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ESG data

SUSTAINABLE FINANCE

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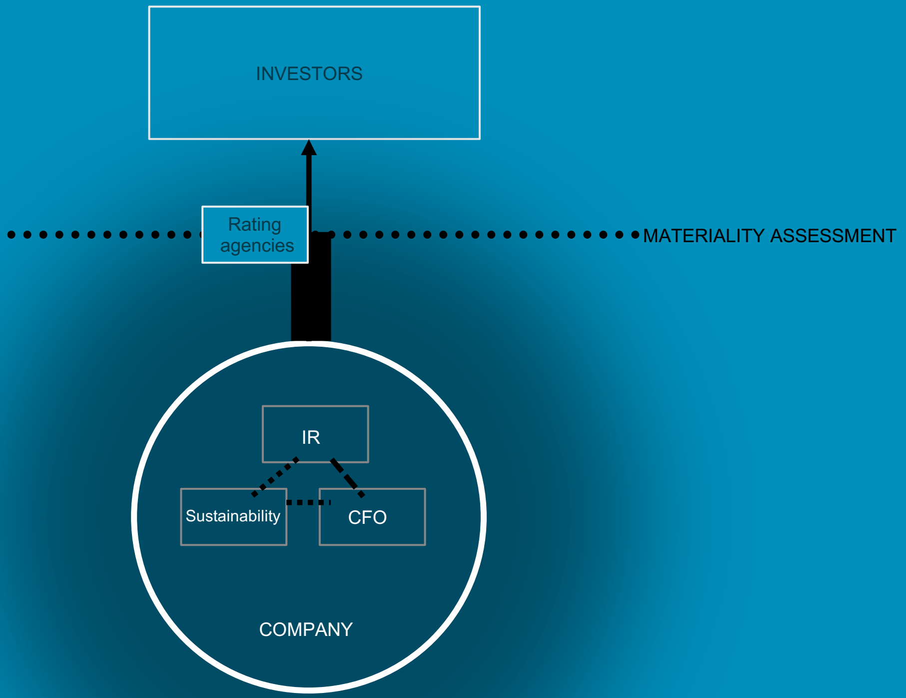
ESG Data – The Starting Point

- **All financial assets** (equities, fixed income, real estate, commodities etc.) **have an ESG profile** that could potentially be determined and measured.
- **Quality data** about these assets' ESG profile **is critical** for effective investment and credit analysis. Sustainable finance depends on ESG data.
- Investors and lenders use this ESG issues and indicators to make **investment and credit decisions**.
- ESG data is **financially relevant** ("material") because it could have a significant impact – both positive and negative – on a company's business model and value drivers, such as revenue growth, margins, required capital and risk.

ESG Data – The Starting Point



ESG Data Sources: human vs. machine d

ESG data providers collect the data from:

. Company websites
. Sustainability annual reports
. Academic, government and NGO websites
. Financial news and reports
. Company reviews and social media
. Media articles
. Questionnaires
. Satellite imagery
. Regulatory filings
. Statistical models that create estimates for unreported data (based on averages and trends).

Often this data is voluntary, non-standardized and unaudited

It can be collected by human beings (ESG analysts) or machines (through ML, AI and web scraping)

ESG data-providing companies transform and aggregate this data into clean digestible records of information.

A company that has a high ESG rating or performance according to these data providers can be considered a “sustainable asset”.

