Systematic Active Fixed Income (SAFI)

A straightforward guide to the SAFI investment process

STATE STREET℠
INVESTMENT MANAGEMENT

SAFI: A modern approach to fixed income investing

SAFI (the “Strategy”) employs a quantitative approach to alpha generation that is both rules based and data-driven. Quantitative signals in the form of factor scores are used to drive security selection, while the strategy also seeks to maintain structural risk alignment with the underlying benchmark. In this way, the Strategy seeks to generate alpha, predominantly from security selection. This approach ensures not only a high consistency in the security selection decision, but also does this rapidly and at scale, essentially evaluating thousands of securities simultaneously to identify and harness alpha potential. Furthermore, with the ability to integrate sustainability considerations such as climate into the security selection decision, SAFI can deliver this attractive alpha potential while aligning with any client-specific sustainable investment preferences and objectives.

Our systematic, factor-based approach has been applied to identify investment opportunities across the full credit spectrum from investment grade to high yield. The approach capitalizes on the much improved pricing transparency and frequency of today’s credit markets, that has been facilitated by the improvements in electronic trading. A systematic approach, being both quantitatively driven and rules based, is different from the majority of existing active fixed income strategies, which are highly qualitative and rooted in fundamental analysis. These differences in approach drive very different outcomes in the form of differentiated return streams, and this is one of the key attractions of systematic strategies. It is not just the level of alpha they can potentially generate, but it’s the way in which it is generated, which has been shown to provide attractive manager diversification benefits for investors.

The quality of the factor research is a critical element underpinning any quantitative approach, and that is why we at State Street Investment Management have partnered with arguably one of the most experienced and respected quantitative research teams in fixed income, namely Barclays Quantitative Portfolio Strategy (QPS). Each day, Barclays QPS provides us with factor scores delivered through custom systematic strategy indices that we combine with our expertise in precise portfolio construction and efficient implementation. As a result, we believe that we have an unrivaled combination that can convert this robust theory into practice through portfolios that are constructed to generate attractive yet differentiated return streams. Through this collaboration with Barclays QPS, State Street Investment Management combines its own robust portfolio management and execution expertise with advanced factor research from QPS to offer a comprehensive suite of systematic active strategies.

Figure 1: Our broad spectrum of SAFI strategies

SAFI strategy	Benchmark index
US High Quality Intermediate Corporate	Bloomberg US Intermediate Corporate ex-Baa
US High Quality Long Corporate	Bloomberg US Long Corporate Bond A+
US Investment Grade Corporate	Bloomberg US Corporate Bond
US Long Corporate	Bloomberg US Long Corporate Bond
Euro Investment Grade Corporate	Bloomberg Euro Aggregate Corporate
Euro Investment Grade Corporate Climate	Bloomberg Euro Aggregate Corporate
US Investment Grade Corporate Climate	Bloomberg US Corporate Bond
Global Investment Grade Corporate	Bloomberg Global Investment Grade Bond
Global Investment Grade Corporate Climate	Bloomberg Global Investment Grade Bond
US High Yield Corporate	Bloomberg US High Yield Corporate Bond
US High Yield Corporate BB-B	Bloomberg US High Yield BB-B Corporate Bond
Global High Yield Corporate	Bloomberg Global High Yield Corporate Bond
Enhanced US Core	Bloomberg US Aggregate Bond
Research Pipeline	
US Corporate Fallen Angels	—

Source: State Street Investment Management, as of December 31, 2024.

The backbone of the strategy

The SAFI investment process and alpha generation are underpinned by three key signals, or factors:

Figure 2: Quantitative signals can identify outperformance opportunities in fixed income

