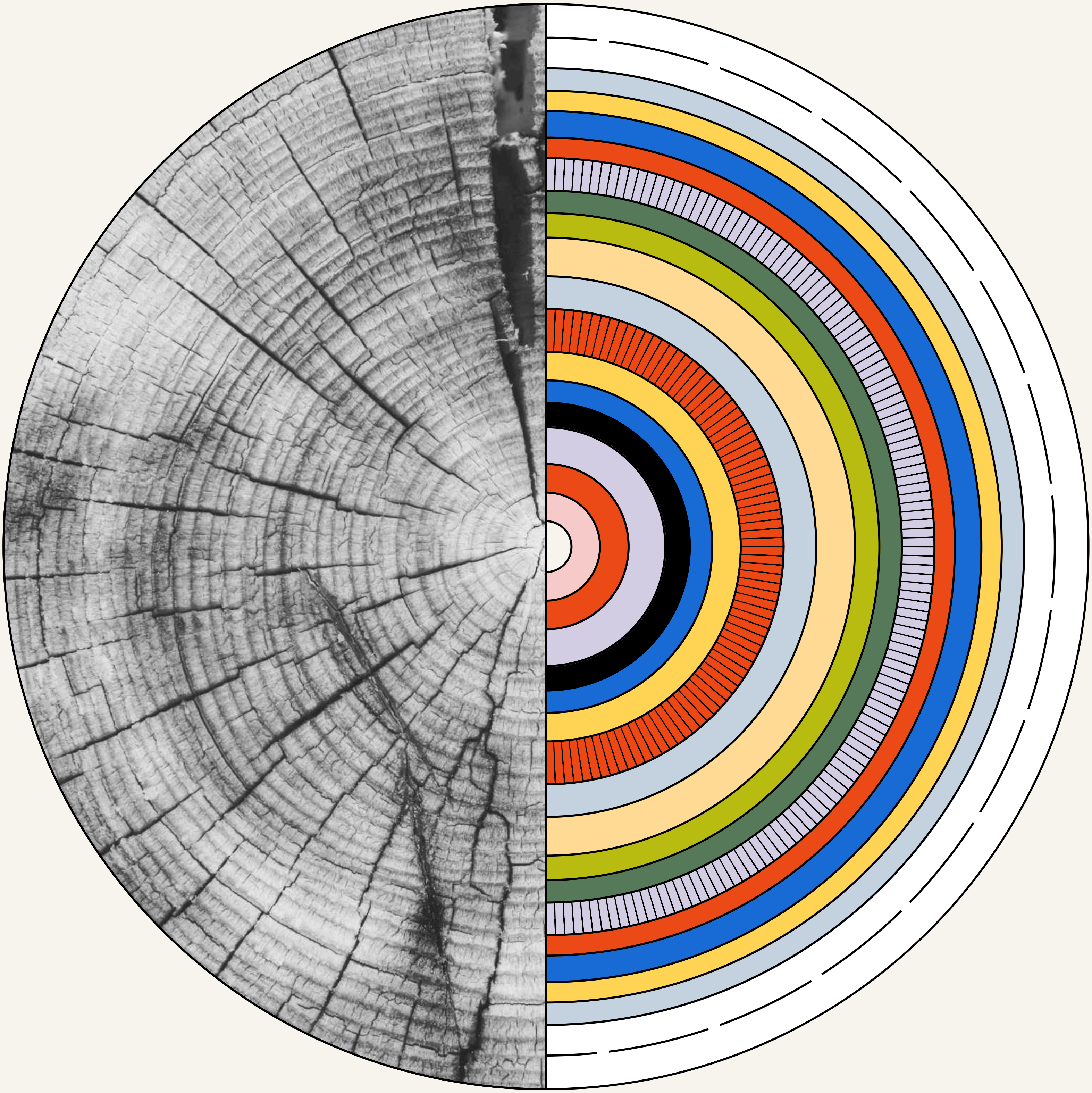
UNLOCKING ALPHA:

A Data-Driven Approach to Social Factor Analysis



APM Social Investment Solutions

Published May 2025

For more than 20 years,

Advanced Portfolio Management (APM) has specialized in designing and managing customized investment solutions for institutional investors. APM portfolios are built and managed to complement, enhance, hedge, or complete a benchmark asset allocation or existing investment strategy. The firm applies a robust mix of analytical and quantitative methods, including factor-based return and risk attribution analysis, a forward-looking shortfall risk framework for portfolio construction, and dynamic risk management tools spanning a range of financial metrics.

In 2009, APM's founder, Robert Kiernan, became a Senior Fellow at the Harvard Kennedy School of Government with a mandate to research the then nascent but growing field of Environmental, Social, and Governance (ESG) investing. Initially skeptical, he spent three years analyzing the empirical data, the investment cashflows, and the existing academic research on socially responsible investing (SRI) and corporate social responsibility (CSR).

