

# Systematic Equity — Active: Alpha Innovation and Advanced Technology

At State Street Global Advisors, our systematic equity — active team aims to generate alpha by carrying out cutting-edge research — an approach that has long been at the core of our investment processes. Our research is powered by investment expertise and state-of-the-art quantitative technology, including a new re-optimized cloud-based platform for data storage and analysis. In addition, we can point to several themes in our research culture:

- Robust and Disciplined Research Approach
- Diversity of Ideas: Insights from Multiple Disciplines
- Alignment of Incentives with Client Outcomes

## Innovation Backed by Research

Research-driven innovation continues to allow us to source creative stock selection ideas that can boost returns and increase non-traditional factor exposure. Over the past seven years, we have developed long-term research priorities and put ideas into place that have helped to provide differentiated outcomes.

“**To support our vision of a differentiated equity platform, we seek to deepen existing competitive advantages such as the research innovations of our cognitively diverse team and investment technologies. We will also continuously strengthen our offering by prioritizing bold but implementable idiosyncratic stock selection alpha ideas.**”

— Alejandro Gaba, Senior Managing Director,  
Head of Research for the Systematic Equity — Active Team  
and Active Team Leader

## The Importance of Innovation

We offer benchmark aware and unaware strategies to maximize alpha through active stock selection, via a multi-dimensional model. Our investments have exposure to Value, Quality, Sentiment and Catalyst core themes. Our efforts to innovate are driven by a wide range of trends. These can be summarized as follows:

- The landscape for active management has become even more competitive and in many cases commoditized. Investors have widely adopted certain factors, making non-traditional factor innovation key to performance.
- Alpha arises from discovery and the ability to generate and take advantage of orthogonal factors.
- Research budgets should be optimized towards long-term alpha research priorities.

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Market participants have placed an increasing focus on technologies aimed at reducing the time required for factor discovery. **However, we continue to exercise caution against abandoning rigor.** Increasing computational power still requires in-depth testing and a keen understanding of the drivers of expected returns.

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## A Closer Look at Our Research Process

We believe that our process helps to put our research vision — including alpha generation and differentiated outcomes — into action. Our process has the following elements:

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### Creative Ideas

To set our research priorities, we start by allowing employees across the firm to provide research ideas to the systematic equity — active team during our research summit. This unique approach allows us to capitalize on the diverse views and perspectives across a global multidisciplinary team. It also allows for studies of feasibility, deep research and debate, and finally allows for the leadership team to adjudicate as it relates to the voting so as to determine research priorities for the following 12–18 months. The ideas satisfy the following requirements:

- **New Signals** Ideas are focused on (1) new, robust signals that have economic intuition; (2) existing signals that can be improved; and (3) portfolio construction tools enhanced by the firm's technological resources that efficiently transfer alpha.
- **Longevity** We are not interested in factors that are fleeting or only work for a short period of time.
- **Data integrity** One must avoid data mining to avoid accidental discoveries of non-prespecified outcomes.
- **High Standards** There is a prioritization on the quality of ideas over the volume of ideas, and we seek rigor in how ideas are selected.
- **Collaboration** Weekly global team research meetings invite challenges.

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## The One Alpha Model

We operate with a single alpha model that can be deployed with varying risk budgets and across different geographies. The model is based on having one forecast for every stock, rather than having signals that are applied to all stocks indiscriminately; importantly, selection and influence can vary across segments.

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## Advanced Quantitative Tools

Our toolkit includes a new cloud-based computing platform; an ongoing system of alpha diagnostics and research; and a range of portfolio construction tools. Also, we have partnered with risk-model engine provider Axioma.

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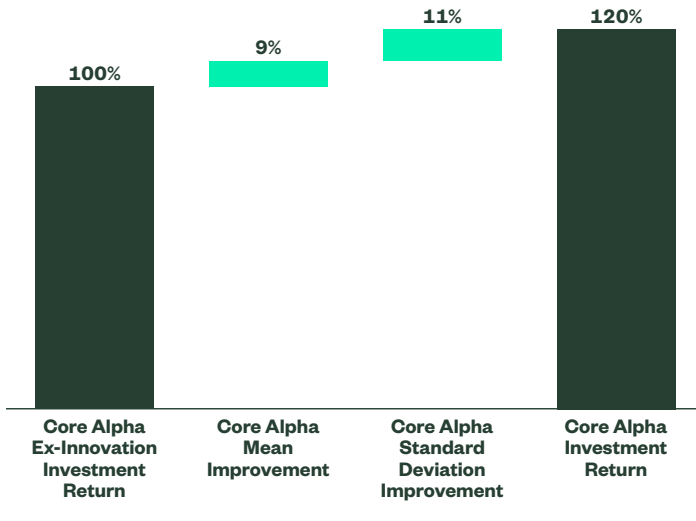
## Research and Development in Practice

Historically, our rigorous research has spawned incremental improvements to our alpha scores and expected long-term predictability that accumulates over time into meaningful and larger impact. We monitor these performance results closely, as we evaluate the success of our research based on live outcomes, not backtests. This helps us to maintain alignment of incentives with client outcomes.