Identified signal	Purpose	Economic rationale
Value Excess Spread Over Peers (ESP)	Identifies underpriced risk.	This signal seeks to identify bonds that are cheap relative to their peers* after adjustments for structural and fundamental features such as industry, rating quality and maturity have been made. By analyzing a wide array of securities, the relative value signal identifies bonds that are mispriced. In essence, ESP helps to pinpoint underpriced risk.
Momentum Equity Momentum in Credit (EMC)	Identifies attractive names with strong equity-implied sentiment and protects against value traps.	Momentum focuses on trends in the equity price of the underlying issuer. Bonds of issuers with strong equity price momentum are expected to outperform and are scored higher. Research confirms the lead-lag relationship between equity and bond prices, making EMC an informative early signal for the bond's future performance. Importantly, combining equity momentum with the value signal enhances accuracy by mitigating the risk of being exposed to value traps, which occur when bonds trade cheaply relative to peers for good economic reasons.
Sentiment Equity Short Interest (ESI)	Screens out high-risk issuers aggressively shorted by sophisticated investors.	This signal identifies issuers with significant short interest in their equity. Certain sophisticated investors, such as hedge funds, express negative views on companies by taking sizable short positions in their equity. Companies with significant short interest, therefore, have potential downside risks and are best excluded from credit portfolios. We use this sentiment indicator to screen out issuers that are actively shorted by investors.

Source: State Street Investment Management, Barclays QPS, as of March 20, 2025.
* Peer group categories such as sector, rating and maturity control for systematic risk.

By systematically applying informative signals to identify mispriced securities, SAFI aims to implement portfolios that are poised to outperform standard benchmarks in a consistent, unbiased and structured manner.

The investment process in steps

The Strategy employs a systematic, algorithmic approach to evaluate all securities in the investment universe based on their exposure to each factor. It aims to maximize exposure to those factors in an efficient and practical way.

1. Signal generation

Signals for the three factors—value, momentum and sentiment—are delivered daily by Barclays QPS for each bond in the benchmark through custom systematic strategy indices. Each bond in the investment universe receives four scores: one for each factor and a composite score, as detailed in Figure 2.[1]

The performance contributions of each signal vary over time due to differences in their characteristics and behaviors. The value signal is the primary contributor to active risk during "normal" market environments, while the momentum signal plays an important complimentary role (both in terms of risk and alpha during periods of heightened volatility). In contrast, the sentiment (ESI) signal, which is predominantly used to screen out issuers with high short interest, has a relatively small contribution at the overall portfolio level compared to value or momentum. This is because few names in the corporate index are actively shorted by equity investors at any one time. Excluding these issuers is an effective way to limit downside risks.

2. Portfolio construction

Our rules-based portfolio construction is guided by three main principles:

- Optimal portfolio exposure to the factors
- Control for unintended risks relative to the benchmark index
- Execute efficiently

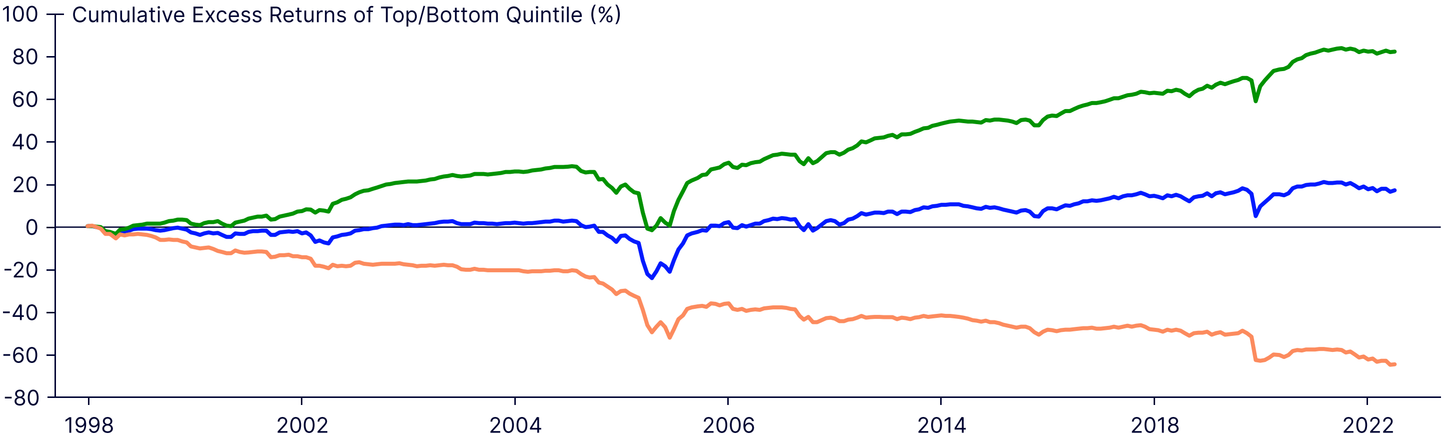
Securities are selected based on their exposure to factor scores, with the portfolio optimized to balance potential returns against risk constraints while ensuring effective execution with low transaction costs. The less liquid portion of index constituents are excluded from the eligible universe based on bond-level liquidity analytics such as traded volumes and bid-offer spreads.[2]