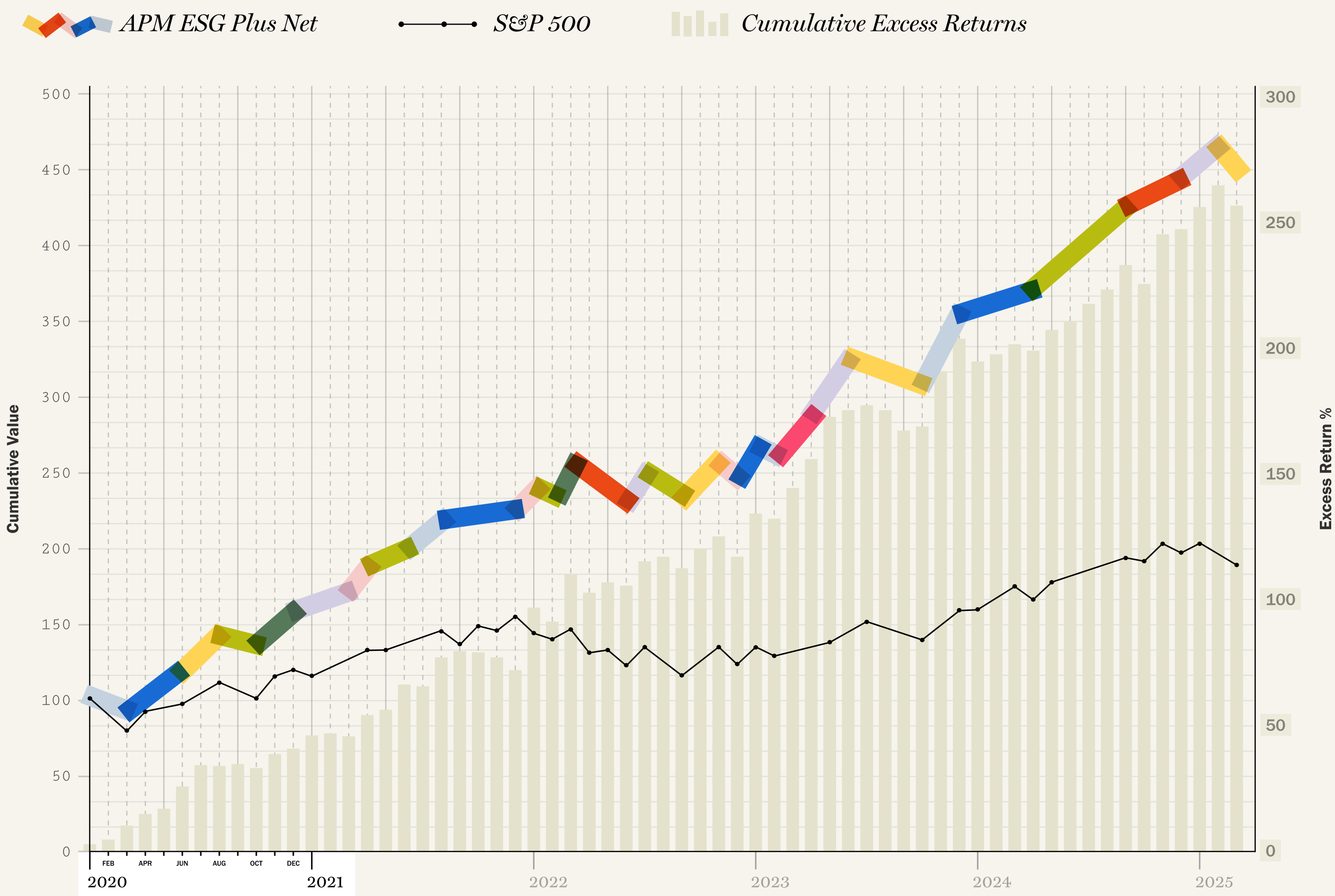
The conclusion? ESG wasn't just a trend—it was an opportunity. He became convinced that **integrating certain ESG factors, particularly social factors, into an actively managed strategy could potentially improve risk-adjusted returns.**

With this conviction, Kiernan leveraged APM's quantitative expertise to launch the ESG Plus strategy in 2018. This long-only systematic strategy invests within the ESG benchmark universe and focuses on alpha signals from bottom-up security information. The strategy identifies medium-term market leaders with strong ESG commitments that are driven by fundamental strength, recognized by investor sentiment, and validated by market trends. The strategy also integrates ESG data with a proprietary suite of signals to refine model forecasts, supported by a custom framework for portfolio optimization and risk management. It remains agnostic to common market factors with low attribution to traditional equity factors. APM ESG Plus offers an enhanced index solution, providing ESG exposure with the potential for incremental excess returns over traditional ESG indices.

Building on this success, APM expanded its commitment to this opportunity by welcoming Phyllis Kurlander Costanza as APM's Chief Social Investment Officer. Costanza's experience in social finance and wealth management, including serving as a founding Board Member and executive at the Children's Investment Fund Foundation, and then as the Global Head of Social Impact at UBS and CEO of UBS Optimus Foundation for more than a decade, makes her the ideal leader to launch **APM Social Investment Solutions (SIS)**, a dedicated division focused on developing social factor research and applying that research to investment management. SIS is designed to fill critical gaps in the measurement, assessment, and reporting of social performance, and integrate those new variables into investment management generally, and investment products more specifically.

"The conclusion? ESG wasn't just a trend — it was an opportunity."

ESG Plus Net Performance Compared to S&P 500



**For illustrative purposes only.*

*Any trends depicted or described above may not continue. Please refer to the Investment Management Agreement for a complete description of terms. **Parts of the historical performance statistics are calculated by backtesting and therefore hypothetical and no representation is being made that any portfolio did, will, or is likely to achieve performance statistics similar to those shown in this presentation.** Please read the complete disclaimer on page 39.

1 Introducing Social Investment Solutions: Unlocking Social Factor Materiality

We believe that **certain social factors contain information that is related to financial performance**. This belief led to the launch of Social Investment Solutions (SIS), a dedicated business line within APM whose objective is to research, develop, and apply social factors to portfolio construction and investment management with the objective of enhancing risk-adjusted returns.

DEFINITION

Defining 'Social'

Social factors refer to the criteria used to evaluate how a company impacts its employees, customers, suppliers, distributors, and local communities. These factors help identify both risks and opportunities that affect financial performance.

The key social dimensions we consider include issues like labor practices, human rights, diversity and inclusion, product quality and safety, and community engagement. These are elaborated in further detail in Section 5.1. below.

These social factors are dynamic, evolving as companies respond to shifting regulatory, consumer, and market expectations. By evaluating a company's ability to manage these social risks, our research opens insights into long-term financial performance, resilience, profitability, and expected shareholder value.

While traditional ESG frameworks have looked at corporate data across environmental, social, and governance factors, investors agree that the social dimension of ESG remains the most difficult to understand. The social dimension of ESG remains under-researched, under-developed, and under-utilized despite its clear impact on corporate performance.

This gap is evident in the lack of investment products that offer socially conscious investors exposure to large-cap equities committed to responsible stakeholder engagement. To address this, we have developed a set of social factors using a rigorous, data-driven, and dynamic methodology designed to standardize social factor measurement while enhancing risk-adjusted returns for both socially driven and traditional investment strategies.

Leveraging this research, SIS has developed a Social Intelligence Index (see Section 6.1 below) around which a suite of investment solutions can be developed and managed.

This paper details our approach (and, in particular, the taxonomy, scoring, and rules that comprise the Social Intelligence Index) which allows investors to integrate social and financial variables in a single risk-return profile.

The Missing Piece in ESG Investing: A Dedicated and Dynamic Social Investment Strategy

ESG investment products incorporate Environmental, Social, and Governance (ESG) factors into portfolio construction, offering a framework for sustainability across asset classes, geographies, and investment styles. Products have emerged and matured across each pillar, with environmental-focused strategies leading in breadth and depth—spanning themes such as climate transition, clean energy, and resource efficiency. Governance-focused approaches are less common but foundational, supporting long-term accountability and policy execution across both environmental and social issues.

The social dimension, however, remains under-explored. While a number of investment products address individual themes such as equity, well-being, or socially positive revenue streams like neuroscience-related products or services, many 'social' funds use social metrics as screens, rather than fully incorporating them into portfolio construction. Additionally, social factors are often qualitative, inconsistently reported, and deeply context-specific—making them harder to assess systematically and to link directly with financial outcomes. As a result, many socially focused strategies remain relatively static, even though stakeholder priorities and reputational risks can shift rapidly with social, political, and economic change.

