Welcome

We will begin promptly at 11 AM ET. If you are unable to hear the speakers, please let us know in the chat box. You may enter your questions in the Q&A, we will address them at the end of the presentation. You can find a copy of the recording of this webinar at www.fdpinstitute.org/webinars
Financial Data Professional Institute

FDP Institute provides world class training and education to financial professionals to meet the accelerating needs of digital transformation in the industry.
Introductions

Zi Abraham, FDP, MCSI
Business Consultant
Verrazano Consulting Solutions LLC

Hossein Kazemi, Ph.D., CFA
Senior Advisor
FDP Institute

Today’s Topic:

Harnessing the Power of Data for ESG Investing
Harnessing the Power of Data for ESG Investing

Utilizing data to fuel sustainable investments

By Zi Abraham, FDP, MCSI
Agenda

1. ESG Investing
2. ESG Data
3. ESG Data Challenges
4. Can AI help?
5. Q & A
What is ESG Investing?

ESG investing involves investing your money in companies that are committed to creating a positive impact on the world.

When making investment decisions, companies' commitment to enhancing performance in environmental, social, and governance areas is considered alongside financial factors.

Taking ESG factors into account for investment management allows for a comprehensive outlook of companies, mitigating risks and identifying opportunities.
Examples of ESG Criteria used by Sustainable Investors

**Environmental**
Meeting today’s needs without compromising the ability of future generations to meet their needs

- Circular economy
- Water use and conservation
- Climate Change/Carbon/Methane
- Sustainable land use
- Biodiversity
- Plastics
- Clean technology

**Social**
Creating sustainable successful places that promote wellbeing, by understanding what people need from the places they live and work

- Human rights
- Labor relations
- Just transition
- Diversity, equity and inclusion
- Workplace benefits

**Governance**
Links ecological citizenship with institutions and norms of governance addressing the three issues of globalization, democracy and sustainability.

- Tax fairness
- Cyber Security
- Executive compensation
- Responsible political engagement
- Corporate purpose
- Anti-corruption policies
- Board independence
Positive screening refers to the practice of actively selecting investments that meet certain ESG criteria.

- Positive screening provides a proactive approach for values-based investing and for focusing capital on more sustainable companies relative to industry average.
- Common ESG factors considered include GHG emissions, renewable energy use, board diversity, community relations, human rights policy and supply chain monitoring.

Negative screening focuses on limiting exposure to objectionable or unsustainable economic activities rather than a sole emphasis on positive impact.

- Negative screening involves excluding certain companies, sectors or practices based on ESG criteria.
- Common exclusions include tobacco, weapons, fossil fuels, alcohol, gambling, adult entertainment etc.
Alignment to UN Sustainable Development Goals (SDGs) is crucial in directing investments. Unless we act now, the 2030 Agenda will become an epitaph for a world that might have been.

— António GUTERRES
Secretary-General of the United Nations

• New flows of private sector capital will play a decisive role in funding global development efforts. While government spending and development assistance will contribute, they are projected to account for no more than $1 trillion per year.

• To bridge the financing gap, the private sector will need to invest significantly more, either by redirecting existing capital flows or by making new allocations.
Most investors prioritize climate change as top ESG issue, protecting portfolios from risks and taking advantage of opportunities for low-carbon, resilient economies.

Companies face greater physical risks due to changing weather patterns, and, transition risks as economies shift towards being less carbon-intensive. These risks could impact a company's expenses, revenues, asset and liability values, as well as the availability and cost of capital.

Investment strategy is adapted using climate data insights to optimize returns and quantify risks.
Regulations Governing ESG Investing

United States:
- SEC fund naming rule - funds names could be considered materially deceptive or misleading if a fund does not adopt a policy to invest, under normal circumstances, at least 80% of the value of its assets in the investment focus that the name suggests - Sep 2023
- DOL 401(k) plan ESG guidance - allows fiduciaries to consider ESG factors when evaluating investment choices but not at the expense of returns. Finalized in 2022.
- SEC Shareholder proposal rules - makes it harder for shareholders to demand corporate ESG actions like climate or diversity reports.

