OWL analytics

# OWL ESG

*Creating More Effective ESG Scores for Better Investing*

## Foundation of OWL ESG

OWL Analytics has conducted extensive research on ESG research agencies, focusing on methodologies and materiality. We found significant inherent subjectivity in methodologies and wide variations in materiality. These findings led us to evaluate new approaches to the creation of ESG scores, resulting in the development of our proprietary technology OWL ESG. OWL ESG incorporates and optimizes the largest ESG data set in the industry, providing a more robust ESG picture of each of the over 25,000 public companies we cover worldwide.

### *Research Findings*

ESG research companies provide a very valuable service. They typically employ armies of analysts that focus on assessing the ESG risks and opportunities of companies. To make their assessments, they evaluate hundreds if not thousands of sourcesto glean ESG information about companies. Then they take that information, sometimes overlaying their own interpretation(s), and feed it into their databases and their models. The result is robust data, scores, and rankings that investors can use in numerous ways to manage money or build investment products.

Despite the valuable product they offer, evaluation of their data revealed shortcomings. We compared the top 100 US ESG scored US-listed companies from each of the studied ESG research agencies and found surprisingly little overlap. There were only 12 companies represented in all agencies' top 100. In addition, when measuring these 12 companies by rank, there was an average dispersion of 25 ranks. In the light of these inconsistencies, we looked deeper at all rated companies of the studied ESG research agencies, finding that the divergences between scores and ranks only increased across their universes.

We found a number of reasons for such subjectivity, among them:

**Different ESG Factors** Each ESG research agency has mapped what they consider relevant ESG factors to industries or sectors, essentially creating algorithms for their industry or sector groupings. Each company in their respective universes falls into the appropriate groupings. By analyzing the data available to us, including third party studies, we found there is only approximately a 50% overlap between the ESG factors that any two research companies use to produce ESG scores for any given company.

**Different Data Sources** Each research agency pulls data from different sources. While there was some overlap, each provider may or may not gather data from news sources, NGOs, research firms, and others. If they are pulling different data into their models, there will be different results even if their underlying algorithms had been exactly the same.

**Different Weighting of ESG Factors** Each research agency weights various ESG factors differently in their algorithms. These ESG factors are combined and recombined in various ways, typically receiving different weightings along the way. As a result, these subjective weighting choices create further divergence in ESG scores and ranks.

## Data Discrepancies

Even when a specific ESG factor employed to evaluate a given company is one used by two ESG research agencies, there is still often less than a 50% overlap between the actual data. This discrepancy between the data is caused by many reasons, including pulling the data from different sources, pulling from the same sources but for different periods, and even analyst errors and subjective interpretation.

As mentioned above, the ESG research agencies provide a very valuable service. The inherent faults in their approaches are necessary symptoms of the business. It takes time to collect and synthesize data with every step of the process necessitating that numerous choices must be made, especially the creation of algorithms. And where there is choice, there is subjectivity. Unfortunately, this well-known subjectivity poses significant problems for investment managers that wish to use ESG scores to manage portfolios or design financial products.

## Our Approach

From the ground up, our approach was designed to leverage the great work being done by numerous ESG research companies as well as hundreds of public data sources that provide company level insights. OWL ESG:

- **Consumes** ESG information from the aforementioned sources
- **Maps** the information to industry level ESG factors as designated by the standards organizations
- **Optimizes** data to reduce subjectivity, minimize errors, and build consensus between sources
- **Integrates** data to produce monthly scores that are timely and relevant

## Product Benefits

The results of this process are aggregated ESG scores and metrics that incorporate approximately twice as much company-specific ESG data compared to industry averages. As mentioned above, the process used to create these aggregated metrics provides a number of benefits.

**More Robust Data** OWL ESG rates every company on approximately twice as many industry- specific ESG factors than other providers.

**Reduced Subjectivity** Statistical optimization reduces bias and error and generates a consensus viewpoint for every company covered.

**Significantly More Coverage** Largest ESG data set in industry generates the most coverage; over 25,000 companies worldwide.