The SIS Social Intelligence Index addresses these challenges by offering a dedicated, data-driven approach to identifying companies that lead on material social factors. The methodology incorporates adaptive and factor-agnostic weighting, frequent rebalancing based on current data, and AI-enabled structuring and scoring of qualitative data to ensure that current social information is fully integrated into security selection and portfolio design. SIS offers socially conscious investors a way to confidently **align capital with companies that prioritize material social factors that ultimately result in superior financial performance.**

2 The Challenges of ESG and Why Social Factors Are Overlooked

Through our own proprietary research and portfolio construction exercises at APM, we have encountered significant challenges in identifying, measuring, and integrating social factors into investment strategies. Amongst each of the ESG pillars, it became clear early on that **social data was the least developed, least standardized, and most difficult to systematically access and apply to investment solutions.**

Our experience confirms a broader issue across the investment industry. While 88% of ESG investors rely on rating agency scores to construct and manage funds, there is little agreement on how ESG should be measured. (1) Highlighting the inconsistencies in ESG rating assessments, the correlation between ESG ratings across major ESG rating agencies is just 0.54, a stark contrast to the 0.92 correlation among credit rating agencies assessing the credit scores of the universe of borrowers in the public lending markets. (2)

Even within ESG-focused funds, social factors remain under-utilized. The Global Reporting Initiative (GRI), a leading ESG reporting framework, highlights this gap: only 14% of its social metrics are empirically robust to be helpful for consistent use in investment decisions compared to 97% of environmental metrics and 80% of governance metrics. (3) Given this imbalance, it's no surprise that most investors view social factors as the most difficult to integrate into their strategies.

Why? Because social values are inherently subjective. While some socially conscious investors may prioritize strong human rights practices, others may focus on diversity, equity and inclusion, labor rights, or data privacy. These are all important dimensions of corporate social performance. (4)

"Social values are inherently subjective."

However, codifying social factors faces multiple challenges. Corporate disclosures will remain inconsistent due to their voluntary nature and selectively adopted reporting guidelines. Scoring will remain subjective—each asset manager, rating agency, and investor will have slightly different perspectives for what it means to be socially responsible or to optimize for a double bottom line. As such, criteria, weighting and scoring methodologies will be aligned to unique priorities rather than to a standardized definition of social responsibility.

It has taken years of working groups, regulatory initiatives, and industry collaboration to establish a standardized definition and measurement framework for environmental factors. Achieving the same level of consensus for social performance will require a similar effort—one that accounts for the complexity and evolving nature of stakeholder expectations.

Beyond these structural challenges, social factors face additional hurdles due to the way social factors are currently measured and scored, further complicating their integration into investment decision-making.

1 David F. Larcker, Lukasz Pomorski, Brian Tayan, and Edward Watts, "ESG Ratings: A Compass Without Direction," Rock Center for Corporate Governance at Stanford University Working Paper Forthcoming, August 2, 2022

2 Florian Berg, Julian F. Koelbel, and Roberto Rigobon, "Aggregate Confusion: The Divergence of ESG Ratings," Review of Finance 26, no. 6 (November 2022): 1315-1344, https://doi.org/10.1093/rof/rfac033

3 Deutsche Bank Wealth Management, "Exploring the E, S, and G in ESG," CIO Special, December 2022, https://www.deutschewealth.com/dam/deutschewealth/cio-perspectives/cio-special-assets/exploring-the-e-s-and-g-in-esg/CIO-Special-ESG-Exploring-the-E-S-and-G-in-ESG.pdf

4 BNP Paribas, "The ESG Global Survey 2019," April 2019, https://securities.cib.bnpparibas/app/uploads/sites/3/2019/08/esg-global-survey-en-2019.pdf.

Why Social Factors Don't Fit into the Traditional Approach to ESG

1. Scarcity in Social Data

The lack of standardized social data presents a significant challenge incorporating social factors into traditional ESG approaches. Despite increased regulatory attention, social factor reporting is most often voluntary, inconsistent, and typically reported annually, with businesses using different templates and standards to report on their activities. This inconsistency and infrequency make it challenging to draw meaningful conclusions and compare performance across companies or industries. As a result, investors often rely on inferential methods, introducing further subjectivity into an already fragmented and empirically murky landscape.

2. Unstructured Social Data

The qualitative nature of social data presents a challenge for traditional ESG integration, as it lacks the quantifiable metrics common in environmental and governance factors. Social factors—such as human rights, labor practices, community relations, and diversity and inclusion—are often difficult to measure, compare, and standardize, relying on subjective assessments that vary across frameworks. If qualitative data is scored for analytical purposes, human analysts are responsible for scoring and the process is vulnerable to poor quality control and change management.

3. Evolving Materiality Weights

Social factors are particularly susceptible to shifting trends in public sentiment, political dynamics, and regulatory regimes. A company once praised for its diversity initiatives or sustainability commitments may later face backlash and heightened regulatory scrutiny. Unlike environmental risks, which are largely scientific and long-term in nature, social materiality is nonstationary and can change dramatically over short periods making it difficult to build stable, long-term methodologies without accounting for such shorter-term dynamism. Traditional rating agencies employ hundreds, if not thousands, of analysts to inform their ESG scores. The training for these staff alone inhibits their ability to dynamically evolve methodologies to reflect changes in social materiality.

Conclusion

The challenges of integrating social factors into ESG stem from unstable materiality, inconsistent data, and qualitative measurement, making standardization and objectivity difficult. However, subjectivity is not a flaw if the methodology is transparent and understood and optimization is clearly communicated, allowing investors to incorporate social insights confidently to realize superior financial returns.

Case Studies on the Evolving Financial Materiality of Social Factors
Social factors are not static—they evolve alongside economic conditions, regulatory changes, and shifts in public sentiment.

Below we highlight three critical moments in recent history that demonstrate how social factor financial materiality varies over time, ultimately influencing corporate behavior and investor decision-making.

CASE STUDY #1

The 2008 Financial Crisis and Corporate Social Responsibility (CSR) in Banking [5]

A 2016 study by Cornett, Erhemjamts, and Tehranian found that Corporate Social Responsibility (CSR) became a key financial differentiator for U.S. commercial banks after the 2008 financial crisis. Before the crisis, banks that engaged in CSR saw only modest financial benefits, while those that did not faced no significant penalties. However, after 2008, the financial impact of CSR became much more pronounced.

The study found that banks with higher CSR scores, measured by an ESG Index that accounts for both strengths and weaknesses, achieved a 6.60% higher return on equity (ROE) compared to banks with lower CSR scores, a substantial increase from the pre-crisis difference of 2.64%. Additionally, banks that excelled specifically in CSR strength saw a 4.93% post-crisis increase in ROE, highlighting that proactive social engagement became a meaningful driver of financial performance.

