

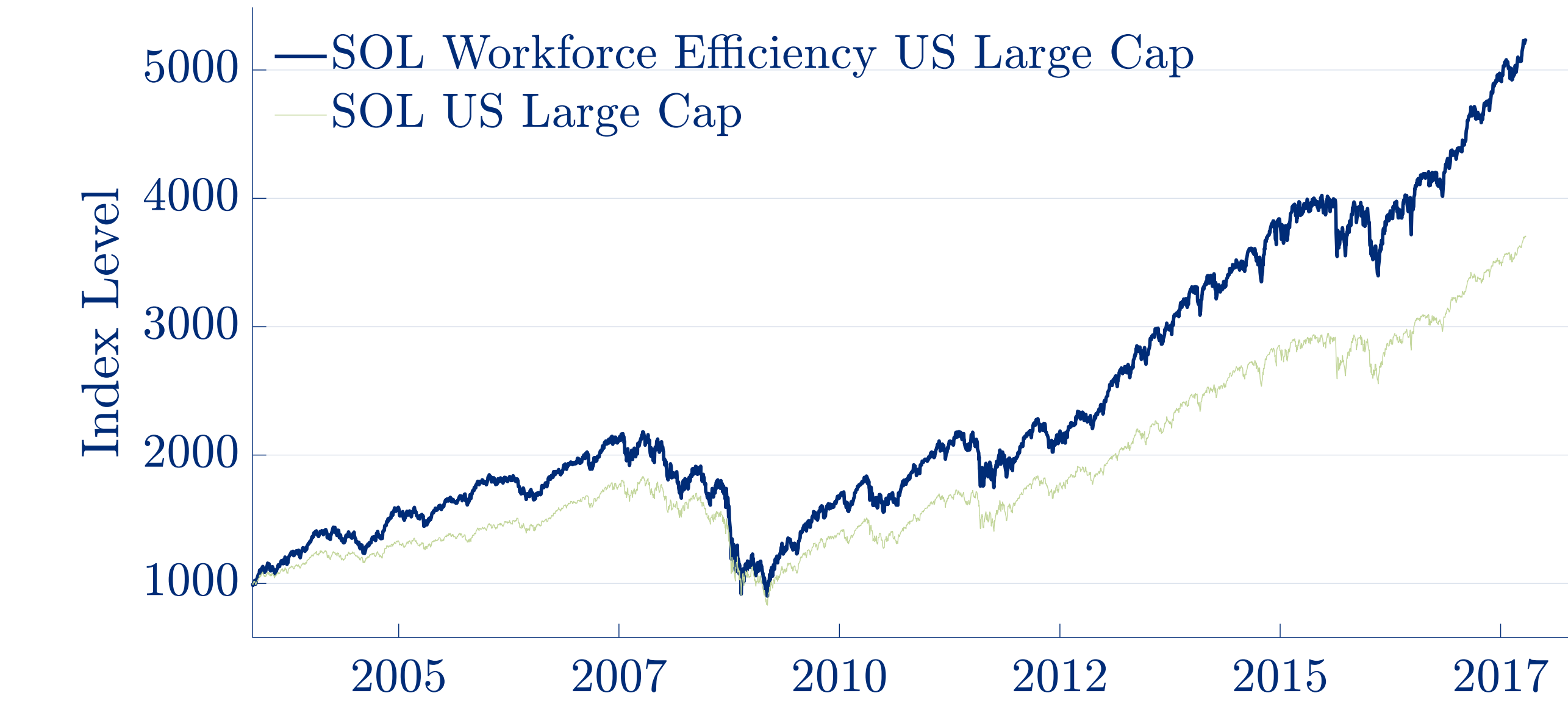


Workforce Efficiency US Large Cap Index

Selection Methodology

- **Starting Universe:** Solactive US Large Cap
- **Number of Index Members:** 100
- **Selection Criteria:** Companies with the highest Net Income per Employee Average Cost
- **Rebalancing Frequency:** Annually
- **Index Currency:** USD
- **Index Type:** Gross Total Return
- **Weighting:** Equal
- **Minimum 6-month ADV:** USD 1 mn
- **Minimum MCAP:** USD 300 mn