Data Sources: human vs. machine data

ESG –Data and Analytics

Humans vs Machines

Human Driven		Machine Driven	
Analysts' deep dive into: • Balance sheet • Regulatory filings • Business model & supply chain • 8,000 listed equities	**Inputs** • Government, NGO, 3rd party datasets • Regulatory filings; voluntary disclosures • 2,000+ media sources	**CPUs deep dive into:** • Global news media • NGO reports • Supply chain • 50,000+ media sources	**Inputs** • Government, NGO, 3rd party datasets • Regulatory filings; voluntary disclosures • 50,000+ media sources
PROS: • Comprehensive • Interpretable	**Techniques** • Rules-based methodology employing industry-specific key issues • Engagement with companies for verification & data quality control	**PROS:** • High frequency (daily) • Smaller staff • Repeatable • Historical data (typically longer)	**Techniques** • Web scraping • Natural language processing • Machine learning • Significance clustering/ confidence analysis
CONS: • Low frequency • Labor-intensive • Analyst bias	**Output** • Company, industry & thematic reports • Peer, sector, benchmark comparisons • Data feeds, indices	**CONS:** • Often sentiment-driven • Few hard metrics	**Output** • Company scorecards and trends (TVL) • Peer, sector, benchmark comparisons (TVL) • Data feeds

Rupert Walker (2019), " Can AI resolve ESG rating shortfalls?"

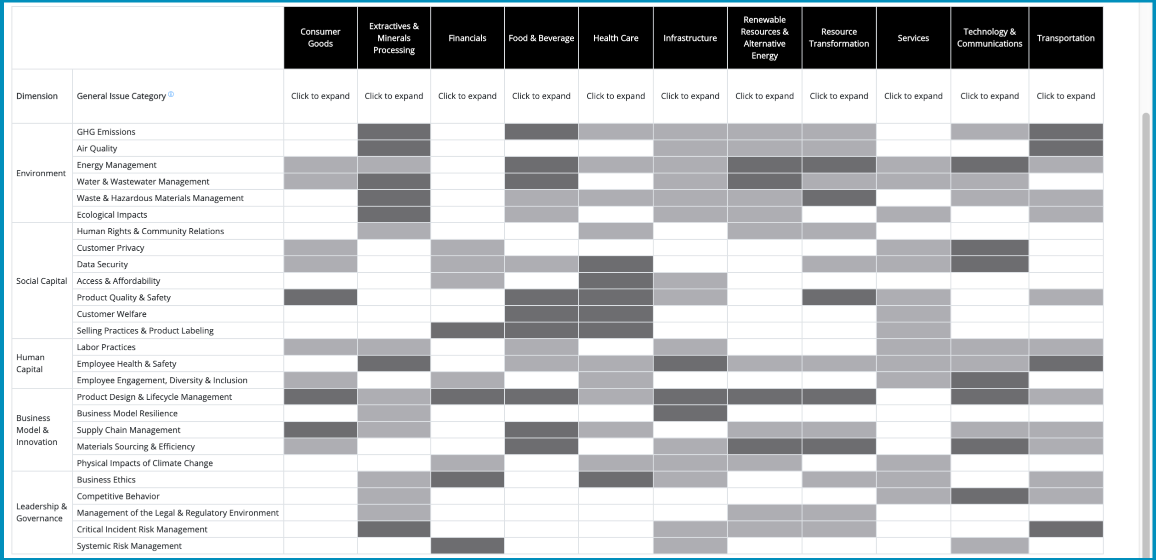
What is Materiality?

- It is the **relevance of a sustainability factor to a company's financial performance.** Financially material ESG factors can have a significant impact – both positive and negative – on a company's business model and value drivers, such as revenue growth, margins, cost of external financing to the company (the weighted average cost of capital), and risk.

- **The material factors vary according to sector and geography.** For example, fuel efficiency has a bigger impact on the bottom line of an airline than it does for an investment bank. Water issues are more relevant for a mining or agro company than for a retail bank. Or climate change is likely to affect some regions more than others. **We cannot adopt a one–size–fits–all approach.**

How to Identify Materiality? 1-2

SASB's Materiality Map® identifies sustainability issues that are likely to affect the financial condition or operating performance of companies within an industry. The Map considers 26 sustainability-related business issues.



Sector Level Map

- Issue is likely to be material for more than 50% of industries in sector
- Issue is likely to be material for fewer than 50% of industries in sector
- Issue is not likely to be material for any of the industries in sector

Industry Level Map

- Not likely a material issue for companies in the industry
- Likely a material issue for companies in the industry

https://www.sasb.org/standards/materiality-map/

How to Identify Materiality? 2-2

MSCI Materiality Map

MSCI

ESG Industry Materiality Map

MSCI ESG Ratings provide an assessment of the long-term resilience of companies to environmental, social, and governance (ESG) issues. Our ESG Industry Materiality Map is a representation of the current Key ESG Issues and their contribution to companies' ESG Ratings. It is part of our ESG Ratings transparency initiatives, through which we have made ESG Ratings of companies and funds accessible to the public.