This shift was largely driven by changing consumer sentiment. In the wake of the crisis, trust and ethical business practices became critical competitive advantages. Banks with strong CSR commitments retained more customers and demonstrated greater operational resilience. The study also found that banks serving low-income communities that expanded CSR initiatives post-crisis experienced stronger financial performance, reinforcing the material value of social engagement. These findings illustrate how external shocks can amplify the financial relevance of social factors, strengthening the link between corporate social responsibility and long-term market outcomes.

5 Marcia Millon Cornett, Otgontsetseg Erhemjamts, and Hassan Tehranian, "Greed or Good Deeds: An Examination of the Relation Between Corporate Social Responsibility and the Financial Performance of U.S. Commercial Banks Around the Financial Crisis," Journal of Banking & Finance 70 (November 2016): 137-159.

CASE STUDY #2

The COVID-19 Pandemic and Social Factor Resilience in Healthcare [6]

Fast forward to 2020, when the COVID-19 pandemic disrupted economies and markets worldwide. A 2024 study by Hsu and Huang found that while ESG stocks did not consistently outperform during the crisis, social factors played a critical role in healthcare sector resilience. Healthcare companies with strong social policies, such as workplace safety, fair compensation, and employee well-being, were better positioned to weather the crisis, experiencing less severe stock price declines. In fact, firms with social scores above 67, which the authors derive from Thomson Reuters' MarketPsych Refinitiv ESG database—were able to offset negative stock impacts, highlighting how investors recognized the financial relevance of strong social practices in times of uncertainty. Why? The extreme stress on the healthcare system highlighted the importance of workplace well-being to investors as related factors were seen as a key financial risk. This highlights how social materiality rapidly became relevant in response to external shock, and how materiality was sector-focused.

6 Tzu-Jo Hsu and Alex YiHou Huang, "On the Resilience of US ESG Stocks: Evidences from the COVID-19 Market Crashes," Economics Letters 235 (February 2024): 111532, https://doi.org/10.1016/j.econlet.2024.111532.

"...social materiality rapidly became relevant in response to external shock..."

Racial Equity and Corporate Accountability[7]

Beyond financial crises and public health emergencies, social movements have profoundly influenced financial materiality. The murder of George Floyd in 2020 amplified awareness of police brutality against Black Americans, sparking widespread activism and prompting corporations to publicly commit to racial justice and DEI initiatives.

In 2023, a study by Balakrishnan, Copat, De Laparra, and Ramesh analyzed the stock market reactions to corporate racial diversity exposure in the wake of these events. Corporations with significant racial diversity exposure, meaning they were exposed to discussions and issues related to racial diversity (as identified in conference call transcripts), experienced a 0.7% decline, while passive statements led to even larger drops. However, companies that took tangible DEI actions, such as appointing Black board members, saw positive stock reactions (+1.7%). This underscores how investors rewarded meaningful action and penalized superficial statements.

Contrast this 2023 study with the current backlash against DEI. While it's too soon to tell whether this change will impact corporate financial performance, this moment highlights the cyclical nature of social materiality. What was financially beneficial in 2020 may now be considered a material risk in 2025.

Pivotal moments, such as the Global Financial Crisis, COVID-19, and the social movement triggered by the murder of George Floyd, demonstrate that the materiality of social factors is not stationary. Materiality shifts alongside changing economic, social, and regulatory forces, acting as a barometer for social sentiments and financial risks.

7 Karthik Balakrishnan, Rafael Copat, Daniela de la Parra, and K. Ramesh, "Racial Diversity Exposure and Firm Responses Following the Murder of George Floyd," Journal of Accounting Research 61, no. 2 (May 2023): 489-529, https://doi.org/10.1111/1475-679X.12484.

3 Building on the Academic Research

These challenges notwithstanding, academic research has demonstrated that **social factors are both measurable and financially material**. The evidence extends beyond a single industry or region and covers a variety of social factors that impact financial performance.

One of the early examples of this research was Alex Edmans' 2011 study which examined the financial performance of companies with strong employee satisfaction, as measured by their inclusion in the Forbes "100 Best Companies to Work For" over a period of 25 years. After controlling for a number of other potential explanatory variables, Edmans found that inclusion on the list generated an annual Carhart four-factor alpha of 3.5% and 2.1% when compared to industry-matched benchmarks. [8]

A more recent paper by Aaron Yoon and Kyle Welch used Glassdoor employee ratings of managers to create a cohort of high- and low-performing managers and then examined the shareholder value created by the ESG initiatives of each cohort. Their results, again carefully controlled, showed that the initiatives of the high-performing managers created shareholder value, represented by stock price returns. High-performing managers' initiatives outperformed low-performing managers' initiatives by 6.64% annually. [9]

Moreover, when decomposing the E, S and G in their regression analysis, Yoon and Welsh find that "our results are driven by social investments. We interpret this result to mean that senior managers' ability plays a key role in investments that are subjective. While environmental issues such as carbon emission and governance issues such as the number of independent directors are more concrete, social issues such as diversity and equality require more discretion." [10]

Finally, a 2023 paper by Harison Hong and Edward Shore entitled "Corporate Social Responsibility" is noteworthy. Hong and Shore attempt to answer the question: "[i]s shareholder interest in corporate social responsibility driven by pecuniary motives (abnormal rates of return) or non-pecuniary ones (willingness to sacrifice returns to address various firm externalities)?" While developing their seven-part test to answer this question, the authors provide a superb literature review that covers, inter alia, the cost of capital for CSR responsible firms and CSR irresponsible firms.

The literature review shows that CSR responsible firms have a lower cost of capital, and thereby lower financial returns to investors purchasing their securities, than CSR irresponsible firms. [11] These results notwithstanding, Hong and Shore find that, "the literature generally finds evidence consistent with the hypothesis that shareholders are driven by non-pecuniary motives..." when they invest in firms that are committed to ESG even though they understand they will receive a concessionary return. While they do not acknowledge it, their findings support the core hypothesis of Gary Becker's 1957 landmark study, *The Economics of Discrimination*, which first sought to integrate the notion of non-pecuniary motivations into neo-classical economics. The authors also argue that further research into the concept of 'greeniums' or the private provision of public goods is warranted to fully understand and explain private sector "willingness to pay" for public goods. [12]

Conclusion

This research reinforces a key point: social data is not only measurable but also financially significant. However, the full potential of social factor investing is largely untapped. The challenge we have addressed with SIS is that of scaling the retrieval and structuring of data to systematically integrate social factor performance into investment models, ensuring that these insights are actionable for investors.

