Redwood Investments, LLC

Market Inefficiency Analysis
Prepared by Mike Mufson, CFA, Ezra Samet, CFA
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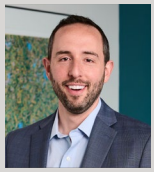


Introduction

The goal of most active managers is to outperform a specific targeted index or benchmark. For a US large cap active manager, the target might refer to after-fee returns that are in excess of the Russell 1000 or S&P 500 over a market cycle. Some investors have gravitated towards passive investing, where investors simply seek to own all the stocks in a specific market index and in the same proportion those securities are held in that index. Since passive managers historically charge lower fees than active managers and passive investing has, at times, outperformed active management, the popularity of passive investing has grown. At Redwood, ***we believe active management has the opportunity to add value in the less efficient and higher alpha equity universes***.

The Challenge

Market efficiency refers to the degree to which market prices reflect all available and relevant information. If markets are perfectly efficient, then all information is already incorporated into prices, and it is difficult to "beat" the market on a risk adjusted basis since there are no undervalued or overvalued securities available. The term "efficient market" was taken from a paper written in 1970 by economist Eugene Fama, however, he acknowledges that the term is a bit misleading because ***there was no clear definition to perfectly define or specifically measure "market efficiency"***. Some investors have suggested that higher alpha equals higher inefficiency, but also higher inefficiency leads to higher alpha. However, this circular reference fails to define the components of higher inefficiency that leads to higher alpha opportunities.

Defining Market Inefficiency

Through our own proprietary research, we strived to define the factors that we believe most contribute to market inefficiency to highlight those equity asset categories with the most alpha opportunity for investors. We evaluated 5 investment universes in 3 geographic areas encompassing more than 7,400 stocks globally, without double counting any overlapping securities.

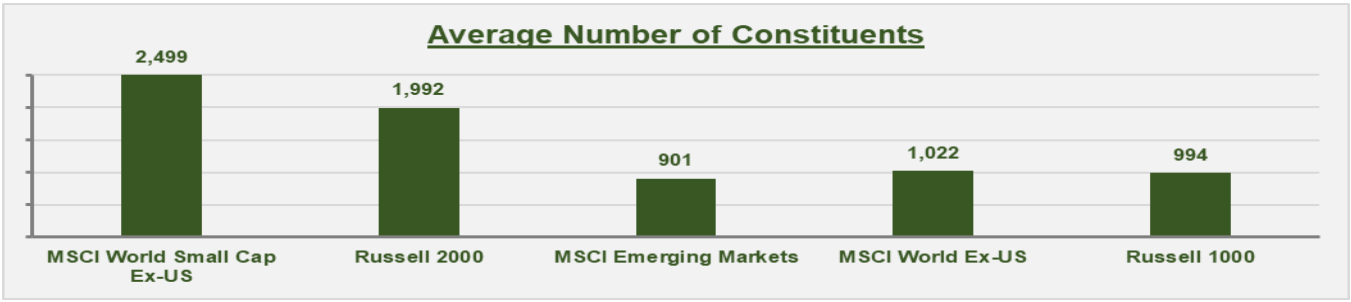
	Investment Universes Analyzed	
Geography	Mid-Large Cap Indexes	Small Cap Indexes
US	Russell 1000®	Russell 2000®
Developed Markets	MSCI World ex-USA	MSCI World ex-USA Small Cap
Emerging Markets	MSCI Emerging Markets	N/A

Our research identified four factor categories that we believe provided insights into defining market inefficiency for a respective index.