To see the Key Issues assessed for companies in a specific GICS®[1] sub-industry or sector, find the industry in the dropdown list or use the search bar on the right. Click here for more information.

Industrials Airlines

Search for a sub-industry Clear

https://www.msci.com/our-solutions/esg-investing/esg-ratings/materiality-map

Does Materiality Matter?

- A study by Khan, Serafeim and Yoon (2016) presents evidence that investment in sustainability issues leads to financial outperformance, but only when the investment is in sustainability issues that are financially material to the firm. In contrast, they find that **investment in immaterial sustainability issues does not lead to better financial performance** and may in fact detract from performance.

- A study by *Steinbarth and Bennett (2018)* has found that traditional ESG scores are composed of a large number of issues that are not material for every industry or company. Specifically, for two-thirds of all securities in the Russell Global Large Cap Index universe, **less than 25% of the data items in the traditional score are considered material.**

Differences in four-factor alphas (High–Low Quintiles)	
Material Sustainability Issues	1.19%
Immaterial Sustainability Issues	0.30%
Standard ESG Score	0.97%

Source: Russell Investments. Alphas refer to high minus low portfolio returns regressed on four-factor models.

Emily Steinbarth and Scott Bennett (2018), "Materiality Matters: Targeting the ESG Issues that Impact Performance," Russell Investments.

ESG Data Providers

- There are **vast numbers of third-party providers of ESG data**. Investors can subscribe to these platforms and extract data such as ratings, competitive benchmarking and risk analyses.
- In 2016, more than **125 ESG data providers were in operation**, according to the Global Initiative for Sustainability Ratings. These include:

(1) **Market data providers**. Collect broad market data on equities, fixed income, commodities, foreign exchange. Offer specialized thematic indices and risk-centered metrics and tools. ESG data represents a subset of their products and services. Examples: Bloomberg, MSCI, Refinitiv (former Thomson Reuters), FTSE Russel.

(2) **Mainstream credit rating agencies**. Moody's, S&P (Standard & Poor´s), Fitch have started to integrate ESG factors in their credit ratings. They are also acquiring ESG and climate-focused data vendors.

(3) **ESG/impact exclusive**. Focus solely on ESG research, ratings and analysis. They often have a unique rating methodology to evaluate ESG data. Examples: Arabesque, Covelance, CSRHub, TruValue Labs, Ethos, Inrate, ISS-Oekom, RobecoSAM, Sustainalytics, Vigeo Eiris, Clarity AI, I360X.

(4) **Specialized data providers**: Focus on specific aspects of ESG but not all three. Examples: CDP, Reprisk, Trucost

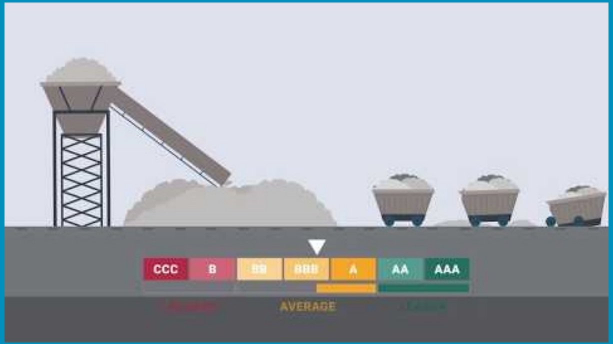
- Currently, there are roughly 30 significant ESG data providers around the world. However, less than a handful have global coverage.

What do they measure?

- ESG ratings firms **aim to provide insight into ESG quality**. ESG scores and ratings are numerical values that are assigned to a company based on its performance in ESG factors. **The scores are intended to provide a quantitative measure of a company's ESG performance** and are often used by investors to make investment decisions.