8

Alex Edmans, "Does the Stock Market Fully Value Intangibles? Employee Satisfaction and Equity Prices," Journal of Financial Economics 101, no. 3 (September 2011): 621-640, https://doi.org/10.1016/j.jfineco.2011.03.021.

9

Kyle Welch and Aaron Yoon, "Do High-Ability Managers Choose ESG Projects that Create Shareholder Value? Evidence from Employee Opinions," Review of Accounting Studies 28, no. 5 (November 2023): 2448-2475, https://doi.org/10.1007/s11142-022-09701-4.

10

Ibid

11 *Footnote*

The literature review reveals one exception, a paper by Khan, Serafeim, and Yoon [Khan, M., Serafeim, G., & Yoon, A. (2016). Corporate sustainability: First evidence on materiality. Accounting Review, 91(6), 1697-1724] which, when adjusting ESG investments by SASB materiality weights found a significant financial outperformance. While the SASB materiality weights are static, the paper underscores our differentiated focus on the dynamic nature of materiality in our taxonomy and our portfolio construction and portfolio rebalancing of the Social Intelligence Index.

12

Harrison G. Hong and Edward P. Shore, "Corporate Social Responsibility," Annual Review of Financial Economics 15 (December 2023): 395-417, https://doi.org/10.1146/annurev-financial-051222-015710.

4 Why Now is the Time

Social factor analysis is poised for a major transformation in investment management, driven by three converging forces: technological advancements, increasing investor demand, and expanded ESG-related disclosures. These three long-term trends present a unique opportunity to develop more rigorous, empirically grounded investment strategies and products that systematically employ social factors—bringing them to the same level of sophistication as environmental and governance factors. Let's examine each in turn.

①

Technological Advancements Unlocking Deeper Insights

The rise of artificial intelligence (AI) and large language models (LLMs) has revolutionized our ability to analyze unstructured data at scale. Given the unstructured and often subjective nature of social factor information, these advancements allow us to move beyond traditional company disclosures and incorporate alternative data sources, offering a more comprehensive, real-time view of corporate behavior and social factor impact.

AI-driven analysis also enables greater flexibility and responsiveness. Rather than relying on static methodologies that require extensive manual adjustments, machine learning allows us to dynamically refine grading criteria in real-time. This agility enhances our ability to capture emerging risks and opportunities, ensuring that social factor assessments remain relevant as conditions unfold.

②

Growing Demand for Sustainable Investment Strategies

Despite political headwinds, investor demand for sustainable investments remains strong. According to the US Sustainable Investment Forum (Dec 2024), **73% of investors surveyed expect a significant growth in the sustainable investment market** as a result of increasing client demand, regulatory evolution, and advances in data analytics. [13]

Today, one in five investable assets incorporate a sustainability or impact lens, showing that the demand for responsible investing is not just a short-term trend but a fundamental shift in capital markets. [14]

Even in the face of skepticism, institutional investors continue to integrate ESG considerations into their decision-making, recognizing their material impact on risk-adjusted returns. [15]

13 US SIF (Sustainable Investment Forum) Foundation. (2024). US Sustainable Investing Trends 2024/2025 Report. US SIF: The Forum for Sustainable and Responsible Investment.

14 State Street Global Advisors, "Global Market Portfolio 2024," October 18, 2024, https://www.ssga.com/us/en/institutional/insights/global-market-portfolio-2024.

15 Hong and Shore, "Corporate Social Responsibility," 395–417.

> "Today, one in five investable assets incorporate a sustainability or impact lens."

③

Expanding ESG-Related Disclosures and Regulatory Momentum

Regulators worldwide are increasing transparency requirements to combat greenwashing and cause-washing, pushing companies to disclose more granular data on social factors. In the EU alone, major regulatory developments are reshaping ESG reporting:

- MAR 2021
  Sustainable Finance Disclosure Regulation (SFDR): Requires financial market participants to integrate ESG risks and opportunities, including social impact, into investment product disclosures.
- JAN 2023
  Corporate Sustainability Reporting Directive (CSRD): Expands the number of companies required to disclose sustainability metrics, including social factors, with reporting beginning in 2025.
- JUL 2024
  Corporate Sustainability Due Diligence Directive (CSDDD): Mandates financial entities to verify social conditions in their operations and supply chains, extending due diligence requirements to client activities over time.
- PLANNED
  Proposed EU Social Taxonomy: Aims to define socially sustainable activities, providing clearer guidance on social issues.

Beyond regulatory initiatives, **98% of S&P 500 companies already report on ESG information** (including social factors) [16], signaling that sustainability reporting has become an industry norm. While specific metrics are often voluntary, the widespread adoption of sustainability reporting presents an opportunity to systematically structure and assess social factors, further solidifying their place in mainstream financial analysis.

Conclusion

The convergence of technology, a growing demand for socially responsible investments, and expanded disclosures made it timely for APM to launch SIS and its social factor research in 2025.

By leveraging machine learning and LLMs around a dynamic, adaptive taxonomy, we have produced an empirical solution that successfully overcomes the traditional obstacles that have previously prevented the full development and application of social factors in investment decision-making including unstable materiality, scarcity of standardized data, and qualitative data.

[16] Center for Audit Quality, "S&P 500 and ESG Reporting," January 2024, https://www.thecaq.org/sp-500-and-esg-reporting.

5 How the SIS Solution Works

To bridge the gap between social factor integration and investability, we have developed an empirical social data infrastructure: the SIS Engine. This system is designed to systematically process, structure, and score social data, enabling us to capture financially material insights that traditional ESG frameworks most often overlook.

At its core, **the SIS Engine transforms unstructured social data into investable metrics**, allowing us to measure corporate stakeholder impact with greater precision and adaptability. The engine operates through a series of interdependent modules, each playing a critical role in ensuring data accuracy, relevance, and scalability:

(5.1)

Dynamic Taxonomy

Establishes and continuously evolves a comprehensive framework for defining key social factors, adapting to new data, shifts in market sentiment, and regulatory changes.

(5.2)

Data Collection & Structuring

Aggregates multiple data sources, organizing them into a standardized format aligned with the taxonomy.

(5.3)

News Monitoring

Tracks real-time news, corporate disclosures, and emerging social trends, ensuring that our assessments remain current and reflective of both materiality risks and opportunities.

(5.4)

Scoring Methodology

Applies proprietary methodologies to metric grading, feature selection and engineering, and score composition.

This empirically-grounded method forms the foundation for the Social Intelligence Index and other contemplated passive and actively managed funds built around the Index (discussed further in Section 6).