1. Number of Universe Constituents
2. Institutional Ownership
3. Sell Side Coverage
4. Consensus Forecast Error

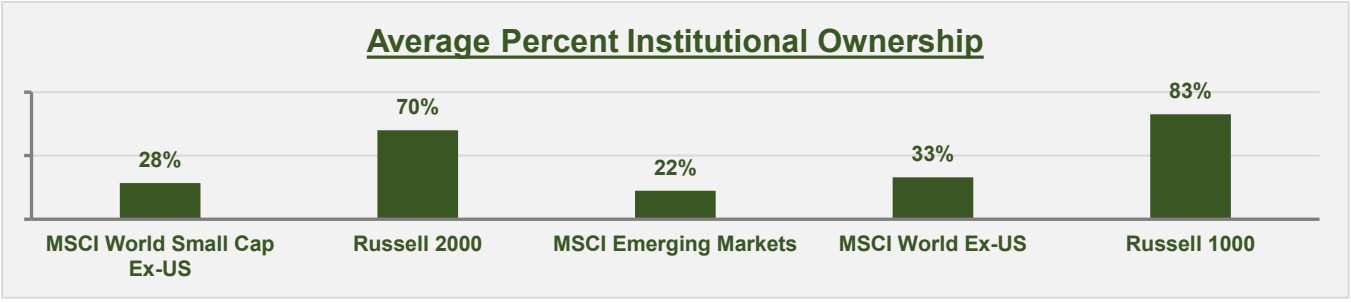
Number of Universe Constituents

A universe with more constituents poses a challenge for analysts and forecasters who need to dedicate time and attention to understand each one accurately. All else held equal, the stocks in these more numerous indices ought to be less well understood. To offset the larger number of constituents and maintain an equivalent efficiency, one would need to see more investors and analysts participating in the more numerous equity universes. In fact, it is the opposite as there are lower levels of institutional ownership and a smaller average number of sell side analysts covering the broader universes.



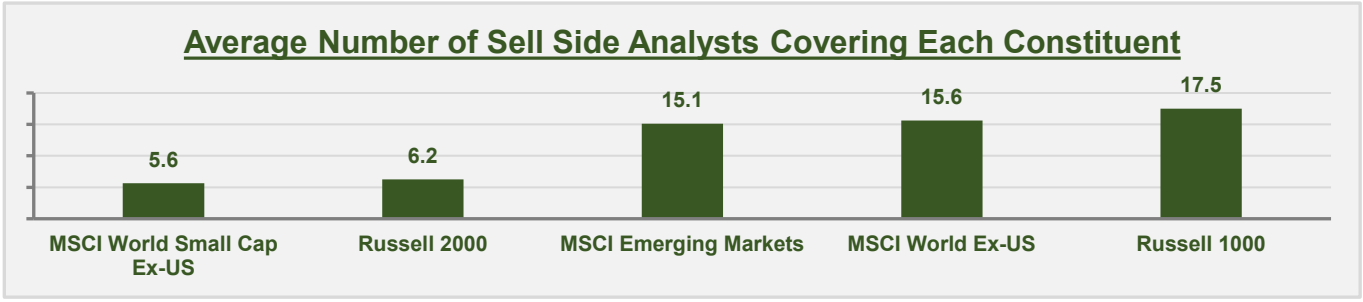
Institutional Ownership

We observed that lower institutional ownership seems to also contribute to market inefficiency. Our view is that institutional owners have a competitive advantage relative to individual investors given analysis sophistication, access to information, and time on task. The following graph highlights that the average percentage of institutional ownership for international universes is less than half of US universes.



Sell Side Coverage

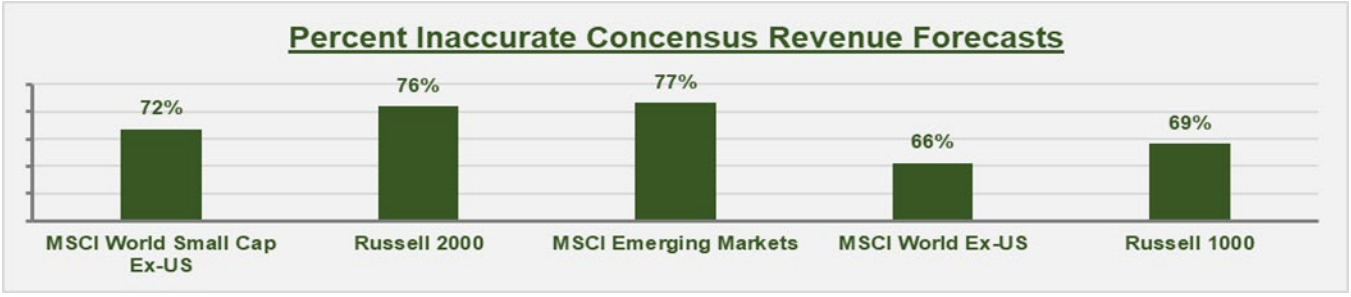
We view the quantity of sell side coverage as a proxy for the amount of information in the market. Less information creates more opportunity for diligent investors to uncover and assemble pieces of a mosaic that can provide a competitive advantage. The following graph highlights that there is approximately 2/3 less sell side research coverage on small cap stocks than on mid-large cap stocks. This is not surprising considering that the revenue generated from commissions and investment banking is significantly higher for mid-larger cap stocks than for small cap stocks.



