Dimensional

Market Returns Compared to Strategies Excluding Energy and Utilities

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Investors sometimes wonder if certain sectors or industries exhibit meaningful differences in average equity returns through time or have higher or lower expected returns going forward. A related question is: What is the impact on performance of excluding a particular sector? This question may be of particular interest to sustainability-focused investors because their investing style often excludes companies with large potential or actual emissions of greenhouse gases,[1] which tend to be concentrated in the energy and utilities sectors.

APPROACHING THE QUESTION

In contemplating this question, we looked at the performance of equity markets excluding real estate investment trusts (REITs). We first looked at the US equity market utilizing securities data sourced from CRSP[2] and Compustat.[3] We took this approach to provide a broad representation of the investable equity universe, as compared to the S&P 500 Index, for example, which measures only large cap stocks in the US market.[4] We compared the historical performance of the US equity market including all industrial sectors vs. the US equity market excluding utilities companies, energy companies, or companies in both sectors. These exclusions are broader than what may be employed by a sustainability investment strategy that determines company exclusions based on their current emissions data, as not all utility or energy companies have large potential or actual emissions. In other words, some companies within these sectors do a better job than their peers at addressing sustainability investors' concerns related to the effects of greenhouse gas emissions. However, identifying a more precise selection of companies to exclude from a historical analysis is challenging because the science and data to address sustainability considerations have become available only recently. The results on the next page illustrate the impact of one approach to emissions-focused exclusions, excluding full sectors. It is worth noting that a sustainability approach that uses available data to more precisely define exclusions within sectors, instead of excluding all utilities and energy companies, would be expected to exhibit lower tracking error relative to the market.

1. Actual greenhouse gas emissions refers to a company's reported or estimated emissions totals. Potential greenhouse gas emissions refers to fossil fuel reserves held by a company, which may be considered a potential source of future emissions.
2. CRSP is Center for Research in Security Prices.
3. **Please refer to Methodology and Disclosures and Glossary for additional information.**
4. Indices and universes are unmanaged and cannot be invested into directly.

Exhibit 1

Panel A—US Market, January 1975–December 2016	US Market	US Market excluding Utilities	US Market excluding Energy	US Market excluding Energy and Utilities
Annualized Compound Return	12.39	12.43	12.37	12.41
Annualized Standard Deviation	15.26	15.71	15.55	16.09
Monthly Average Return	1.08	1.08	1.08	1.09
Annualized Tracking Error vs. Market	—	0.80	1.86	2.34

Panel B—Developed ex US Markets, January 1990–December 2016	Dev. ex US Markets	Dev. ex US Markets excluding Utilities	Dev. ex US Markets excluding Energy	Dev. ex US Markets excluding Energy and Utilities
Annualized Compound Return	4.50	4.41	4.46	4.36
Annualized Standard Deviation	16.93	17.19	17.04	17.34
Monthly Average Return	0.49	0.49	0.49	0.48
Annualized Tracking Error vs. Market	—	0.51	0.97	1.24

Panel C—Emerging Markets, July 1995–December 2016	Emerging Markets	Emerging Markets excluding Utilities	Emerging Markets excluding Energy	Emerging Markets excluding Energy and Utilities
Annualized Compound Return	5.52	5.61	5.56	5.65
Annualized Standard Deviation	22.75	22.82	22.77	22.80
Monthly Average Return	0.67	0.68	0.67	0.68
Annualized Tracking Error vs. Market	—	0.52	1.28	1.51

Filters were applied to data retroactively and with the benefit of hindsight. Returns are not representative of indices or actual strategies managed by Dimensional and do not reflect costs and fees associated with an actual investment. Actual returns may be lower. Performance is hypothetical, doesn't reflect trading in actual accounts, and is for information purposes only. Please see Methodology and Disclosures for more information. Please see Glossary for definition of terms.

RESULTS

Exhibit 1, Panel A presents summary statistics for these different strategies for the US market. The similar numbers show that over the period analyzed, the exclusion of utilities and energy companies did not have any material impact on average returns or volatility.[5]