Backtest (07-May-2003 – 16-Oct-2017)



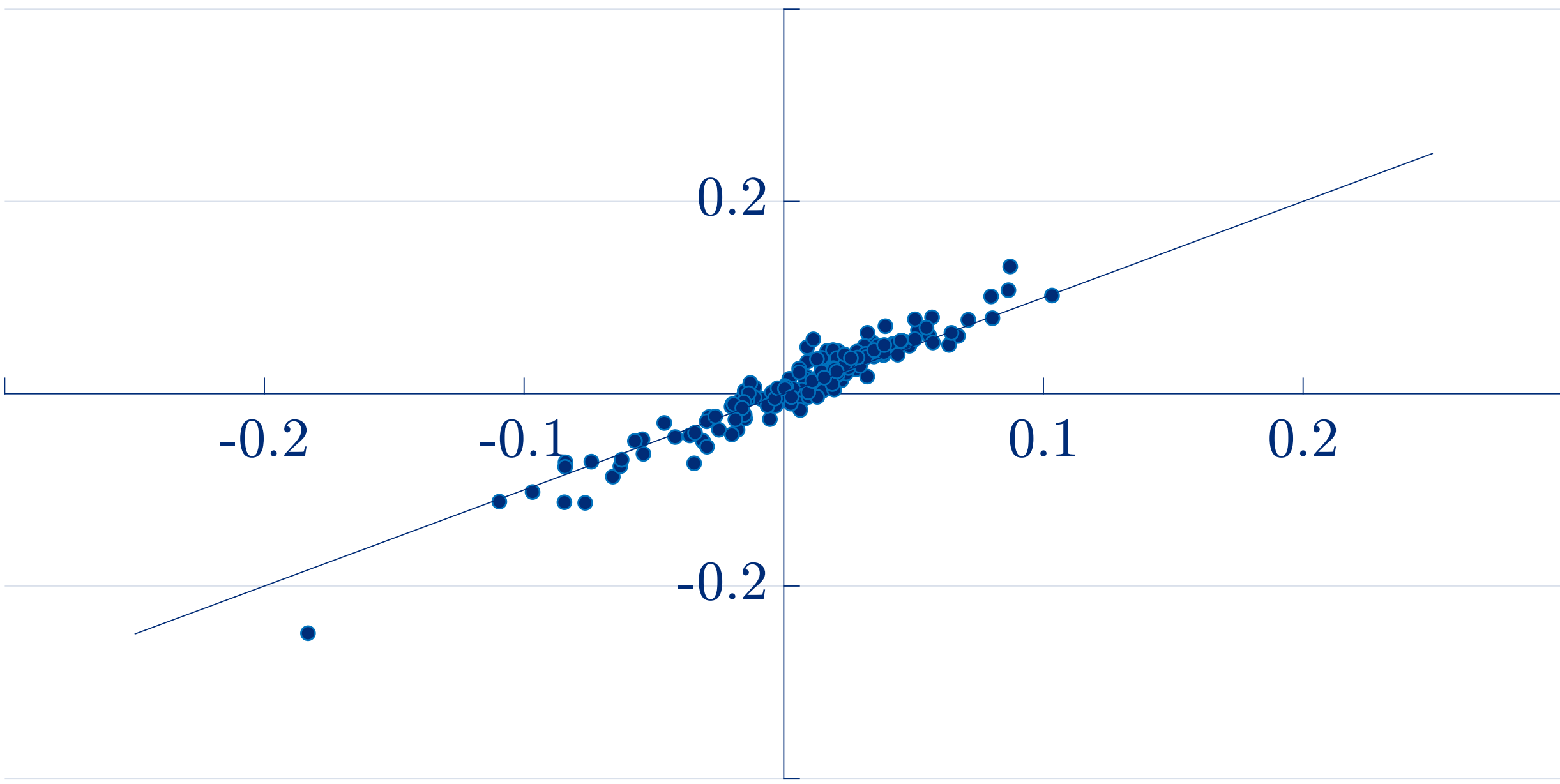
Ratio against SOL US Large Cap



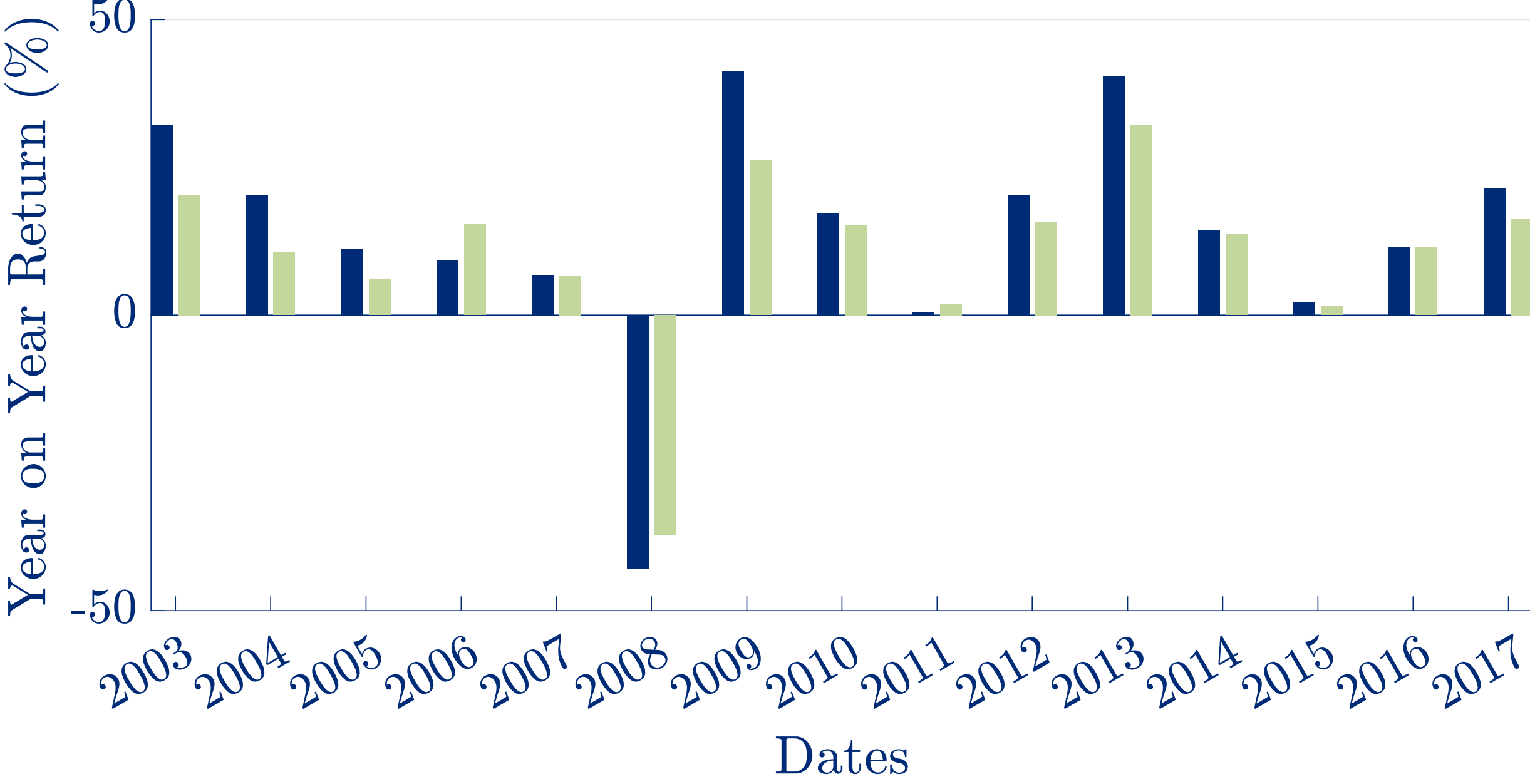
Annualised Performance Figures

	SOL Workforce Efficiency US Large Cap	SOL US Large Cap
Mean	8.22%	6.46%
Standard Deviation	20.08%	18.18%
Downside Deviation	14.15%	12.90%
Max Drawdown	-58.72%	-54.73%
Sharpe Ratio	0.41	0.36
Sortino Ratio	0.58	0.50