Our focus on robust innovation is evidenced by the net addition of 50+ signals to our model over the last seven years. Today, 40%+ of the 80+ signals in our model come from alternative data, and only 1 in 8 are more traditional. The innovation has led to both meaningful changes in alpha assessment and improved predictability of returns. A comparison of equal-weighted 1-month quintile spread portfolios of our Core alpha (excluding dynamic overlay, country and sector models) versus that of a proxy pre-innovation alpha reveals:

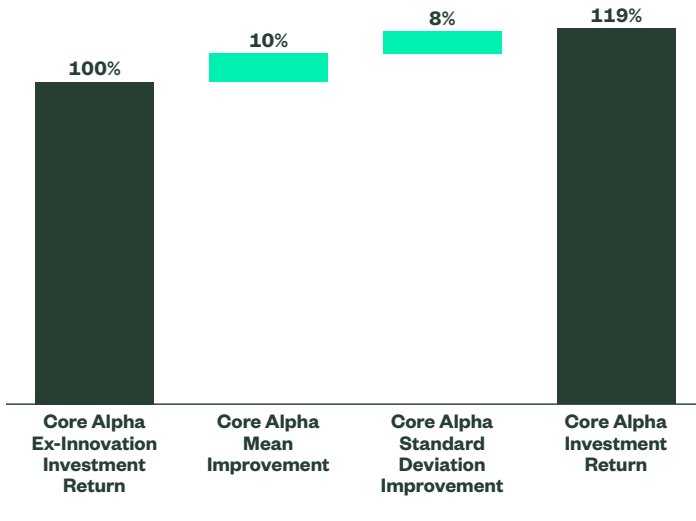
- 1 There is over 1/3 difference in holdings.
- 2 There is a 20% increase in Information Ratio over the full sample period (see Figure 1) and a 19% increase over the innovation period (see Figure 2), resulting from both increased returns and diversification benefits. This improvement rises to 30%+ over longer holding periods.
- 3 A Jensen alpha analysis<sup>1</sup> of Core alpha versus Core alpha ex-innovation 1-month spread returns reveals statistically significant Jensen alpha over the full sample and innovation periods. The analysis attributes 18% and 16% of the spread returns to our innovation for the full sample and innovation periods, respectively (Figure 3).

Figure 1 **Return Improvements for Core Alpha**  
Full Sample Period



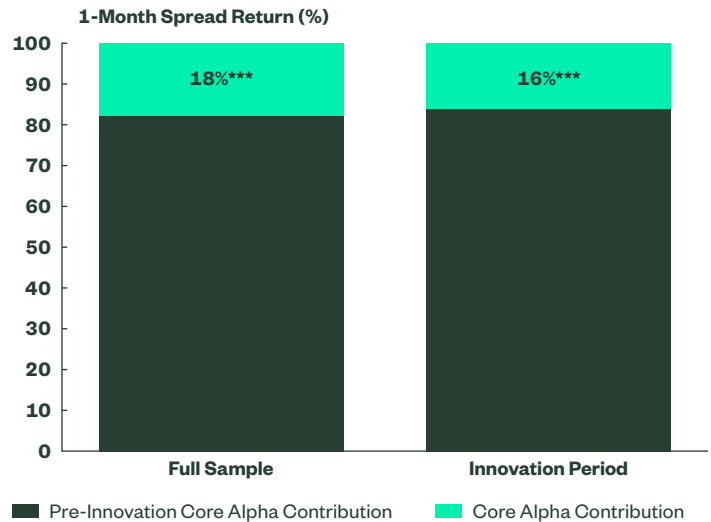
Source: State Street Global Advisors. Past performance is not a guarantee of future results.

Figure 2 **Return Improvements for Core Alpha**  
Innovation Period



Source: State Street Global Advisors. Past performance is not a guarantee of future results.

Figure 3 **Core Alpha Return Attribution**



Source: State Street Global Advisors. Past performance is not a guarantee of future results.