(5.1)

Dynamic Taxonomy

At the core of the SIS Engine is our Social Factor Taxonomy, a structured framework that defines the quantitative and qualitative social metrics we collect, structure, normalize, and score. This taxonomy is built on a two-part hypothesis:

1. *Companies that deliver strong social factor performance generate higher financial returns; and*
2. *The financial materiality of social factors will evolve over time in response to shifting market dynamics.*

To prove this hypothesis, we have developed a dynamic taxonomy that spans key corporate stakeholders—customers, employees, suppliers and distributors, and communities—while allowing for adaptation as social and financial priorities change.

Recognizing the traditional data limitations of social factor disclosures, our taxonomy is designed to prioritize metrics with the highest likelihood of availability and accuracy. This mitigates some key challenges that arise from:

- **The voluntary nature of social disclosures, leading to temporal gaps in reporting;**
- **The global operations of firms, creating inconsistencies in social data across geographies; and**
- **Supply chain opacity, making it difficult to assess supplier and distributor performance.**

As we develop and evolve the taxonomy, we will explore additional technological and machine learning solutions to address these challenges.

To ensure rigor, we selected metrics based on an extensive review of:

- **More than 20 widely-adopted voluntary reporting frameworks (e.g., GRI, SASB, WEF Stakeholder Capitalism);**
- **Relevant academic research on social performance and financial impact; and**
- **Public databases (e.g., OSHA, NLRB) that provide standardized data sources.**

(5.1)

Dynamic Taxonomy, continued

This process initially identified thousands of metrics. Through an iterative refinement process, assessing each metric based on data availability, social impact, and financial materiality, the taxonomy now consists of about 100 metrics and 19 core indicators across six key areas:

#1 **Human Capital**

- Diversity and Inclusion
- Fair Labor Practices
- Occupational Health and Safety
- Talent Acquisition, Retention, and Development
- Compensation and Benefits

#2 **Product Responsibility**

- Cybersecurity and Data Privacy
- Supply Chain Management
- Responsible Product Development
- Quality, Safety, and Accessibility

#3 **Community Impact**

- Community Engagement and Local Economic Impact

#4 **Governance**

- Corruption, Fraud, and Conflicts of Interest
- Corporate Culture of Social Responsibility and Transparency

#5 **Revenue Segments** [17]

- Digitalization and Productivity
- Financial Services
- Global Health
- Food Security
- Social Connectivity
- Sustainable Transportation
- Water and Sanitation

#6 **News Monitoring**

- Capturing real-time social risks and reputational impacts across all the indicators mentioned above.

[17] *Footnote*

Revenue Definition
Within our revenue-based evaluation, we categorize lines of business that minimize social risk and generate positive social externalities, leveraging research from the United Nations Environment Programme Financial Institutions (UNEP FI). The externalities are evaluated based on supply chain integrity, health and safety, accessibility, affordability, resource availability, equality and justice, and climate/environmental impact.

(5.1)

Dynamic Taxonomy, continued

This carefully designed taxonomy serves as the foundation for social factor analysis, ensuring that we capture and evaluate the most relevant and financially material social indicators in today's market.

This taxonomy incorporates a dynamic mechanism to determine materiality weightings, triggering regular review and adjustments based on the most updated social factor information and financial market data. The increased frequency and granularity of data have enhanced the responsiveness of assessments, providing a more accurate reflection of how corporations are adapting to evolving social and political landscapes. By integrating signals, including revenue impacts and news alerts, in addition to traditional social indicators, this approach enhances materiality assessments by incorporating both internal and external company information while remaining responsive to emerging event risks. As a result, investors can make more informed decisions in real-time, aligning capital allocation with social commitments.

(5.2)

Data Collection and Structuring

The taxonomy and data collection processes are seamlessly integrated, enabling us to capture a comprehensive and structured view of social factor impact on financial performance.

We aggregate data from multiple sources at varying frequencies, including:

Corporate Disclosures
ESG reports, sustainability reports, earnings call transcripts

Financial Filings
SEC reports (10-Ks, 10-Qs, 8-Ks)

Regulatory and Government Databases
NLRB, OSHA, and other agency data

Media & News
Real-time tracking of socially relevant events (see Section 5.3.)

To efficiently manage this diverse dataset, we employ a dual-database approach:

Structured Data (relational database)
Houses numerical metrics that can be directly extracted from third-party sources and news APIs.

Unstructured Data (vector database)
Stores text-based social disclosures from company reports extracted from over 30,000+ underlying files.

Each metric is mapped to its corresponding data source, ensuring a structured one-to-one relationship between taxonomy elements and data inputs. Between the two databases, we have built a dataset of over 300,000 data points for companies in our universe. This dataset will continue to grow with time.

For qualitative data, we define retrieval and grading instructions that enable large language models to extract and score metrics for each company. This process ensures that all metrics are assessed consistently and objectively. This is discussed further in Section 5.4.

(5.3)

News Monitoring

To ensure our assessments remain dynamic, current, and responsive to emerging risks and opportunities, we integrate real-time event monitoring into our taxonomy. The News Monitor continuously tracks large scale media, financial media, industry reports, and regulatory announcements to capture developments that could materially impact a company's short-, medium-, and long-term social factors and financial returns.

Using advanced Natural Language Processing (NLP) techniques, we:

- Identify emerging social risks and opportunities that may not yet be reflected in structured corporate disclosures;
- Analyze sentiment and public perception, providing insight into how stakeholders react to company actions; and
- Associate events with affected companies, enabling sector-wide risk assessments and ensuring that material news is accurately attributed.

By systematically integrating real-time data, we move beyond traditional, static ESG assessments and create a dynamic social factor risk framework that reflects the evolving nature of social factors and their materiality. These insights directly inform our scoring methodology, ensuring that our evaluations capture both historical developments as well as unfolding events.

(5.4)

Scoring Methodology

Once data is collected and structured, we apply a quantitative scoring process to systematically assess each social metric and their cumulative corporate social score.

The scoring methodology converts structured data, unstructured text, and real-time news insights into comparable scores that can be used in investment decision-making. The process includes:

Quantitative Scoring
Aggregates structured numerical data from company disclosures and regulatory reports, applying imputation techniques to address missing values.

Qualitative Scoring
Extracts text-based disclosures and applies contextual grading based on global standards from organizations such as the ILO, the OECD, the UN, and the IFC.

Revenue Scoring
Measures the percentage of company revenue linked to positive social externalities, using NLP to map business segments from financial filings.

News Event Scoring
Applies impact materiality to sentiment scores of companies' real-time social developments, ensuring that significant events influence company-level social scores in proportion to their materiality.

Feature Engineering
Selects the most relevant social metrics based on a combination of literature review and statistical inference and transforms the raw data into features for further quantitative analysis, score composition, and index construction.

By integrating historical corporate data with real-time monitoring, the scoring system captures the full spectrum of social risks and opportunities, creating a forward-looking tool for investors seeking to evaluate material social factors and their impact on financial performance.