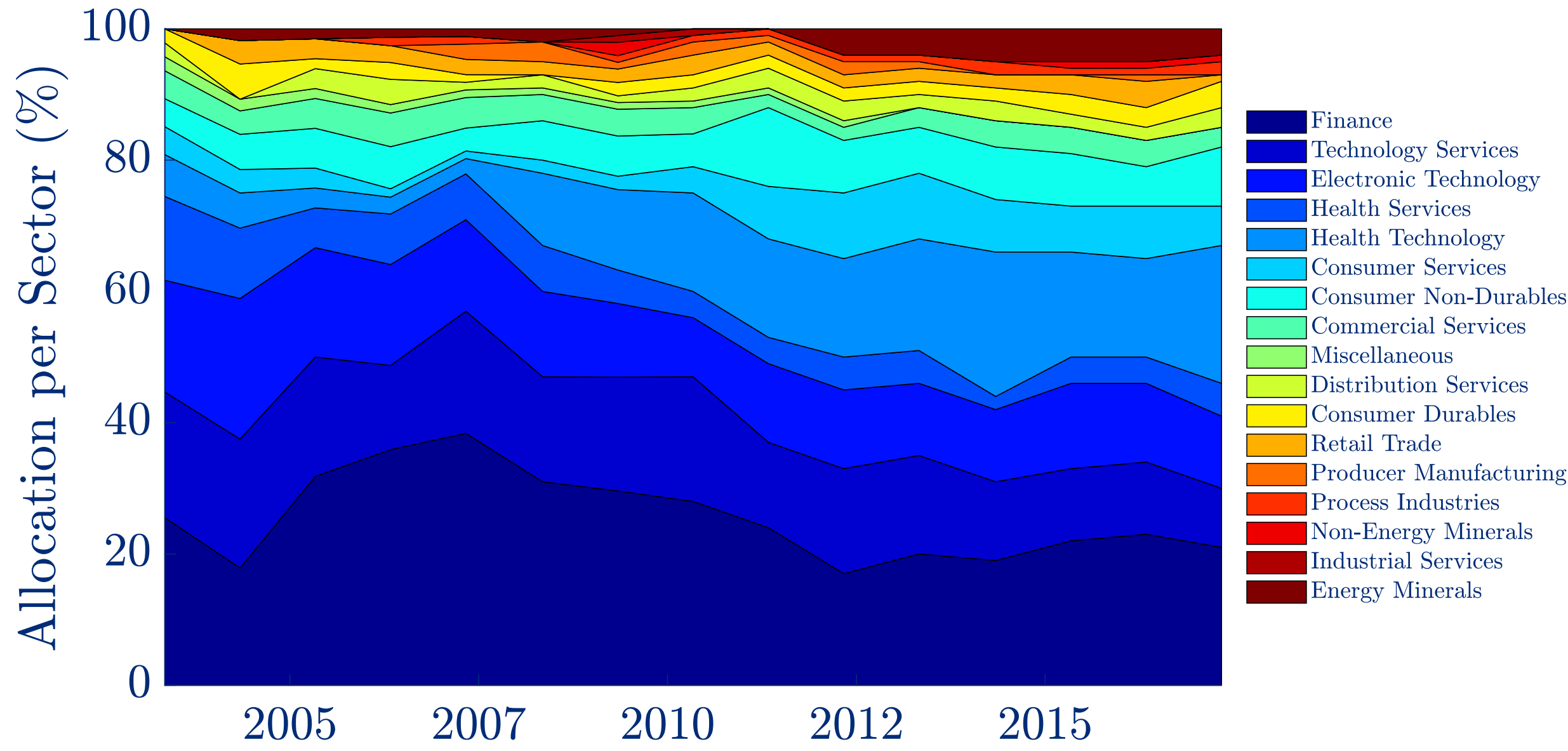
Scatterplot of SOL Workforce Efficiency US Large Cap (Y) against SOL US Large Cap (X), monthly data



