OSMOSIS INVESTMENT MANAGEMENT

Quantitative Outcomes of Resource Efficiency in Emerging and Developed Markets

December 2024

Quantitative Outcomes of Resource Efficiency in Emerging and Developed Markets

Key takeaways

- Strong similarities demonstrated between the Resource Efficiency Factor in Developed Markets, and Emerging Markets
- RE identifies a distinct and uncorrelated source of alpha, with Efficient companies outperforming Inefficient companies since 2019, when our Emerging Market dataset begins
- Traditional factor analysis continues to show EM RE are aligned with quality-type characteristics
- Low correlations are observed between the RE factor and standard ratings providers, as well as DM RE
- We see that Efficient companies tend to beat their analyst estimates, and Inefficient companies tend to miss them

Unless otherwise mentioned, throughout this piece EM refers to companies in the MSCI Emerging Markets Index. DM refers to companies in the MSCI World Index. Efficient refers to an equally weighted bucket of the top half most resource efficient companies. Inefficient refers to an equally weighted bucket of the top half most resource inefficient companies.

Our research has concluded that Resource Efficiency (RE) is a factor which identifies high quality companies with strong management teams generating a competitive advantage. We believe that RE captures the intangible value of environmental resilience and mitigates long-term climate change risks.

We first observed these characteristics in the DM, but they are also pervasive in the EM. This is important in two ways. Firstly, it allows us to directly port our DM expertise to the EM and to apply our research to this new market. Secondly, this positive out of sample test of our signal supports the efficacy of our work in the DM.

Resource Efficient companies tend to outperform Resource Inefficient

We have identified a consistent independent alpha signal in the Emerging Markets.

Figure 1 shows the performance of the top third most efficient companies in every sector in green, and the bottom third in purple. Not only do Resource Efficient companies consistently beat Resource Inefficient companies, but they also beat the MSCI Emerging Markets index, whereas the Inefficient companies perform less well financially than the wider index.

When we use the Barra Emerging Markets Equity (EMM1) risk model to attribute the performance difference between efficient and inefficient companies, we see that the 1.4% annualized positive total active return is predominantly driven by the specific component at 2.4%*. This indicates that, in our research environment (before adding risk controls), we are not simply capturing betas from country, industry, or factor exposures; rather, resource-efficient companies themselves are outperforming. In fact, over this period, common factors collectively detracted from total active return by -0.6%*.

Specific return is what we target, and the positive value evidences the RE factor being an independent source of alpha. When we construct portfolios in a risk-controlled fashion, we aim to reduce our exposure to common factors, and maximise our exposure to RE within risk bounds.