CONCLUSION

Leveraging the SIS Financial, Social, and Technological Expertise to Address Social Factor Challenges

CHALLENGE #1

Scarcity in Social Data

SIS APPROACH

SIS combines human-defined methodologies with LLM-driven data structuring to scale impact analysis on a live basis to increase the frequency of data collection and scoring. The SIS Engine extracts and synthesizes the most relevant information across diverse sources (regardless of format, language, or structure), aligning it with the appropriate taxonomy metrics for each company. This eliminates reliance on inconsistent voluntary disclosures and enables systematic, comparable assessments.

CHALLENGE #2

Unstructured Social Data

SIS APPROACH

Traditional social factor frameworks rely on human analysts, leading to subjective and inconsistent scoring of social factors. By implementing structured, rules-based, human-defined grading through LLMs, we ensure scalability, quality control, and adaptability. Pre-defined grading instructions provide consistent evaluation of qualitative data, while updates to the methodology can be rapidly implemented to align with evolving social factor definitions.

CHALLENGE #3

Evolving Materiality Weighting

SIS APPROACH

SIS actively monitors news events and manages data to identify shifts in materiality. By leveraging LLMs alongside human expertise, SIS can rapidly refine, test, and update its taxonomy and broader methodology, ensuring that materiality assessments remain dynamic and reflective of evolving market conditions.

6 Social Investment Products

APM SIS empowers investors with data-driven insights that align financial objectives with the social factors shaped by corporate performance. To deliver on this, we are launching a suite of investment products built on the Social Intelligence Index—including both passive and actively managed strategies—designed to capture the financial materiality of social factors and deliver superior risk-adjusted returns.

(6.1)

Social Intelligence Index

The Social Intelligence Index serves as the foundation for investment products, demonstrating that corporate social factors are a differentiated driver of financial performance. Built on a transparent, systematic methodology, the Index offers an empirical benchmark to evaluate, monitor, and invest in companies with consistently high social factor scores—scores that have historically correlated with stronger long-term financial performance.

By leveraging a dynamic taxonomy and adaptive scoring methodology, the Index reflects evolving market and regulatory conditions. Its construction is factor-agnostic and powered by machine learning models that reassess weights monthly based on current data, ensuring that security selection and portfolio composition remain responsive to shifting social and financial signals.

> "...corporate social factors are a differentiated driver of financial performance."

(6.1)

Index Methodology

The Social Intelligence Index functions as both an analytical tool and an investable benchmark, scalable across a range of passive and active investment products.

(A)

Universe of Companies

Based on the S&P 500—large-cap U.S. companies with significant social and financial impact.

(B)

Dynamic Taxonomy & Scoring

Size
~250 securities selected using proprietary social factor scoring.

Scoring
Adaptive methodology that evolves with market and regulatory trends.

Weighting
Optimized through proprietary portfolio construction that balances composite social factors with active risk.

(C)

Index Characteristics

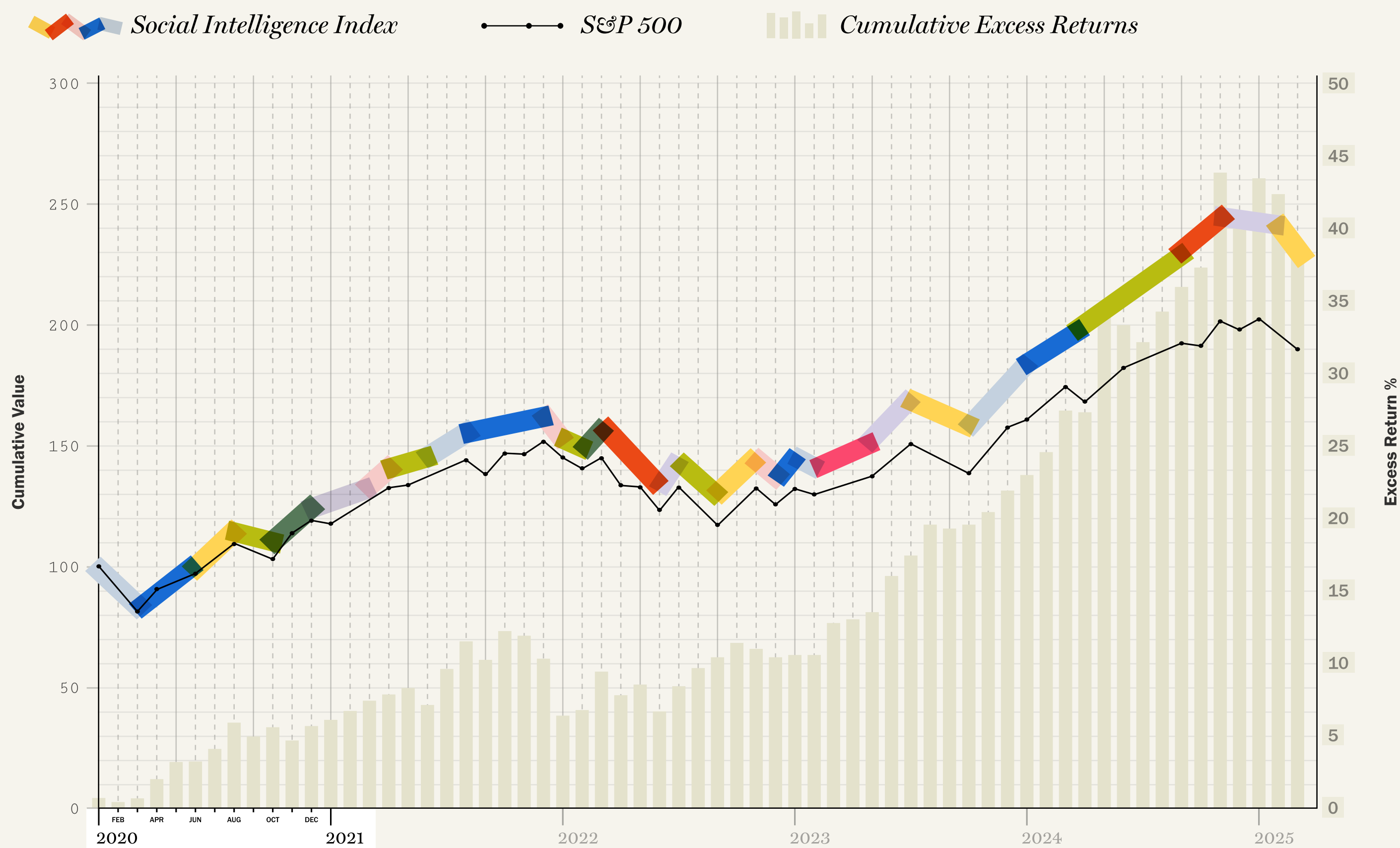
- Highly liquid and investable
- Diversified across sectors
- Rebalanced monthly

We conducted historical backtesting to validate the hypothesis that social factors are financially material—and that their materiality is dynamic. To do this, we constructed a comprehensive point-in-time database covering all constituents of the S&P 500 index over a six-year period (2019–2024). This database integrates taxonomical classifications derived from social performance datasets (both quantitative and qualitative), revenue segmentation, and news sentiment data. A range of regression models was rigorously evaluated, with the final model selected to calculate Social Intelligence Scores for each company. The Social Intelligence Index was then constructed by selecting the companies with the highest scores, with the portfolio optimized quarterly using our proprietary algorithm to maximize performance on an active risk-adjusted basis, leveraging contemporaneous historical data.