The investor's specific objectives and constraints are incorporated in this process. This includes any desired sustainability exclusions, metrics and targets (see Incorporating Sustainability Considerations section). The liquidity-filtered universe is fed into our proprietary portfolio construction and analytics framework, which produces a model portfolio that maximizes the overall composite factor score subject to the designated constraints.

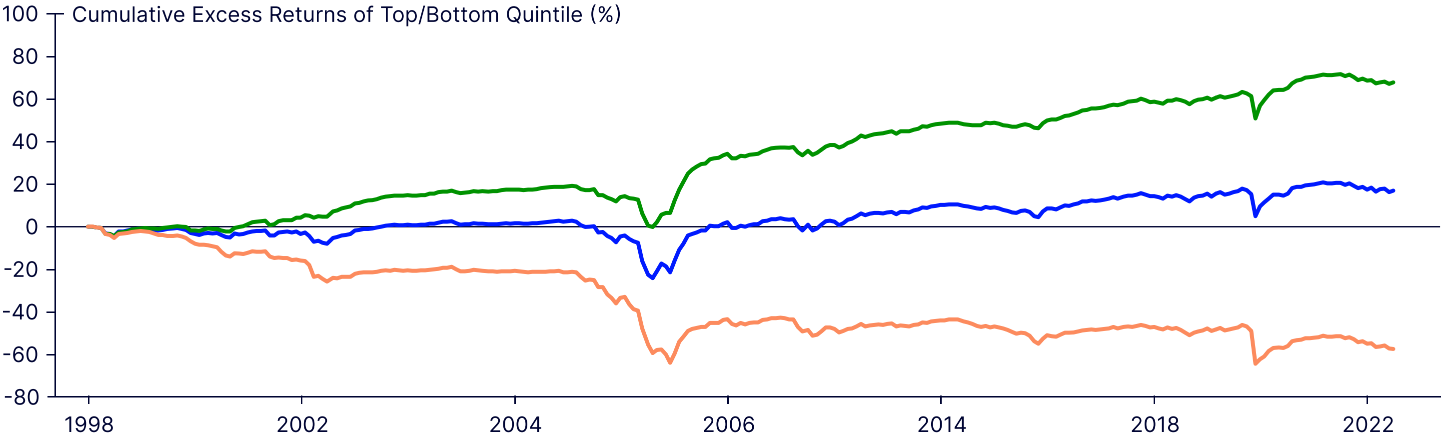
These constraints ensure portfolio alignment to client investment guidelines as well as to the various exposures and allocations of the reference benchmark, so that factor-based security selection—and not structural differences from the benchmark—is the key driver of excess returns (Figure 3).

Figure 3: Alpha factors that drive credit returns: Owning high-scoring bonds, avoiding low-scoring, can lead to outperformance