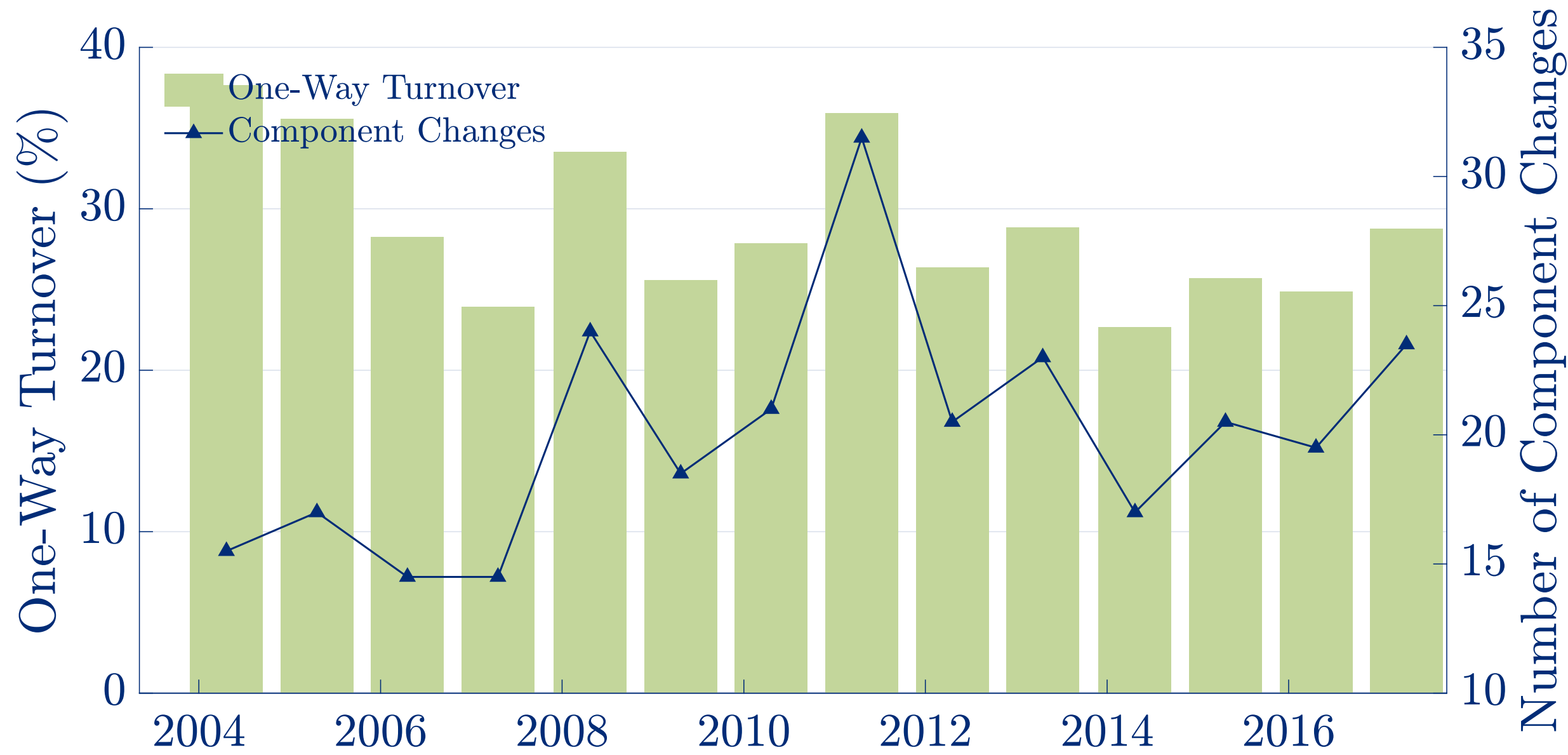
Year on Year Returns



Historic Sector Allocation



Historic Turnover



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Solactive Workforce Efficiency US Large Cap Index