*data from 31 August 2019 – 31 December 2024

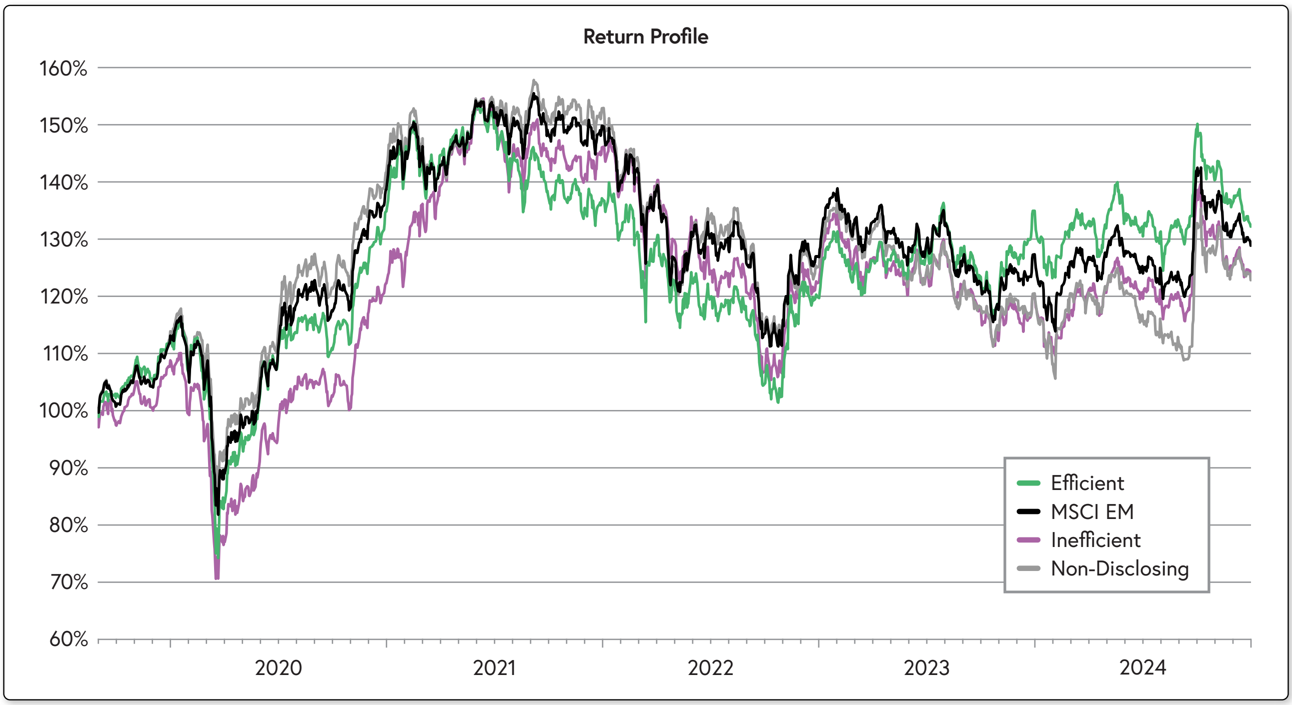

Figure 1 - We analyse gross compounded returns with dividends reinvested of companies in the MSCI Emerging Markets Index (excluding financials & tobacco) during the time period from 31 August 2019 to 31 December 2024. This graph shows the return profiles of companies that are split into three groups: the most Resource Efficient companies (top third in green), the least Resource Efficient companies (bottom third in purple), and the non-disclosing companies (grey) for which we have inadequate Resource Efficiency data. We also show the performance of the MSCI Emerging Markets Index (excluding financials & tobacco). All portfolios are equal-weighted with sector weights forced to be proportional to the benchmark. No representation is being made that an Osmosis strategy will achieve the Efficient performance shown. Source: Osmosis IM, MSCI, Bloomberg, S&P, FactSet. Past performance is not an indication of future performance.