European Union:
- EU Taxonomy - provides criteria for determining if economic activities qualify as environmentally sustainable. Applied beginning 2022.
- EU Corporate Sustainability Reporting Directive (CSRD) - requires large companies to report sustainability information. Proposed to take effect in 2023.
- EU Corporate Sustainability Due Diligence Directive (CSDDD) - requires companies to identify, mitigate, and report on the impact of their operations and supply chains on human rights and the environment. Applies to both EU and non-EU companies. Proposed to take effect in 2024.

The regulatory focus on ESG reporting and risk management is increasing globally, though remains fragmented across jurisdictions. This could lead to disconnected standards making it difficult to have common objectives across jurisdictions.
Sustainability Standard Setters, Framework Developers and Influential Stakeholders

Frameworks provide an overview of the structure and topics to be addressed. Standards provide detailed structures, including specific metrics and detailed criteria.

ESG Ratings Frameworks

MSCI ESG Ratings

MSCI

SUSTAINALYTICS

ESG Risk Ratings

Sustainable Growth

LSEG Data & Analytics
Global Sustainable Fund Flows: Q3 2023

- Global sustainable fund assets stands at USD 2.74 trillion at the end of September 2023.
- Amid greenwashing accusations and regulatory tightening, fewer funds are adding ESG-related terms to their names.
- A growing number of funds are removing ESG-related terms from their names in the U.S., but not in Europe.

Source: Morningstar Global ESG Q3 2023 Flow Report final
“Data is the new oil”, its value lies in its potential to offer superior long-term results.
ESG Data

Quantitative or qualitative pieces of information on the environmental, social, economic and/or corporate governance exposures and practices of companies
ESG Data Products

e.g., MSCI provides a wide variety of ESG products and solutions. Here are the key ESG data products:

**ESG Ratings**
ESG Rating is designed to measure a company’s resilience to long-term, industry material environmental, social and governance (ESG) risks.

**ESG Controversies**
ESG Controversies allows investors to analyze a company’s significant E, S & G impacts by identifying company involvement in major ESG controversies, company's performance and adherence to international norms and principles.

**Climate Change**
Climate Change Solutions is designed to facilitate climate risk integration across the investment process. It provides forward looking scenario analysis, temperature alignment, emission data, fossil fuel exposure, clean tech solutions.

**Climate VaR**
Helps investors to better assess potential future costs and/or profits relating to their portfolio’s exposure to future climate change impacts.

**Business Involvement Screening and Global Sanctions**
Enables institutional investors to manage environmental, social and governance (ESG) standards and restrictions reliably and efficiently.

**Sustainable Impact Metrics**
Identify companies that derive revenues from products or services with positive impact towards addressing each of the UN SDGs.

**ESG Fund Ratings**
Measures the ESG characteristics of the total portfolio, and rank or screen funds based on a diverse set of ESG exposure categories.

**EU Sustainable Finance**
EU Sustainable Finance legislative package data supports key legislative streams - SFDR, EU Taxonomy, Enhanced Corporate/Issuer Disclosures...

Source: MSCI Data Explorer
Investment Activities

Investors and corporations prioritize consistent, reliable, and comparable sustainability data for their investment processes.

Data Infrastructure

‘Data lake’ integrates with all different platforms in the firm incentivizing the use of trusted data in the investment process.

Research
- Exclusionary screening
- Materiality analysis
- Red flag and watch list
- Norms based screening
- Model development
- Thematic review
- Macroeconomic analysis

Stewardship
- Investee Stewardship
- Engagement
- Active ownership & Proxy voting

Portfolio Construction
- Portfolio review
- Scenario analysis
- Portfolio weighting

Risk Management and Compliance
- Fund mandates
- Client mandates
- Risk and exposure limits
- Screening rules

Portfolio Construction
- Fund mandates
- Client mandates
- Risk and exposure limits
- Screening rules

Reporting
- Reporting at holdings level, financial product level or entity level
- Regional regulations

Reference: UNPRI Driving Meaningful Data Programme
**MSCI- ESG Ratings Methodology: MSCI and LSEG**