Invest in companies with the most efficient talent pool



HOW to generate investment exposure to efficient talent pools? To answer this question we first take a look at the importance of this key resource on the industry level. Various business models have different essential inputs. For example, innovation is crucial for technology, R&D for pharmaceuticals and commodity prices for energy producers. Although **workforce efficiency** is a common input for most types of businesses, it is vital for labor-intensive industries such as **financial advisory services, medical services, insurance, software development** among other.

The importance of acquiring talent that delivers results in these industries is higher than in sectors like utilities or airlines, in which the success of an enterprise depends more heavily on its Plant, Property and Equipment (PP&E). For labor-intensive type of companies, the question stands: what is the output of the talent pool compared to the peers? It is an imperative question since having a **talent efficiency** superior to the competitors is a crucial economic advantage.

Solactive Workforce Efficiency Index provides targeted exposure to 100 companies from labor-intensive industries with highest output per employee. All constituents are equally weighted in order to avoid concentration on large cap stocks. The index is fully investable as liquidity and market capitalization thresholds apply. Also, the application of other restrictions and parameters are possible.

Intuition

The companies with higher workforce efficiency tend to outperform the benchmark. Several reasons support the result:

Better management of the talent pool - higher returns. Since the output per costs of workforce is higher, the companies are prioritizing the recruitment of top talent as well as the organization of work flows to achieve a higher efficiency of the resources utilization.

Competitive advantage. Having a higher output per employee in a labor-intensive industry is not just essential, but a crucial competitive advantage. A company with a well-organized talent pool that delivers superior output generates higher returns

and subsequently better stock performance.

Lower fixed costs and capital expenditures. Companies which require lower regular PP&E investment are more flexible since they can adjust more easily their expenditures depending on the demand for their product or service. In comparison, companies that require a substantial amount of ‘brick and mortar’ property have to do more long-term, and thus risky, investments (e.g. building new factories or acquiring equipment).

Index Construction

The first step in the selection process is classifying industries into labor and capital intensive categories by measuring the amount of Property, Plant and Equipment (PP&E) involved in the process of revenue generation. For this purpose, we use the industry average ratio of:

$$\frac{\text{Revenue}}{\text{PP\&E}}$$

The components of top 60 industries form the underlying universe, from which the index constituents are further selected. In the second step we generate exposure to the companies with the highest output per employee by first applying an operating cash flow filter of

$$\frac{\text{Operating Cash Flow}}{\text{Total Number of Employees}}$$

higher than 50.000\$, which is approximately equivalent to US GDP per capita. Further, we rank the components according to their labor output:

$$\frac{\text{Net Income}}{\left(\frac{\text{SG\&A}}{\text{Total Number Of Employees}}\right)}$$

where SG&A means Selling, General and Administrative expenses, one of the main components of which is labor cost. At each selection day, the top 100 ranking companies form the index.

Selection Criteria

- **Starting Universe:** Solactive US Large Cap

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- **Rebalancing Frequency:** Annually