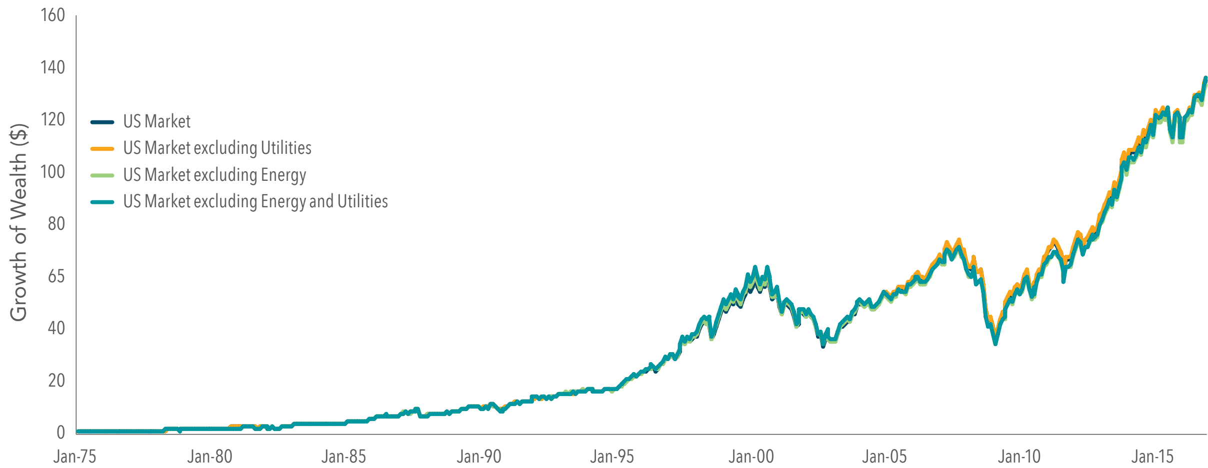
We further tested the strength of these findings by performing the same comparisons in developed markets outside of the US and emerging markets. We used securities data from Bloomberg to again provide a broad representation of the investable equity universe in these markets. As shown in **Exhibit 1**, **Panels B and C**, results for developed ex US and emerging markets were similar to those found for the US equity market.

Across the US, developed ex US, and emerging markets, the strategies that made sector exclusions had an annualized tracking error with respect to the market portfolio that ranged from approximately 0.5% to slightly more than 2%. This means that returns observed in the analysis for these strategies tended to track closely to those of the market portfolio. To illustrate what this low tracking error means in terms of long-term growth, **Exhibit 2** shows how paths for growth of $1 compare across the strategies and highlights that they were not materially different. Assuming an investor in a sustainability strategy had purchased the market with the exception of all utilities and energy companies, they would have had a similar growth of wealth as a full market investor over these periods of time.

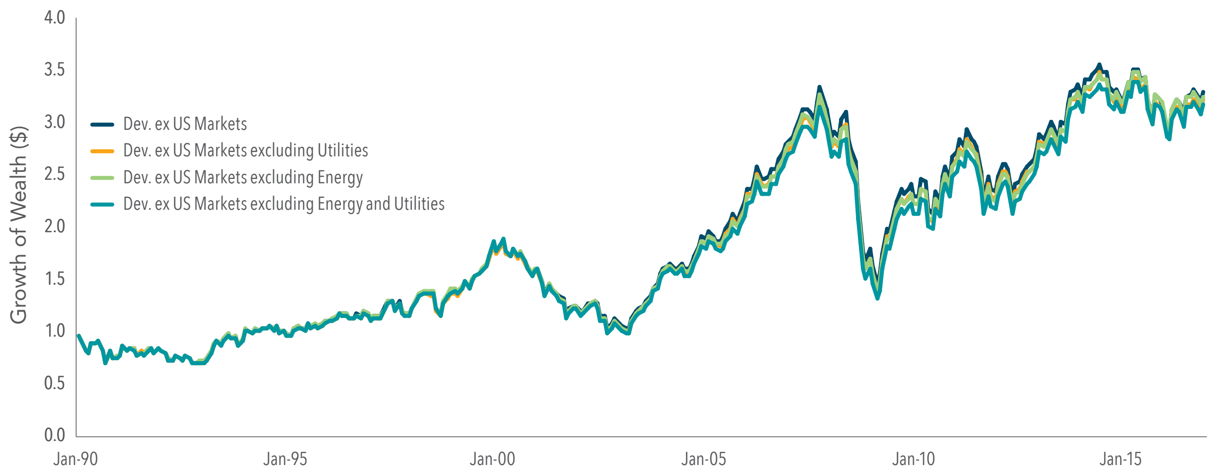
5. As measured by annualized standard deviation.