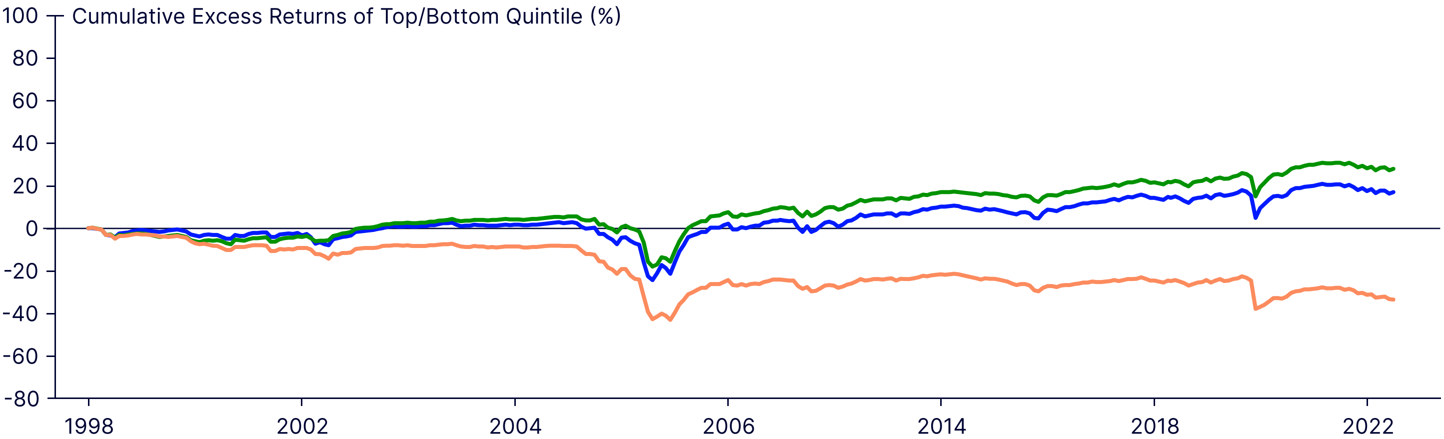
Relative value signal: Designed to identify mispriced bonds after accounting for fundamentals



Equity-bond momentum signal: Uses lead-lag relationship between equity and credit returns



Sentiment signal: Helps avoid/screen out issuers actively shorted by equity investors



US IG Index   High-scoring (own)   Low-scoring (avoid)

Source: Barclays QPS Research. Each chart reports the cumulative excess return over duration-matched Treasuries of Bloomberg US IG Corporate Bond Index together with two tilted portfolios subject to concentration limits as well as risk characteristics (e.g. Duration, DTS, Industry Sector and Rating Allocation) close to the index. The portfolios implement positive or negative tilts on individual factors: Relative Value, Momentum or Sentiment. Turnover is not controlled and transaction costs are ignored. The information contained above is for illustrative purposes only. Past performance is not a reliable indicator of future performance.

3. Delivering efficient implementation

A well-constructed and optimally tilted model portfolio must also be implemented very carefully and cost-effectively. Efficient trade execution is therefore vital to ensure that the Strategy's expected excess returns are captured, and that any return drag from transaction costs is minimized. At State Street Investment Management, we have over $660 billion in indexed fixed income assets3 where tight risk management and efficient execution are the cornerstones of our success. Our portfolio managers and specialist credit traders are at the cutting edge of market developments in trading that are driving down transaction costs and driving up the reliability of our execution.

Recent improvements in market transparency and bond-level pricing data are underpinning our ability to keep transaction costs as low as possible, and therefore are paving the way for systematic credit strategies in particular. Portfolio managers collaborate with traders to buy and sell bonds with minimal slippage versus the optimizer prices. Given the variable and day-dependent liquidity of the corporate bond market, bond substitutions are often necessary to maintain the portfolio's optimized factor at the lowest transaction costs. These substitutions are monitored and controlled for impacts on sector, rating, duration and factor exposures to ensure that the portfolio maximizes overall factor exposure efficiently.

In short, low-cost execution and ongoing portfolio adjustments are essential to ensure that the realized performance stays true to the Strategy's theoretical potential, making the model-to-market translation reliable and efficient.

4. Continuous rebalancing

Our systematic strategies adjust continuously and dynamically to changing market conditions and factor scores, while also staying aligned with the key risk dimensions of their benchmarks. To prevent performance drag from excessive turnover, each rebalancing starts with the prior portfolio as a baseline and limits trades to only those necessary to maintain alignment, control risk, and maximize factor scores.

In practice, this means that rebalancing transactions are kept to the minimum necessary to maintain target exposures (e.g. duration, credit quality, sector), while tilting toward high-alpha signals. While there is a target turnover level for long-term guidance, our process incorporates a cost-benefit analysis that will justify more trades when the alpha potential is high relative to costs, and less when it is low.