- **Index Currency:** USD

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Backtest Results

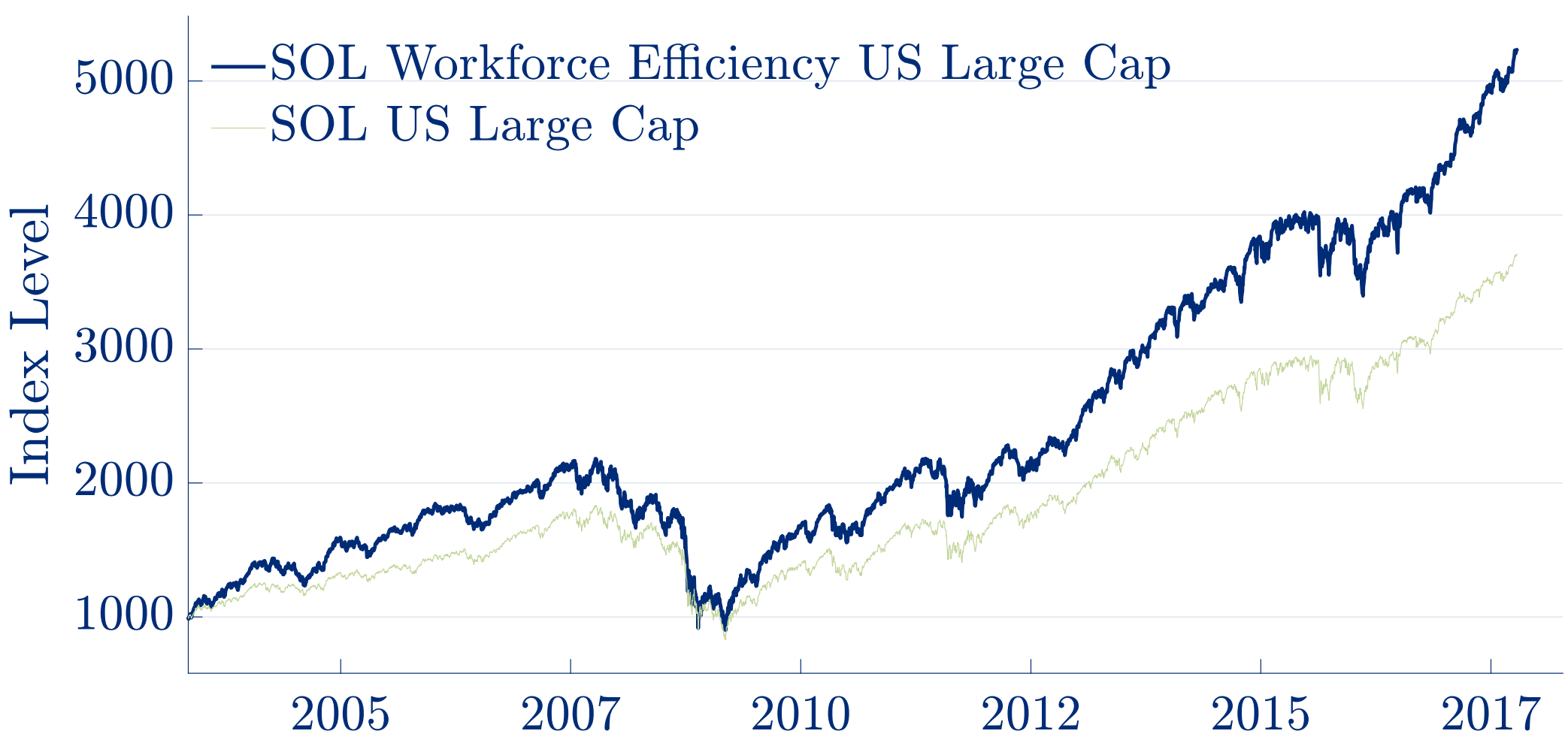


Figure 1: Backtest index

The backtest performance shows that the intuitive investment theme of investing in companies with the most efficient talent pools can be built into a tradable index that outperforms its benchmark.



Figure 2: Ratio against the benchmark

In Figure 2 we can see how consistently the index outperforms its benchmark. The consistency of outperformance underlines the efficiency of the factor, which is generating exposure to top performers in labour intensive industries like Technology or Health Services.

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The risk-adjusted return of the index is superior to that of the benchmark. Guiding ourselves by the Sharpe Ratio, we can observe that the portfolio delivers a higher return for the risk taken.