**MSCI- ESG Ratings Key Issue hierarchy:**

<table>
<thead>
<tr>
<th>3 Pillars</th>
<th>10 Themes</th>
<th>33 ESG Key Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate Change</td>
<td></td>
<td>Carbon Emissions</td>
</tr>
<tr>
<td>Natural Capital</td>
<td></td>
<td>Climate Change Vulnerability</td>
</tr>
<tr>
<td>Pollution &amp; Waste</td>
<td></td>
<td>Financing Environmental Impact</td>
</tr>
<tr>
<td>Environmental Opportunities</td>
<td></td>
<td>Product Carbon Footprint</td>
</tr>
<tr>
<td><strong>Social</strong></td>
<td></td>
<td>Biodiversity &amp; Land Use</td>
</tr>
<tr>
<td>Human Capital</td>
<td></td>
<td>Raw Material Sourcing</td>
</tr>
<tr>
<td>Product Liability</td>
<td></td>
<td>Water Stress</td>
</tr>
<tr>
<td>Stakeholder Opposition</td>
<td></td>
<td>Electronic Waste</td>
</tr>
<tr>
<td>Social Opportunities</td>
<td></td>
<td>Packaging Material &amp; Waste</td>
</tr>
<tr>
<td><strong>Governance</strong></td>
<td></td>
<td>Toxic Emissions &amp; Waste</td>
</tr>
<tr>
<td>Corporate Governance</td>
<td></td>
<td>Opportunities in Clean Tech</td>
</tr>
<tr>
<td>Corporate Behavior</td>
<td></td>
<td>Opportunities in Green Building</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Opportunities in Renewable Energy</td>
</tr>
</tbody>
</table>

**MSCI- Hierarchy of ESG Scores:**

**LSEG - ESG Combined Scores Framework:**

Source: MSCI ESG Ratings Methodology - June 2023

Source: LSEG ESG Scores Methodology
Impact of ESG Issues

MSCI's ESG Fund Ratings and Climate Search Tool

American Funds New Economy Fund;A

Peer Group: Equity Global
Domicile: USA
Holdings as of: September 30, 2023
As of date: November 20, 2023

Impact of ESG Issues

Climate Risk and Opportunities

Weighted average carbon intensity (tCO2e / $m sales)
The fund's holdings have low carbon intensity, based on the weighted average carbon emissions per USD million sales.

ESG Rating distribution of fund holdings
27% of the fund's holdings receive an MSCI ESG Rating of AA or A (ESG Leaders) and 2% receive an MSCI ESG Rating of B or CCC (ESG Laggards).

Peer and global rank
The fund ranks in the 23rd percentile within the Equity Global peer group and in the 50th percentile within the global universe of approximately 34,000 funds in coverage.

58.9 tons

Green vs. Fossil Fuel-Based Revenue
We classify 3.5% of the total revenue generated by the fund's holdings as green (e.g. alternative energy) and 0.6% of total revenue as fossil fuel-based (e.g. thermal coal).

Parnassus Core Equity Fund;Investor

Peer Group: Equity US Income
Domicile: USA
Holdings as of: September 30, 2023
As of date: November 24, 2023

Impact of ESG Issues

Climate Risk and Opportunities

Weighted average carbon intensity (tCO2e / $m sales)
The fund's holdings have moderate carbon intensity, based on the weighted average carbon emissions per USD million sales.

ESG Rating distribution of fund holdings
43% of the fund's holdings receive an MSCI ESG Rating of AA or A (ESG Leaders) and 3% receive an MSCI ESG Rating of B or CCC (ESG Laggards).

Peer and global rank
The fund ranks in the 59th percentile within the Equity US Income peer group and in the 75th percentile within the global universe of approximately 34,000 funds in coverage.

111.0 tons

Green vs. Fossil Fuel-Based Revenue
We classify 5.8% of the total revenue generated by the fund's holdings as green (e.g. alternative energy) and 0.0% of total revenue as fossil fuel-based (e.g. thermal coal).
Importance of data: UN Sustainable Development Goals (SDGs)

Data plays a pivotal role in shaping policies and driving meaningful change.