This disciplined cost-conscious approach ensures the portfolio maintains high factor scores, remains within predefined risk parameters, and adapts to new opportunities, all while avoiding unnecessary trading costs and tracking error.

Incorporating sustainability considerations

The goal of the strategy: To deliver alpha while also incorporating sustainability objectives.

Our sustainable investing capabilities and solutions are driven by our commitment to support clients on their unique investing journeys. We partner with clients to help them achieve their specific investment and sustainability objectives through thoughtfully constructed strategies and products. Our sustainable investing capabilities and strategies are based on our deep investment expertise, research-based rigor, proprietary tools and comprehensive reporting, giving investors the range of choices and information they require to achieve their goals and invest sustainably—with confidence.

Sustainability governance & oversight

The Strategy leverages State Street Investment Management's wide range of sustainability datasets, metrics, tools and indicators to power quantitative scoring models and reports. We have built a robust infrastructure of processes and standardized systems to oversee data quality controls and model deployment.

The Sustainability Investment Research and Data team work closely with the Information Technology team to maintain, update and oversee all sustainability data that is stored in the firm's centralized research database.

Integrating sustainability objectives into our systematic strategies

Our systematic strategies are open architecture, and therefore a broad array of sustainability signals can be easily integrated and the framework's flexibility allows it to further customize inputs and signals if necessary. For example, customization may include the addition/removal of a sustainability signal, the changing of a data source, or the adjustment of the target applied relative to the benchmark. Our multi-source data architecture, along with our own insights in the field of sustainable investing, give us flexibility in data application and the ability to provide our clients with sustainable investing goals with a wide range of investment solutions.

Many investors are exploring ways to improve their portfolio's carbon profile and reduce climate risk, all while keeping risk and return characteristics representative and aligned to their strategic benchmarks. As an example, the SAFI Climate Strategy is designed for investors seeking to manage the risks and opportunities related to climate change and the transition to a low-carbon economy. Investors in this strategy may also be seeking to avoid companies that do not meet international norms in relation to environmental protection, human rights, labor standards,anti-corruption, controversial weapons and tobacco. The SAFI Climate Strategy aims to achieve the objectives detailed in Figure 4, relative to the benchmark.

Figure 4: The SAFI climate framework considers environmental risks and opportunities

Metric	Purpose	Target relative to the benchmark
GHG intensity CO_2e emissions per $M revenues	A measure that considers a company's carbon emissions in relation to its output.	↓≥50%*
Fossil fuel reserves Embedded CO_2e emissions ($MtCO_2$)	Connects a company's operations to the risks of stranded assets and associated potential write offs.	↓ ≥75%
Brown revenues % revenues from fossil fuel-related activities	Exposure to activities associated with the extraction and direct use of fossil fuel sources, as well as supporting activities.	↓ ≥75%
Carbon risk rating Score on climate preparedness	A bottom-up measure assessing climate risks and opportunities including carbon footprint, and the management of industry-specific carbon risks.	Remove bonds scored 24 or lower (Climate Laggards).
Sustainability risks 1. UN Global Compact 2. Controversial Weapons 3. Severe Controversies 4. Thermal Coal 5. Arctic Oil and Gas 6. Oil Sands 7. Tobacco 8. Civilian Firearms	Norms-based, controversy risk and controversial product involvement screening. Sustainable Investment (according to Sustainable Finance Disclosure Regulation, or SFDR, criteria) monitoring.	↓ 100% for controversy and product involvement where data is available. A minimum of 25% for Sustainable Investments.
Green labelled bond Bonds which qualify as green according to the Climate Bonds Initiative Taxonomy	Increase the share of investments into projects with specific environmental objectives.	↑ ≥1.5x†

Source: State Street Investment Management as of December 31, 2024.
* The framework applies "zeros" for carbon intensity, brown revenue and fossil fuel reserves metrics associated for bonds identified as green bonds.
† Once the strategy exposure to Green Bonds reaches 35%, the increase signal will be on a diminishing scale reaching 1 with Green bond weight at or above 35% of the index. The above targets are based on certain assumptions and analysis made by State Street Investment Management. There is no guarantee that the targets will be achieved. The portfolio is monitored against the targets on the rebalance dates and the portfolio may therefore deviate from the targets between the rebalance dates. State Street Investment Management reserves the rights to modify the targets.