- A common theme among ESG providers is investment **risk reduction**. The assumption is that ESG quality improves financial performance by reducing social and environmental factors that pose risk to the company's business model or operations. To this end, **MSCI** states that its ratings "support ESG risk mitigation and long-term value creation", whereas **Sustainalytics** "measures a company's exposure to industry-specific material ESG risks and how well a company is managing those risks."

ESG Data Provider: MSCI



https://www.youtube.com/watch?v=79rZm7FCkOU

- **MSCI ESG Ratings** measure a company's resilience to long-term, industry material ESG risks.
- It covers 10,000+ companies with 17,500 issuers for bonds and equities, including subsidiaries. It uses more than 1,000 data points.
- It applies a rules-based methodology to identify industry leaders and laggards according to their exposure to (80 sector and geographic) ESG risks and how well they manage those risks relative to peers. Its ESG Ratings range from leader (AAA, AA), average (A, BBB, BB) to laggard (B, CCC).
- To assign scores, MSCI relies more on "alternative data" sources such as satellites, government/industry, academic and also on artificial intelligence and applied big data and less of simple company disclosures and formal statements.
- MSCI has 200+ multilingual ESG analysts, 1,500 ESG indexes, 1,700 clients worldwide.
- Continuous evaluation of ESG risks, including daily monitoring of 2,100 media publications and regular updates of public documents and third-party data sets.
- Ratings are used for Fundamental / Quant Analyses, Portfolio construction / Risk management, Engagement & thought leadership, or Benchmarking / Index-based product development.

How Investors Use This Data?

- Active investors will use multiple data sources and perform their own analyses rather than solely relying on data of a third-party data provider (e.g. State Street has developed an internal platform that mixes several ESG data providers such as Truvalue Labs and MSCI).

- Passive investors often use single-source third party ESG-data. They rely on ESG indices. Indices are a hypothetical portfolio of investment holdings which represents a segment of the financial market. ESG indices are designed to provide a benchmark of companies exhibiting best corporate social responsibility practices as measured by their superior rating.

- Examples of ESG Indices: MSCI KLD 400 Social Index, Dow Jones Sustainability Index, FTSE4Good Indexes, Barclays MSCI ESG Fixed Income Indexes. Generally, ESG indices beat the market.

- Global ETF* assets could reach $12 trillion over the next five years. There are 3.7m indices according to the Index Industry Association (IIA). Only 1% of those are ESG indices.

Investment Growth of MSCI KLD 400 Social vs. S&P 500

Source: Morningstar. Data from 5/1/1990 to 9/30/2019. MSCI KLD 400 Social Index Inception date : 5/1/1990
Index performance is for illustrative purposes only. Index performance does not reflect any management fees, transaction costs or expenses. Indexes are unmanaged and one cannot invest directly in an index. Past performance does not guarantee future results. Index performance does not represent actual iShares Fund performance. For actual fund performance, please visit www.iShares.com or www.blackrock.com.

* An exchange-traded fund (ETF) is a type of security that involves a collection of securities—such as stocks—that often tracks an underlying index

Measuring ESG Risk vs. Measuring Impact

- **ESG investing relates largely to the internal operations of a company**. It is related to the performance of an asset in relation to environmental, social and governance issues. It aims to integrate a range of ESG factors that can mitigate risk and improve performance.

- Impact Investing takes the concept of ESG Investing to the next stage by seeking out investments that are making a **measurable positive environmental and social impact**.

- **ESG data is mostly about internal processes, whereas impact data is about the external impact in society and the environment of the products and services provided by companies**. ESG is inward-looking, whereas impact is outward-looking.

  For instance: ESG data looks at Board diversity in a healthcare company, whereas impact data looks at the number of patients treated (output) or as changes in healthcare indicators in the community covered by that company (outcomes)

- So what is impact?

The OECD defines impact as a ”positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended.” It can be seen from the perspective of outputs (the direct effects of an action/intervention) and outcomes (short and mid-term changes).