- Investing in improved data infrastructure is crucial in facilitating a rescue plan for both people and the planet.
- With the world grappling with multiple crises in areas such as health, food, energy and climate change, better data is needed to support informed policymaking.
- Need to have efficient monitoring and reporting mechanisms in place, to track progress towards achieving the Sustainable Development Goals (SDGs).
- $5.4 and $6.4 trillion annual investment is needed to achieve the UN Sustainable Development Goals by 2030.

Source: The Sustainable Development Goals Report 2023
ESG Data Challenges

Investing in better data infrastructure is vital for rescuing both people and the planet.
Understanding Investor Data Expectations

**Improve Quality of Data**
The Importance of keeping Up-to-Date approaches in data provision. It’s crucial for data providers to regularly update their methods to keep up with the latest scientific advancements.

**Expand Coverage**
Data providers should expand coverage to include other asset classes without sacrificing data quality standards.

**Enhance Data Granularity**
Data providers play a crucial role in assisting investors by providing granular data to assess key issue details, alignment, facilitate engagement, set targets, monitor progress, and produce reports.

**Provide Historical and Futuristic Data**
Developing portfolio monitoring methodologies and tools that precisely track the improvement of holding and portfolio level metrics, and highlight the drivers behind trends and projections.

**Illuminating data through myriad dimensions**
Data providers must offer multidimensional data to evaluate a company’s exposure, management, industry specific issues etc.

**Provision for overriding data**
Clients can improve their investment accuracy by having control over input data, allowing them to use their own research and expertise while maintaining consistency across all tools.

**Report on key indicators**
Provide data for all key indicators required for mandatory regulatory reporting.

**Embrace Global Standards and Frameworks**
Integrating ESG considerations and methodologies is essential for data providers, and should align with established best practices, relevant standards, and guidance.

SHOW ME IT’S GOOD!

Data is the key for unlocking ESG integration into the investment management process and it is fair to have minimum standard expectations
Greatest Challenges with Incorporating ESG Data

1. Data consistency
   Overcoming lack of consistency in ESG scores

2. Resource intensive
   Significant effort required to aggregate, cleanse, interpret and analyze

3. Uneven coverage
   Differences in coverage by asset class, region or provider. More focus on NA, EU and Equities

4. Rapid evolution
   ESG metrics and frameworks are constantly shifting and advancing

5. Historical data
   Backward-looking ESG data may not reflect current or future risks. Forward-looking analysis is limited.

6. Fitment to defined purpose
   Alignment with product objectives, client mandates and firm's definitions, standards and principles
Multiple data sources

Accessing ESG data from multiple sources rather than relying on a single data provider.

Building in-house data tools with a focus on capturing alternative data and synthesizing into investment workflows.

Developing AI/ML capabilities to analyze unstructured data, identify material ESG factors specific to sectors and companies.

Conducting proprietary research, analysis and rating/scoring.

Overcoming Data Difficulties

Internal Solutions

Invest in technology

Active engagements

Having direct engagement with companies to get disclosure on financially material ESG metrics.

Internal research
Can AI help?
The AI Landscape

Current State of AI

• Advances in deep learning techniques for computer vision, speech recognition, and natural language processing, combined with greater access to data and compute power, are fueling broader AI adoption and building excitement and promise.

AI Trends

• AI is being integrated into various industries and business functions for automation, augmentation of existing processes, discovering new insights, and making intelligent predictions from data.

AI in Asset Management

• Predictive Analytics
• Portfolio Optimization
• Risk Modeling
• Trade Execution
• Client Service
AI Tools and Techniques used for Harnessing ESG Data

- **Natural Language Processing (NLP)**: To extract unstructured ESG data
- **Text Summarization**: Summarize key points from lengthy text documents
- **Machine Learning**: Determine ESG materiality and predict future metrics
- **Neural Networks**: Finding nonlinear relationships between ESG factors and financial metrics
- **Data Validation**: Flag outliers or inconsistencies
AI Tools and Techniques used for Harnessing ESG Data (contd.)