Index performance was evaluated against the S&P 500 benchmark using market data from January 2020 to March 2025. Over this period, the Social Intelligence Index achieved an annualized gross return of 16.9%, outperforming the S&P 500's 12.8%. With a beta of approximately 1.0, the 4.0% annualized outperformance was primarily driven by alpha generation. Attribution analysis further indicates that the index maintained low exposures to common equity factors. The index also demonstrated superior risk-adjusted returns, with a Sharpe ratio of 0.8 and a Sortino ratio of 1.3, compared to 0.6 and 1.0, respectively, for the S&P 500. Additionally, the index exhibited a lower maximum drawdown of -22.3%, versus -23.9% for the benchmark.

> "...annualized outperformance was primarily driven by alpha generation."

Social Intelligence Index Backtested Net Performance Relative to the S&P 500



Social Intelligence Index Backtested Performance Metrics Relative to the S&P 500

JAN 2020 – MAR 2025	Social Intelligence Index	S&P 500	Difference
Cumulative Return	126.6%	88.4%	*38.2%*
Annualized Return	16.9%	12.8%	*4.0%*
1-Year Ann. Return	12.5%	8.2%	*4.3%*
3-Year Ann. Return	13.6%	9.0%	*4.5%*
5-Year Ann. Return	22.8%	18.6%	*4.3%*
Avg. Rolling 12M Return	21.9%	17.5%	*4.4%*
Max Drawdown	-22.3%	-23.9%	*1.5%*
Sharpe Ratio	0.79	0.62	*0.17*
Sortino Ratio	1.32	1.03	*0.29*
Information Ratio	1.21		
Beta	1.04		
Monthly Alpha	0.3%		

*Backtested returns represent hypothetical results.**

*Any trends depicted or described above may not continue. Please refer to the Investment Management Agreement for a complete description of terms. **Parts of the historical performance statistics are calculated by backtesting and therefore hypothetical and no representation is being made that any portfolio did, will, or is likely to achieve performance statistics similar to those shown in this presentation.** Please read the complete disclaimer on page 39.

(6.2)

Passive Social Intelligence Products

Grounded in the Social Intelligence Index, APM's passive investment products offer retail and institutional investors a **transparent, cost-efficient, and liquid means of gaining exposure to companies with high social factor performance.** While environmental and governance funds are widely available, this product uniquely isolates the "S"—social factors—within a disciplined, methodologically rigorous framework.

Used alone or alongside existing environmental and governance strategies, these products allow investors to construct full-spectrum ESG portfolios with a properly calibrated and previously underweighted social allocation. As interest in sustainable investing continues to grow, these passive products offer a practical, structured pathway for integrating social performance into long-term investment strategies.

(6.3)

Active Social Intelligence Products

Building on the Social Intelligence Index and passive strategies, APM is also developing enhanced actively managed products designed to further optimize risk-adjusted returns by dynamically integrating social factors. These strategies leverage APM's deep quantitative expertise, combining bottom-up security selection, quantitative price predictions, and factor-agnostic optimizations to generate both beta index exposure and targeted alpha generation.

APPROACH

Recognizing that investors have diverse mandates, risk tolerances, and ESG objectives, our strategies are:

Customizable
Designed to align with specific investor priorities, ensuring alignment with both social and financial risk and return preferences.

Quantitative
Leverages data-driven overlays to optimize risk-adjusted performance while identifying emerging opportunities.

Factor-Agnostic
Adapts to market shifts and social trends, allowing for factor rotations and macroeconomic adjustments.

Conclusion

While the passive strategy provides disciplined, rules-based exposure, it already demonstrates outperformance by harnessing new, underutilized information embedded in social factor data. The actively managed approach builds on this foundation, allowing for dynamic portfolio adjustments, real-time materiality updates, and active risk positioning. Together, these complementary strategies offer investors flexible tools for aligning capital with both financial goals and meaningful social impact —whether through broad ESG coverage or high-conviction, actively managed portfolios.

> "The actively managed approach builds on this foundation, allowing for dynamic portfolio adjustments, real-time materiality updates, and active risk positioning."

7

What's Next: Expanding the Impact of the SIS Engine

Social priorities are constantly shifting—what was once a voluntary corporate responsibility initiative can quickly become an investor expectation or a regulatory requirement. While financial markets track economic cycles and policy shifts with precision, **they have struggled to systematically quantify how evolving social sentiment shapes financial materiality until now.**

The SIS Engine offers a new way to measure and interpret social trends. By structuring social data at scale, it provides a real-time measure of social factor scoring, enabling investors to anticipate shifts in social metric materiality rather than react to them. The Social Intelligence investment products, outlined in this paper, applies this approach to public markets, integrating social data, financial analysis, and materiality tracking into investment decision-making.

But what if the same rigor and structure were applied beyond confines of investment management? Impact investing and philanthropy have long faced challenges in measuring and analyzing impact data and aligning capital with the most effective interventions. A methodology that can systematically structure social data and evaluate that data has the potential to crowd in capital, enhance transparency, and improve returns to disciplined capital allocation at scale.

This is where the SIS Engine extends its impact. By applying the same data-driven discipline to the social sector, we will create new opportunities to innovate and scale impact. **This approach enables the design of new social finance products, the construction of innovative capital structures, and the scaling of impact-driven investment strategies.**

What if social finance could be as measurable, transparent, and optimized as traditional asset management? What if investors could optimize not just for traditional financial returns, but also for what the Nobel Prize-winning economist, Edmund Phelps, called 'mass flourishing' [18]? These questions will shape the next phase of our work.

[18] Phelps, Edmund. Mass Flourishing: How Grassroots Innovation Created Jobs, Challenge, And Change. Princeton: Princeton University Press, 2013.

"I argue that the flourishing that is the quintessential product of the modern economy resonates with the ancient concept of the good life... An economy is good if and only if it permits and fosters the good life."

Edmund Phelps
ibid., pp. xi and 288

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