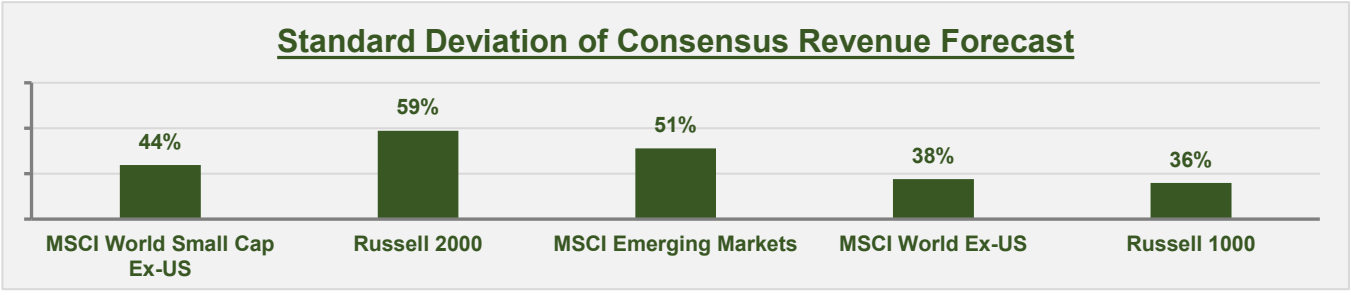
Each chart on this page contains data calculated on an average basis over the period from January 1, 2009 to December 31, 2021.

Consensus Revenue Forecast Error

We observed that the most differentiating and important factor in our market inefficiency analysis is the level of consensus revenue forecast error. Our analysis evaluated consensus revenue projections, which we believe should be easier to forecast than earnings per share since there are fewer variables (no expenses, interest, taxes, or share count). The following graph underscores that even ***consensus* revenue *forecasts are inaccurate more often than they are accurate*** regardless of the investment universe, and that the consensus inaccuracy rate is higher in smaller cap and emerging markets. We hypothesize that this occurs because consensus revenue forecasts are more heavily influenced by management guidance and the sell side business model.



In addition, to being less accurate, the magnitude of the consensus revenue forecast error as measured by standard deviation is also higher in the smaller cap and emerging market universes than in the mid-large cap US and developed markets universes. This is highlighted in the following graph and suggests there is a larger opportunity to find both "misforecasted" financial results and those with significantly inaccurate consensus revenue forecasts in the smaller cap and emerging markets universes.



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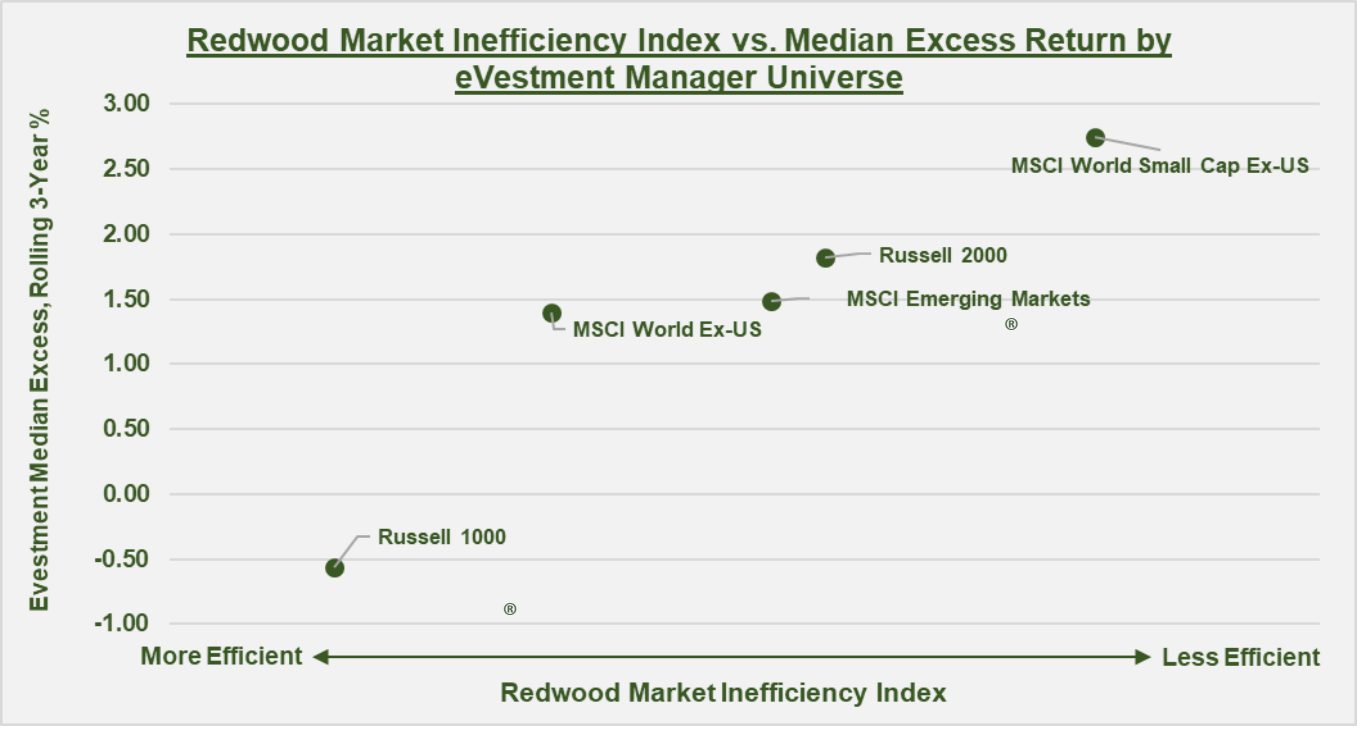
Redwood Market Inefficiency Index