- **Sentiment Analysis**: Classify sentiment of unstructured text on ESG topics
- **Clustering Analysis**: Group companies based on similarity of ESG metrics
- **Weighting Algorithms**: Optimize weighting schemes for ESG factors in scoring models
- **Forecasting Models**: Predictive analytics using ML techniques to estimate future ESG performance
- **Robotic Process Automation**: Automate repetitive ESG data tasks like checking for updates
Using AI to synthesize ESG data

**DATA EXTRACTION & ENRICHMENT**
- Extract unstructured data
- Summarize text
- Classify sentiments
- Link to companies and locations

**DATA INTEGRATION**
- Map to structured schema
- Validate and assign missing values
- Incorporate alternate datasets

**DATA ANALYSIS**
- Identify key ESG themes
- Predict future metrics based on historical patterns
- Cluster companies by ESG performance
- Summarize key ESG metrics and events for companies

**BUSINESS INTELLIGENCE**
- Create interactive dashboards
- Generate summary report of key ESG insights
- Build notifications to view ESG alerts and data
# Laws and Regulations Governing Use of AI in Asset Management

<table>
<thead>
<tr>
<th>Regulations</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SEC regulations</strong></td>
<td>The SEC does not have specific AI regulations but may scrutinize false or misleading claims about AI in investments. AI transparency and explainability is encouraged.</td>
</tr>
<tr>
<td><strong>Investment Advisers Act</strong></td>
<td>The SEC requires firms to establish policies to prevent violations of securities laws by algorithms and AI recommendations.</td>
</tr>
<tr>
<td><strong>AI model risk management</strong></td>
<td>Regulatory guidance indicates firms should actively govern, test, and monitor AI models to mitigate risks. Documentation and explainability are encouraged.</td>
</tr>
<tr>
<td><strong>FTC - Truth in Advertising laws</strong></td>
<td>The FTC prohibits false advertising and may examine asset managers' marketing claims about the use and benefits of AI.</td>
</tr>
<tr>
<td><strong>FINRA regulations</strong></td>
<td>AI used for automation of tasks like trading or portfolio management must abide by FINRA rules of supervision, surveillance and cybersecurity.</td>
</tr>
<tr>
<td><strong>EU GDPR compliance</strong></td>
<td>Asset managers operating in the EU must ensure AI systems comply with GDPR data privacy and consent requirements.</td>
</tr>
</tbody>
</table>

While AI-specific financial regulations are still evolving, existing laws around transparency, fairness, safety and human role would apply to AI use in asset management. Regulatory guidance also emphasizes the principle of ethics in AI.
Governments should not rush with a "comprehensive" law that might become outdated quickly.

The US White House signed an executive order on October 30, 2023, addressing labor issues related to artificial intelligence (AI). The order calls for a report on AI's potential impact on the labor market and recommends best practices to minimize negative effects and maximize benefits for workers regarding job displacement and labor standards.

The EU AI Act takes a risk-based approach and categorises AI systems into four risk levels: minimal or no risk, limited risk, high risk and unacceptable risk. Unacceptable risk AI systems will be strictly prohibited, with obligations then tapering based on risk level.


Learning Resources for ESG and AI

- PRI Academy: Responsible Investment Courses
- CISI: Sustainable and Responsible Investment
- FDP Institute by CAIA: FDP Charter

What do workers and employers think about AI in the workplace?

Workers are worried about job loss due to AI in the next 10 years

- New skills are required
- Employers should invest in retraining or upskilling
- Individuals should invest in learning


Are you ready to manage me or be managed?
Contact Info

Reach out if there are any questions.

ziabraham@gmail.com

www.linkedin.com/in/ziabraham

+1.425.647.8822
Q & A

Please join us for our upcoming webinar:
Investing in Asset Backed Securities Using Data Science

Register Here:
https://bit.ly/3QXnENc
Thank You

Contact Us:

- fdpinstitute.org
- info@fdpinstitute.org
- @FDPbyCAIA
- linkedin.com/company/FDP Institute