of individual securities within those asset classes.

Common equity occupies the riskiest end of the risk return spectrum and small cap equities are the most volatile equities within the equity asset class. The nature of the return stream at security level and across asset classes themselves can be additive to the risk reward function through not only the level of returns and volatility but importantly, through how unrelated the movement in those variables is. Lower covariance creates improved risk reward

outcomes. This is the benefit of diversification. Asset allocators combine asset classes and securities of various risk return and covariance profiles in portfolios to optimize the overall portfolio Sharpe ratio for their clients based on an assessment of risk tolerances.

#### **Summary**

Asset allocation practitioners should consider increasing their small cap asset class returns assumptions in their modeling to reflect the performance benefit of active management. Active small cap managers have consistently added value against passive benchmarks, somewhere in the range of 100-500 basis points.

Further, within a multi-asset portfolio, dedicated allocations to active small cap equity portfolios can improve the risk-reward efficiency of the overall portfolio. This is a function of both outperformance and from a risk contribution perspective.

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