We created a Redwood Market Inefficiency Index by utilizing the five specific factors previously highlighted. Each factor was equally weighed to create an index that we believe helps to highlight the relationship between market inefficiency and excess return. To test this hypothesis, we graphed each of the five universes using the Redwood Market Inefficiency Index on the X-Axis and the eVestment Rolling 3-Year Median Manager Excess Return relative to each index for the Y-Axis (see the following graph). We do not claim that we have perfectly defined "Market Inefficiency", however, we observed a 0.94 correlation between the Redwood Market Inefficiency Index and the eVestment return data over the past 12 years (2009-2021).



Data from January 1, 2009 to December 31, 2021

Summary

Redwood believes that active management should be more effective in less efficient equity universes. These universes are generally defined by more stocks, less coverage, fewer institutional investors, and greater variance and dispersion in consensus revenue forecasts. Overall, we observe that smaller cap and international equity universes readily demonstrate these characteristics, and we conclude they are the more structurally inefficient areas for investment opportunities.

Disclosures

"Redwood Market Inefficiency Index"

- Redwood Market Inefficiency Index was calculated using five factors:
  - Average Number of Companies in Each Index
  - Percent Institutional Ownership: Average percentage of shares owned by institutional investors
  - Average Number of Sell Side Analysts Covering Each Constituent
    - Average number of sell-side analysts covering each company included in the study: Percent of Inaccurate Consensus Revenue Forecasts
    - Inaccurate Forecast: absolute value of [actual revenue/initial revenue forecast – 1] greater than 5%
    - Initial Revenue Forecast = Consensus revenue forecast 2 years prior to actual FY report date
  - Standard Deviation of Consensus Revenue Forecast Error
    - Individual Company Forecast Error = actual revenue/initial revenue forecast – 1
    - Initial Revenue Forecast = Consensus revenue forecast 2 years prior to actual FY report date
- Each company used in the calculation had data at both the start and end of time periods. Companies without data for any factor in a given year were excluded from the calculation of the universe average for that year.
- Calculation Methodology
  - For each of the factors, we divide the index factor value by the average factor value of all measured indices.
  - This yields 5 factors for each index which express the percentage above or below the mean for the entire universe.
  - For each index, we calculate an equal-weighted average of the 5 factor values.
  - This yields a composite score which is Redwood's measure of market inefficiency.
  - We then calculate the correlation between the market inefficiency score from this analysis and the rolling three-year average excess return for each index from eVestment, described above.
- The calculations underlying this analysis are available upon request.
- "eVestment Median excess, Rolling 3-Year Return %" (Y-Axis). The rolling three-year excess return average for actively managed portfolios in the eVestment database from January 1, 2009 – December 31, 2021, benchmarked to one of the indexes used in the market inefficiency analysis (X-axis). Excess returns are the returns achieved above a designated benchmark.

"Investment Universes"

- The five indexes analyzed incorporate almost the entire investment public equity markets in developed and emerging markets. You cannot invest directly in an index. This is not a recommendation or an offer to buy or sell a particular security or class of securities, nor is it a guarantee that our analysis and/or opinions thesis will always be right.
- The analysis used all constituents in the respective indexes with consensus sell side revenue forecasts in FactSet over each two-year time period. Each constituent used in the calculation had data at both the start and end of time periods. As such, certain "Data Points" (i.e., companies) are not included here including, for example, companies that had data at the beginning of the time period and were later acquired and/or companies that completed IPOs and only had data at the end of the time period.

Indices	Data Points	eVestment Peer Universe Definition
Russell 1000®	**9,766**	**Long only, Active US Large Cap Equity**
Russell 2000®	**15,501**	**Long only, Active, US Small Cap Equity**
MSCI World ex-USA	**10,554**	**Long only, Active, EAFE Equity (Ex-Small Cap)**
MSCI Emerging Markets	**9,040**	**Long only, Active, Emerging Markets Equity**
MSCI World Small Cap ex-USA	**19,966**	**Long only, Active, EAFE Small Cap Equity**

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For more information, please contact: Mr. Scott Kearney, Head of Distribution, skearney@redwoodinv.com
Ms. Lidney Motch, Director of Marketing & Client Service, lmotch@redwoodinv.com