ESG Data Challenges (1-2)

- **Several regulators around the world still don't require companies to report on most ESG data**. Companies are left to determine for themselves which ESG factors are material to their business performance and what information to disclose to investors.

- With hundreds of ESG fields and a relatively short data history, the **risk of "cherry picking" data is high** and researchers can often uncover spurious relationships between ESG factors and stock performance.

- **There is a mismatch between the low frequency of ESG data updates (often quarterly ratings) and trading strategies**. Correlation is not always causality. Has a company performed well because they do good, or they do good, because they have performed well? E.g. Higher Remuneration is a cause or consequence of performance?

- Companies receive a large number of different reporting requests and there is little direction on what areas they should focus on. **Regulatory bodies do not dictate how companies report their ESG data**. Consequently, investors can have only limited confidence that the sustainability data being self-reported is accurate.

- There is also the **need for more technology**. Machine learning, AI and natural language processing have significant potential. One missing link, technology-wise, is location-based data for physical climate risk.

- Trend may be the **adoption of global and verifiable standards for company disclosure and ESG ratings**. This could be mixed with proprietary individual ESG rating systems (e.g. RobecoSAM has used its own Corporate Sustainability Assessment since 1999). In addition, the assessment of any information should be a combination of machine-driven processes and human curation.

ESG Data Challenges (2-2)

Because larger companies tend to have greater corporate sustainability resources, they are better placed to respond to reporting requests. Therefore, they often score higher on third-party sustainability ratings (Akgun, Mudge, Townsend, 2021). This phenomenon is a function of the emphasis that many ratings place on policy and disclosure rather than action.

ESG Data Providers Shortcomings

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- ESG ratings and data products are at an early stage of adoption by financial market participants, although their usage and role are growing rapidly. Consequently, the market remains largely unregulated, with some isolated attempts at self-regulation through codes of conduct. A number of voices such as regulators (ESMA, British, Indian, French and Dutch regulators), industry associations, as well as providers themselves have called for a regulation of the market. In Nov. 2021, an IOSCO report stated that "there is little clarity and alignment on definitions, including on what ratings or data products intend to measure; there is a lack of transparency about the methodologies underpinning these ratings or data products." In Jan. 2023, South Korean regulator issued guidelines on ESG and credit ratings.

- **The methodologies for normalizing the reported data carry different assumptions about what is material**. There is no consensus on how to report, measure or incorporate ESG metrics. As a result, there is low correlation between company evaluations across providers (unlike credit rating agencies).**

- There is **lack of transparency on how ESG data providers collect, aggregate and weight particular ESG factors**. Most ESG data providers treat their methodologies as proprietary information.

- **Many stocks, especially small caps, are not yet ESG-rated**. Lack of information makes it very difficult to assign a score to these companies.

- The **companies currently covered by ESG rating agencies are small** against the number of possible securities. Therefore not all existing funds could be rated.

- There are data gaps since not enough companies report the information investors require, particularly in certain regions or sectors of the economy.***

- According to a SustainAbility study, "Investors interviewed expressed strong critiques of ratings, from inaccuracies and use of old or backwards-looking data, to more fundamental concerns about whether ESG performance can ever be distilled into a single score."*

* SustainAbility (2020), "Rate the Raters 2020: Investor Survey and Interview Results"
** WRI (2019), What Investors Want from Sustainability Data
*** IIF (2020), Building a Global ESG Disclosure Framework: a Path Forward

ESG Data Providers Shortcomings

	Sustainalytics	MSCI	RobecoSAM	Bloomberg ESG
Sustainalytics	1	0.53	0.76	0.66
MSCI		1	0.48	0.47
RobecoSAM			1	0.68
Bloomberg ESG				1

An examination of the cross-sectional correlations for four leading data providers' ESG scores, using the MSCI World Index as the coverage universe, shows a correlation of only 0.53 among their scores, **meaning that their ratings of companies are only consistent for about half of the coverage universe**.

Source: State Street (2019), "The ESG Data Challenge"

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