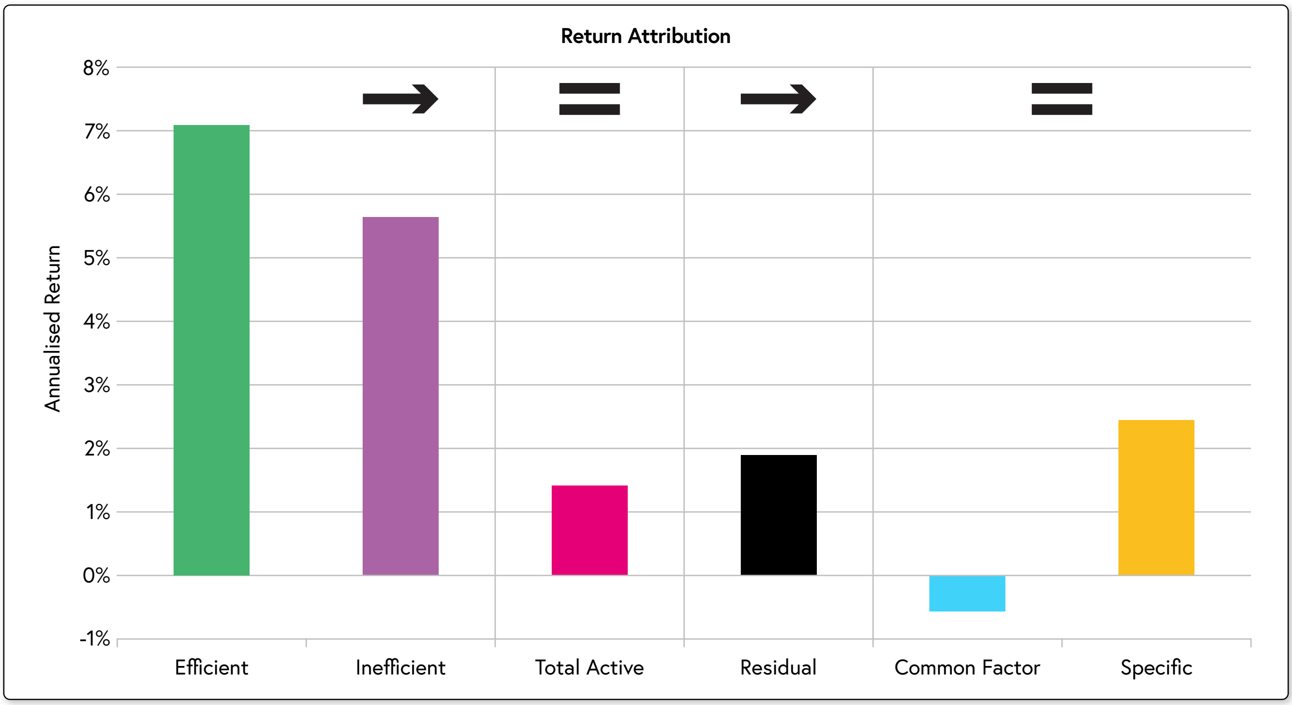

Figure 2 - Note: The analysis uses the MSCI Emerging Markets Index as the starting universe. All portfolios and the index are equal-weighted. Efficient, Inefficient, Total Active, Residual, Common Factor, and Specific returns are calculated using Barra's EMM1 risk model, where Active is the excess of the Efficient portfolio over the Inefficient portfolio, Residual excludes currency effects, and Residual is further split into explainable Common Factors (sector, country, style) and Specific (unexplained). . The Efficient and Inefficient portfolios used in the attribution were constructed based on the most Resource Efficient companies (top third in green) and the least Resource Efficient companies (bottom third in purple) in each Osmosis sector. All return numbers are annualised. Sample period: 31 August 2019 to 31 December 2024. The start date is exogenously determined by the environmental data availability for companies in the index. We analyze gross compounded returns with dividends reinvested. Source: FactSet, MSCI, Osmosis Investment Management.

Factor exposures are similar across both markets

Efficient companies in both DM and EM tend to be more profitable with higher asset turnover.