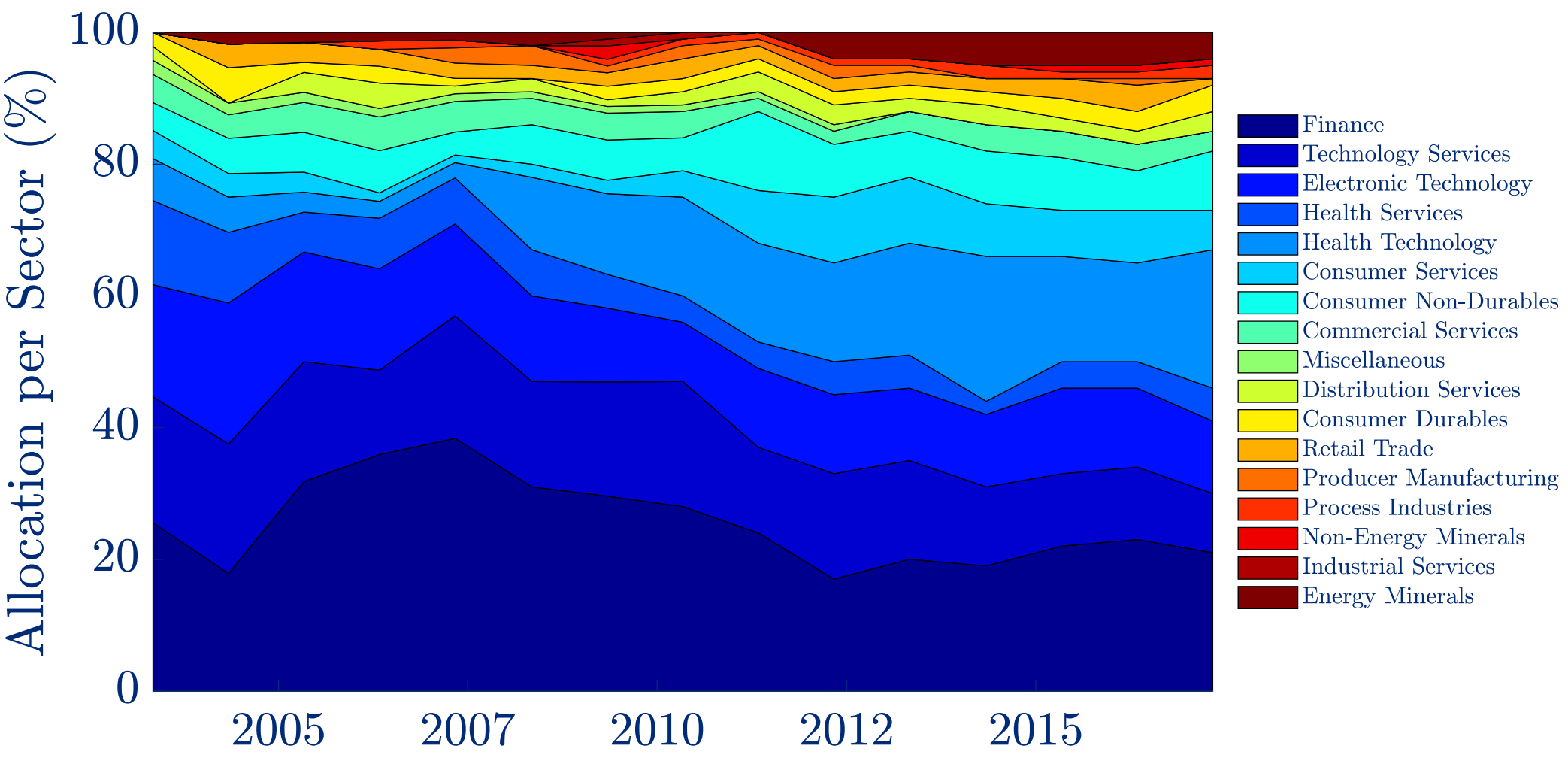


Figure 3: Historic sector allocation index

The sector allocation is intuitively distributed through industries in which the talent pool is essential. Highly qualified professionals represent the core of the business model of companies in sectors such as Finance, Health Services or Technology Services. Industries which on contrary are heavily dependent on regular capital expenditures, such as Utilities, Marine Shipping, Railroads and Metal Miners among other, are excluded by the selection algorithm from the start.

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