\*\*\*Indicates significance of the Jensen alpha at 1% level.

## Alpha Generation Sample Cases

Specific cases include the following:

- Advanced Natural Language Processing (NLP)/Machine Learning** To harvest rich information from various unstructured textual data such as earnings call transcripts or regulatory filings, we leverage the power of advanced natural language processing and machine learning techniques which are adept at understanding the context. This includes traditional NLP, but also advanced tools such as Transformer Model.
- Other AI Tools** We strive to harness the benefits of latest breakthroughs in AI such as generative AI to advance our research and enhance our investment process. The broad investment organization in SSGA is also looking at how we can use AI for investment decision making. See [Putting the Power of AI to Work in Investing](#).
- Confidence Quotient (CQ)** The collaboration between the systematic equity and fundamental teams at State Street Global Advisors is a strong example of the spirit of partnership between research teams across the firm (see: [Cross-Team Collaboration Sparks Fresh Perspectives](#)). The insights of the fundamental team serve as a helpful extension of the research of the systematic equity team, providing us with better ideas, better hypotheses, and ultimately, better model decisions. The fundamental team relies on a CQ framework, in which they assess the quality and sustainable growth of issuers through forward-looking analysis and insight, and use those inputs for security selection.

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- **Supply-Chain ESG** Our research tackles the difficult challenge that firms and investors face in calculating a company’s total carbon footprint (including the GHG emissions of all pieces of the supply chain) and then apply it to our proprietary ESG assessment. For more information, see “Quantifying Supply Chain ESG Risks: A Flexible Framework.”<sup>2</sup>
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## Long-term Research Priorities

Over the last several years, we have identified and worked to execute three key areas of long-term research priorities that best support our research vision.

### 1 Segment-Specific

Our research is connected to a specific segment of the investment universe or opportunity set, as signal selection and influence can vary across segment. Segment specificity makes the research more pinpointed and drives accuracy.

### 2 Alternative

We focus on novel ways of looking at and finding data to support innovation and to help shield against the existing commoditization of certain signals.

### 3 Environmental, Social and Governance (ESG)

Researching ESG criteria can potentially improve risk-adjusted returns, as it allows us to find opportunities for alpha and uncover risks that traditional financial accounting and analysis may miss.

We have found that these areas, when used as the basis of our research efforts, help us to be more effective in finding non-traditional sources of alpha.

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## Raising the Bar

We aim to bring about meaningful improvements in returns from our systematic investing process, which is differentiated by our robust research approach, initial idea generation process, technological know-how and portfolio construction expertise that allows efficient implementation of signals, discipline in types of signals used and research-driven conclusions. This discipline applies to all opportunities, particularly those influenced by advanced AI — a powerful research tool that can drive a new era of innovation. Our 30-year heritage in systematic active equity investing helps us to discern which opportunities, AI or otherwise, will be most relevant to portfolio risk and return.

Our goal is to continuously innovate so that we can help clients take advantage of ideas that are bold and new, not yet commoditized and sustainable in their ability to drive positive performance. In addition, we seek to control risks by understanding each issuer’s fundamentals and uncovering company and macro trends that could impact returns. The examples of alpha generation listed above help to illustrate how we have added value over time, and we look forward to communicating our future investment enhancements and research priorities.

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## Endnotes

- 1 In empirical finance, Jensen’s alpha is a statistic commonly used to evaluate the excess return of a security or a portfolio of securities not explained by existing factors such as market return. It was first introduced as a measure in the evaluation of mutual fund managers by Michael Jensen in 1968.
- 2 Gaba, Alejandro. Warburton, Toby. Yin, Hao. Quantifying Supply Chain ESG Risks: A Flexible Framework. State Street Global Advisors, June 15, 2023.

## About State Street Global Advisors

For four decades, State Street Global Advisors has served the world's governments, institutions and financial advisors. With a rigorous, risk-aware approach built on research, analysis and market-tested experience, we build from a breadth of index and active strategies to create cost-effective solutions. As pioneers in index, ETF, and ESG investing, we are always inventing new ways to invest. As a result, we have become the world's fourth-largest asset manager\* with US \$4.13 trillion† under our care.

\* Pensions & Investments Research Center, as of December 31, 2022.

† This figure is presented as of December 31, 2023 and includes approximately \$64.44 billion USD of assets with respect to SPDR products for which State Street Global Advisors Funds Distributors, LLC (SSGA FD) acts solely as the marketing agent. SSGA FD and State Street Global Advisors are affiliated.

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