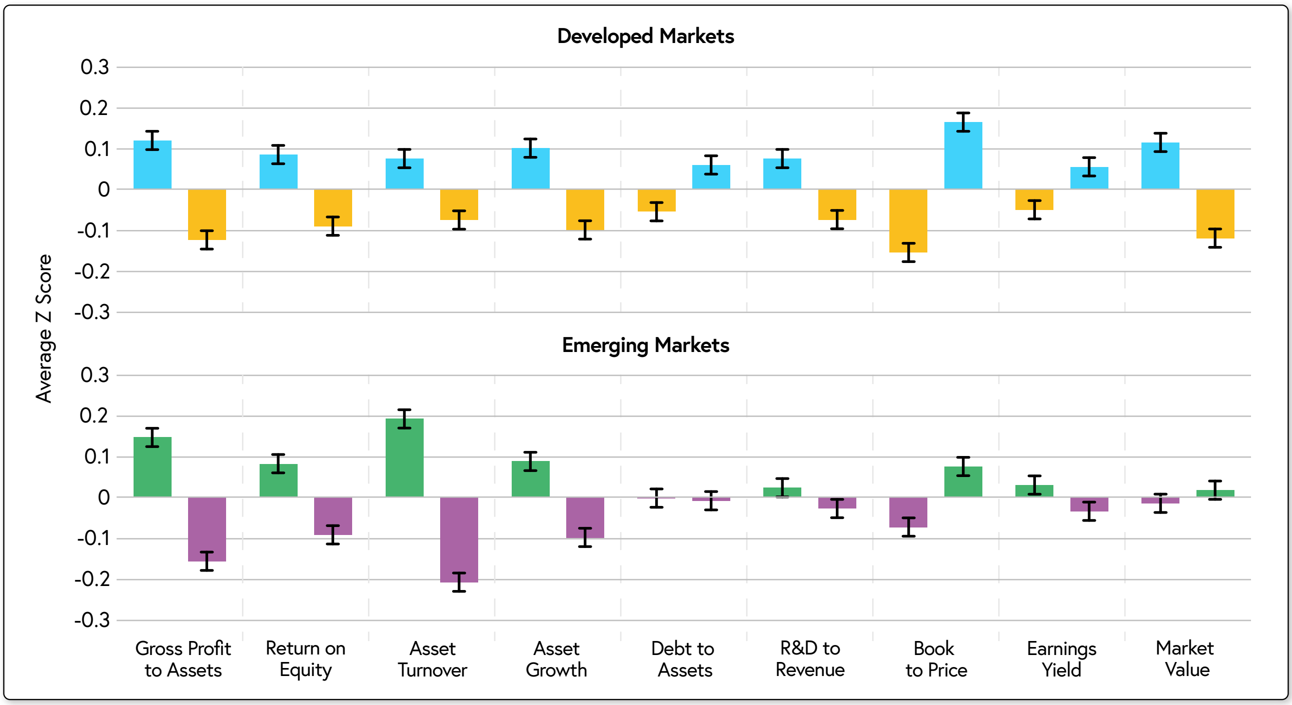

Figure 3-Note: The analysis for the top chart uses the MSCI Emerging Markets Index as the starting universe. The bottom chart uses the MSCI World Index for comparison. Companies in the index are split into two research portfolios using Osmosis' Resource Efficiency score as the sorting variable: the most Resource Efficient companies (top half in blue or green) and the least Resource Efficient companies (bottom half in yellow or purple). We show z-scores that are calculated to show the standard deviations that a company's financial metric is away from the yearly sector mean. The height of the bars shows the average z-score across all companies. The error bars at the top of the columns represent the 95% confidence interval of the mean. Sample period: 31 August 2019 to 31 December 2024. The start date is exogenously determined by the environmental data availability for companies in the index. Source: FactSet, OIM.

Resource Efficient companies tend to exhibit factors associated with quality. In the DM we see that they are typically more profitable, have higher return on equity (ROE) and higher asset turnover (how much they are using their assets to generate sales, or put another way how much they are 'sweating their assets'). We also see that they are underlevered, investing in R&D, and generally more expensive than their inefficient peers.

We see very similar factor exposures in the EM. Although EM RE companies do not currently show the same statistical significance in terms of the leverage, earnings yield or size, there is strong consistency across the other factors.

The pervasiveness of the factor exposures suggests that we are not looking at a separate EM RE factor and DM RE factor. Instead, the evidence suggests that we are identifying the same principles across both markets. RE is thus not an anomaly only observed in the DM, but a fundamental pattern, observable across the world. This allows us to hit the ground running in the EM as it enables us to utilise the research and expertise that we have developed in the DM and apply it here.

This research can also be viewed as an out of sample test for DM RE. We have taken the thesis that we have developed in the DM and directly applied it to the EM. The similarities in the EM reinforces the efficacy of the signal in the DM, where it was originally developed.

Uncorrelated to standard ratings providers

RE is picking up information that is not captured by traditional ratings providers.