Exhibit 2

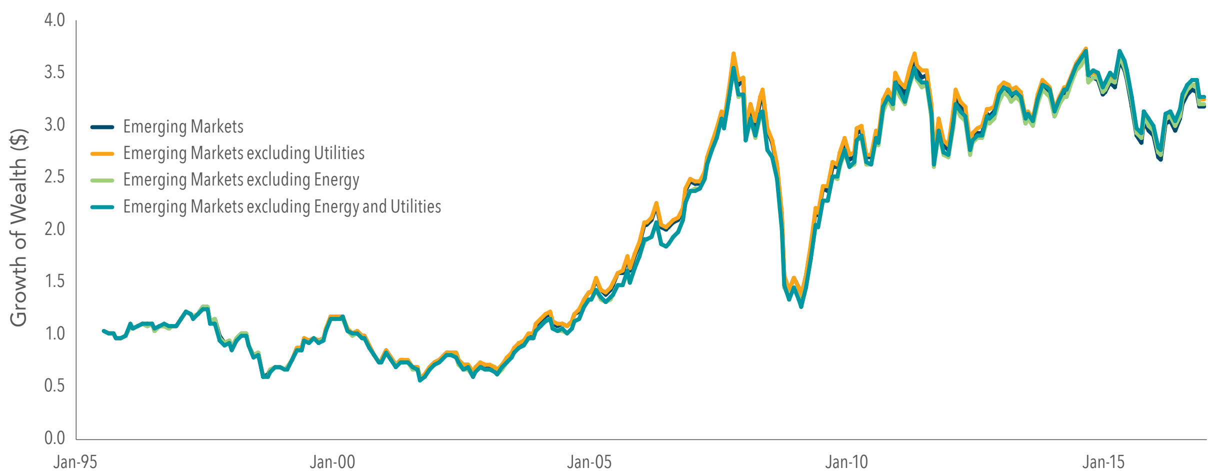
Panel A—US Market, January 1975–December 2016



Panel B—Developed ex US Markets, January 1990–December 2016



Panel C—Emerging Markets, July 1995–December 2016



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This historical analysis seems to corroborate what has been documented in numerous academic papers. Expected returns tend to be driven by prices because they are a component of market capitalization and valuation ratios,[6] instead of just being driven by the industrial sector the company belongs to.

METHODOLOGY AND DISCLOSURES

US market data from CRSP and Compustat. Developed ex US and emerging markets data from Bloomberg. All hypothetical portfolios presented include equity securities across all market capitalizations as listed in the sources stated above and exclude REITs. Hypothetical US portfolios are capitalization-weighted and rebalanced annually at the end of December. Hypothetical developed ex US and emerging market portfolios are capitalization-weighted, and each country is weighted according to its size eligible capitalization. Hypothetical developed ex US and emerging market portfolios are rebalanced semiannually at the end of June and December. The hypothetical portfolios utilize Standard Industrial Classification (SIC) codes for the US market and Bloomberg classification codes in the developed ex US and emerging markets to identify securities in the REIT, Utilities, and Energy sectors. CRSP data provided by the Center for Research in Security Prices, University of Chicago. Past performance, including hypothetical performance, is no guarantee of future results.

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GLOSSARY

Sustainability Investment Strategy: An investment approach that seeks to consider both financial return and investors' preferences regarding environmental issues (e.g., climate effects).

Real Estate Investment Trust (REIT): A company that owns and often operates commercial real estate or finances real estate. REITs are typically exempt from corporate taxation and have to distribute most of their taxable income as dividends to shareholders.

Annualized Compound Return: The rate of return at which capital has compounded over time, expressed in annual terms. For example, a portfolio that increased in value from $100 to $120 over the course of two years would have an average annual return of 10% (20% divided by the two years of the holding period) but an annualized compound return of about 9.54%. A 9.54% return on $100 after one year would increase the portfolio value to $109.54, and a 9.54% return on the $109.54 in year two would increase the portfolio value to $120.

Monthly Average Return: The average percentage change in capital without considering the effects of compounding, expressed in monthly terms. For example, the average monthly return over a two-month period that included a 2% return in month one and a 1% return in month two would be 1.5%.

Standard Deviation: A measure of variation or dispersion of a set of data points. Standard deviation is often used to quantify the historical return volatility of a security or portfolio.

Tracking Error: A measure used to quantify how closely a portfolio follows an index or benchmark, often defined as the standard deviation of the difference between the portfolio and index returns. For example, an annualized tracking error of 1% would indicate that annual returns were within plus-or-minus 1% of the market portfolio return roughly two-thirds of the time.

Market Capitalization: The total market value of a company's outstanding shares, computed as price times shares outstanding.

Price-to-Book (P/B) Ratio: The ratio of a firm's market value to its book value, where market value is computed as price times shares outstanding and book value is the value of stockholder's equity as reported on a company's balance sheet.

6. Such as the price-to-book (P/B) ratio.

There is no guarantee investment strategies will be successful. Diversification does not ensure a profit or protect against loss. Investing involves risk, including possible loss of principal. Indices and universes are unmanaged and cannot be invested into directly.

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