All our investment strategies rely on relevant and high-quality data, and climate strategies are no different. Our open architecture also enables us to source the most appropriate available data. For the standard framework, we have selected the following data providers for the Sustainable Climate Corporate Bond Strategy:

- MSCI and ISS ESG for climate-related data
- Climate Bonds Initiative for green bonds
- R-Factor™ for the sustainability rating, based on the Sustainability Accounting Standards Board sustainability risk materiality framework
- Sustainalytics and MSCI for product and controversy involvement of the following exclusion criteria: controversial weapons, United Nations Global Compact violations, thermal coal, arctic drilling, oil and tar sands, severe controversies, tobacco and civilian firearms

For investors with specific climate-related metrics or customization requirements, we offer tailored solutions through separately managed accounts. To explore custom implementations and see detailed fixed income case studies, download The Climate Files, or contact your State Street Investment Management representative.

Monitoring and reporting

We continuously track portfolio sustainability signals, and outcomes are captured in comprehensive reports for investors (available monthly). This includes sustainability enhancement reports, which allow clients to compare their portfolios' sustainability profiles against standard benchmarks. State Street Investment Management can also produce customized sustainability reports tailored to individual client needs or regulatory reporting requirements, aligning data and analytics with each client's specific framework. These monitoring and reporting practices are fully aligned with SAFI's rules-based and data driven methodology and risk management principles, ensuring sustainability integration is disciplined and risk-aware throughout the whole fixed income investment process.

Key benefits of SAFI

For prospective investors, SAFI offers several compelling advantages:

- **Strong alpha potential:** Systematic application of proven signals has demonstrated strong and consistent excess returns over benchmarks with relatively low risk usage, leading to high information ratios.
- **Diversification:** The demonstrated low correlation of active returns from our systematic credit strategies with traditional fundamental active credit strategies offers attractive diversification benefits, while maintaining the risk characteristics of the benchmark index.
- **Transparent, disciplined orocess:** The rules-based methodology provides consistency in security selection decisions that can be applied at scale across broad investment universes.
- **Reduced human bias:** By relying on data-driven insights, systematic approaches remain objective and transparent, and avoids the influence of emotional or cognitive biases in investment decisions.
- **Sustainability integration:** Incorporating sustainability aligns investment decision-making with sustainability goals, appealing to investors with sustainability objectives.

Our systematic credit strategies represent a relatively new and sophisticated investment approach that is built upon quantitative rigor that can also integrate sustainable investment practices. By embracing the transparency of the approach, the diversification benefits of the results, along with the integration of sustainability, SAFI offers a compelling proposition for investors seeking to invest actively and responsibly in their fixed income portfolios today.

Endnotes

1 The scores are on a scale of 1–10, where 10 is the most attractive and 1 is the least attractive. The combined score is a weighted average score of the three signals. Thus, every bond will have a combined score from 3 to 30.

2 We use the Trade Efficiency Score (TES), which is a Barclays-produced indicator of liquidity that combines Barclays Liquidity Cost Scores (LCS) and trading volumes into a single relative score from 1–10. The TES reflects cost and flow. LCS is a widely used liquidity model in the investment industry, representing a bond-level transaction cost expressed as a percent of a bond's price. It measures the cost of an immediate, institutional-size, round-trip transaction. Bonds with higher trading volume and lower LCS per unit of duration have lower TES.

3 State Street Investment Management as of December 31, 2024. Sustainable assets not included in total AUM count.

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* This figure is presented as of June 30, 2025 and includes ETF AUM of $1,689.83 billion USD of which approximately $116.05 billion USD in gold 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 Investment Management are affiliated. Please note all AUM is unaudited.

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ID3417150-7781184.3.1.GBL.INST 1125 Exp. Date: 03/31/2026