RE is an independent and uncorrelated investment signal based on publicly reported, objective, and quantifiable indicators. Our research uniquely focuses on the economic realities of environmental sustainability through objective, reported data. We do not use estimations.

The RE Score and the underlying carbon, water, and waste scores show no correlation to ESG scores from third party data providers. Our belief is that vendors lack a consistent approach to defining, measuring, and weighting sustainability issues amongst each other, resulting in low correlations between their ESG scores, as well as with ours.

Not only do we see low correlations between the RE score and third-party data providers, but we also see low correlations between the active and specific returns from DM RE and EM RE, with correlations of 0.03 and 0.08, respectively. This demonstrates that despite the similarities between the DM RE and EM RE signals, there are still positive diversification benefits to investing in both markets. This is driven by distinct economic environments, regulations, and sector-specific dynamics unfolding at different times.

RE is uncorrelated to ratings providers

	RE	Carbon	Water	Waste	Robeco ESG	MSCI ESG	Sustainalytics ESG	FTSE ESG	Bloomberg ESG	Integrum ESG	Robeco Env	Bloomberg Env
RE												
Carbon	77%											
Water	81%	52%										
Waste	75%	39%	44%									
Robeco ESG	13%	7%	14%	8%								
MSCI ESG	14%	16%	9%	9%	46%							
Sustainalytics ESG	26%	21%	22%	19%	57%	36%						
FTSE ESG	6%	1%	7%	2%	78%	45%	56%					
Bloomberg ESG	16%	14%	16%	7%	59%	35%	41%	57%				
Integrum ESG	18%	10%	20%	6%	30%	20%	25%	34%	25%			
Robeco Env	11%	5%	12%	7%	92%	43%	56%	75%	57%	31%		
Bloomberg Env	24%	27%	22%	11%	51%	29%	36%	50%	74%	20%	50%	

100-90%
90-80%
80-70%
70-60%
50-60%
40-50%
30-40%
20-30%
10-20%
0-10%

Figure 4 - Note: The analysis uses the MSCI Emerging Markets Index as starting universe. We show the correlations between Osmosis' environmental factor scores (Resource Efficiency, Carbon, Water, and Waste) and ESG scores from different data vendors. 'Env' indicates scores that are solely based on the environmental pillar. A higher percentage number indicates a higher correlation between the two respective metrics in question. Sample period: ESG data covers the period January 2024 to December 2024 and corresponding Resource Efficiency data over the same time period. The date is determined by the fact that we use the latest date for which we have Osmosis' factor scores. Source: Bloomberg, Osmosis Investment Management.

Resource Efficient companies are more likely to beat analyst EPS estimates

This differential is consistent across both markets.

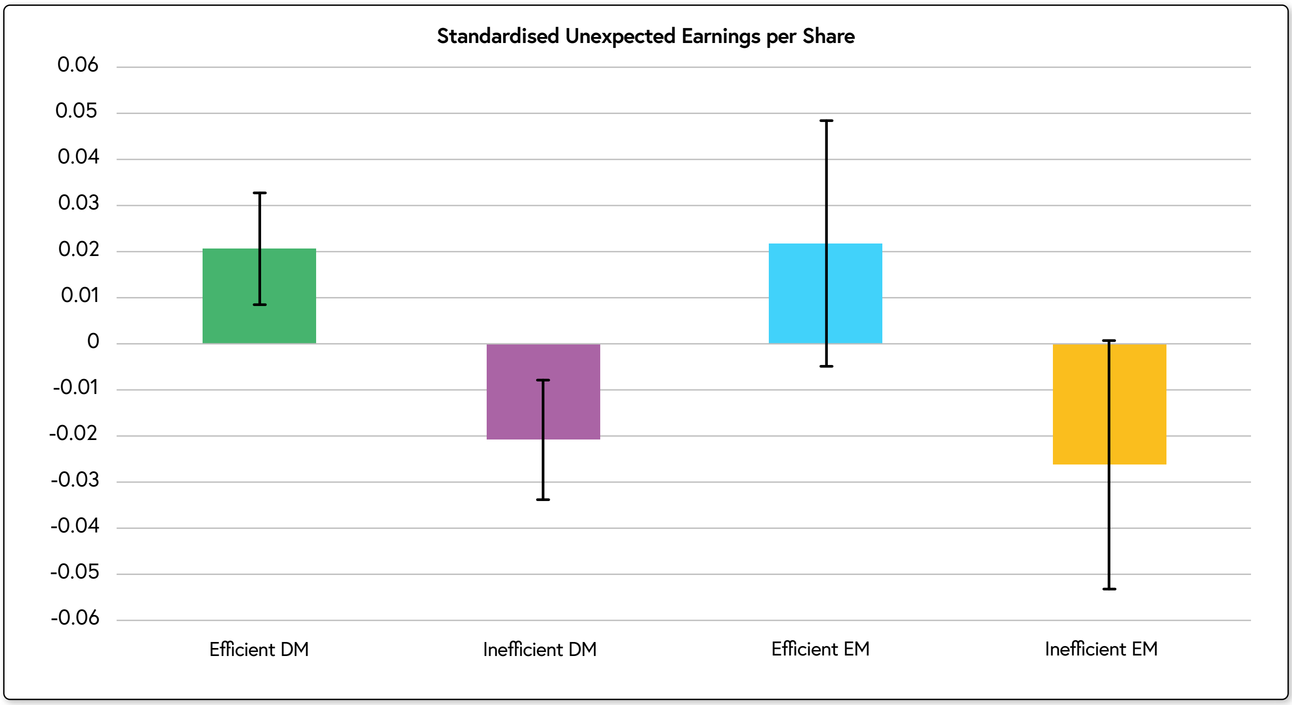

Figure 5 - Note: We analysed the Earnings Surprise of companies that report sufficient environmental data to assess their Resource Efficiency. The analyses use the MSCI World Index and MSCI Emerging Markets Index as starting universes, respectively. Companies in the index are split into two research portfolios using Osmosis' Resource Efficiency score as the sorting variable: the most Resource Efficient companies (DM – top half in green, EM - top half in blue) and the least Resource Efficient companies (DM – bottom half in purple. EM - bottom half in yellow). We show z-scores that are calculated to show the standard deviations that a company's financial metric is away from the yearly sector mean. The height of the bars shows the average z-score across all companies. The error bars at the top of the columns represent the 95% confidence interval of the mean. Sample period for DM: 31/12/2005 to 31/12/2024. Sample period for EM: 31 August 2019 to 31 December 2024. For EM, the start date is exogenously determined by the environmental data availability for companies in the index. Source: FactSet, Osmosis IM.

The alpha that we capture in the DM demonstrates that existing financial characteristics are not able to fully explain the performance differential between Efficient and Inefficient companies.

Studying analyst forecasts, we find that the RE factor serves as an indicator for companies that tend to surprise on the upside versus those that disappoint relative to analyst estimates. While this is not yet as statistically significant in the EM as it is in the DM, we are beginning to see a similar trend emerging. This begins to provide some explanation of how RE is being rewarded by the market.

Conclusion

Our research demonstrates that RE is a distinct and uncorrelated source of alpha, not captured by traditional financial factors or by mainstream ESG ratings. Our RE factor, constructed through rigorous environmental and quantitative research is uniquely driven by our proprietary data and consistently identifies high-quality companies. It acts as an early indicator of strong management teams, and we see this reflected in better fundamentals. Across both DM and EM, RE outperformance is primarily driven by the resource efficient companies themselves, rather than by country, sector, or other common factor betas and we observe that companies scoring highly on RE more often than not exceed analyst forecasts, while the opposite is true for their inefficient peers. By integrating our RE factor into investment portfolios, we seek financial outperformance and see a meaningful improvement in environmental impact.

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