**Monthly Scoring** ESG scores updated monthly, instead of annually, leading to more dynamic metrics appropriate for portfolio management and indexing.

| CATEGORY | OTHER ESG SCORES | OWL ESG SCORES | OWL ESG BENEFIT |
|---|---|---|---|
| ESG Factors | Use only subset | More ESG factors | More complete ESG picture for every company |
| Data | Less data | More data | Deeper insight into companies |
| Viewpoint | Single viewpoint | Consensus viewpoint | Robust perspective increases confidence in scores |
| Process | Subjective analysis | Objective optimization | Statistical optimization reduces subjectivity and error |
| Frequency | Yearly | Monthly | More actionable ESG scores |

## *Data Sources*

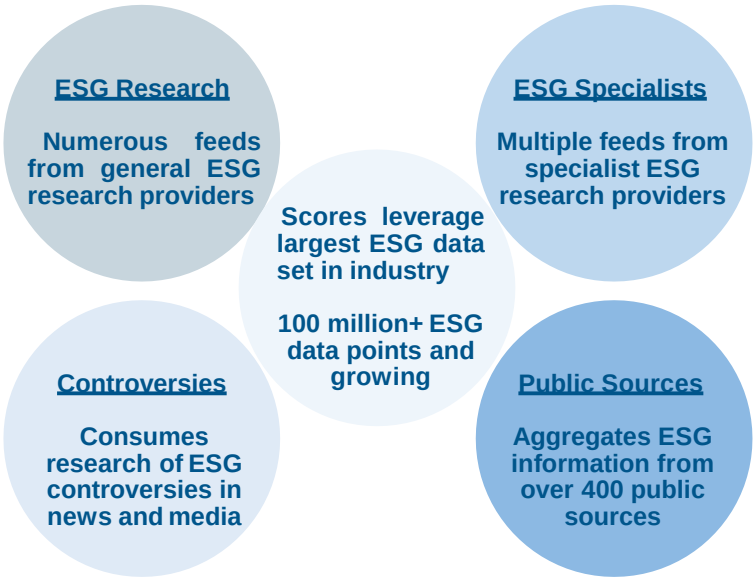
OWL ESG consumes data from over 500 sources, among them ESG research firms (both generalists and specialists), news & media outlets, non-governmental organizations (NGOs), government databases, unions and activist groups, and more.

**Generalist ESG Research Providers** These are firms that typically conduct extensive fundamental research to gather, synthesize, and analyze environmental, social, and governance data about companies. They also aggregate the data to create scores and metrics that can be used to gauge the performance of companies compared to peers regarding ESG factors. OWL ESG consumes data from many generalist ESG research providers.

**Specialist ESG Research Providers** These are firms that perform much of the same work as the generalists, but instead focus heavily on usually one of environmental, social, or governance ESG data and metrics. OWL ESG consumes data from a number of specialist ESG research providers.

**Controversy ESG Research Providers** These are firms that focus their research on news and other media sources to find controversies at companies involving ESG factors in an attempt to gauge the severity of ESG-related controversies. Many of the generalists have controversy products as well. OWL ESG consumes data from a number of controversy ESG research providers.

**Public Sources** Public source data providers come in many shapes and forms. Some are founts of deep research like the Carbon Disclosure Project. Others are public source ratings providers like Glass Door. Some are government sources like the Environmental Protection Agency. While still others are questionnaires from international organizations like the UN Global Compact.



## *Developing OWL Schemas*

In our review of other ESG research agencies, we found that there was approximately only a 50% overlap between the ESG factors that any two agencies rated any given company upon. Each of these ESG research agencies probably spent years studying ESG in general, examining ESG factors on an industry and/or sector level, optimizing their algorithms, and more. They had good reasons for why they chose which ESG factors to use in their ratings processes. But despite their good reasons, the discrepancies in their industry models exist, which is by far the leading reason that their aggregated scores and metrics differ so greatly.

### *OWL Global Schema*

Our primary goal when creating our data schema was to avoid subjective choices about which ESG factors are important to which industries. To that end, we created a global data schema built upon the collective intelligence of the leading ESG research companies, including groups like the Sustainability Accounting Standards Board (SASB) and the Global Reporting Initiative (GRI). The first step was to determine the leading research organizations' recommendations about which ESG factors are important to each industry and/or sector, and, if possible, to discover any consensus among them.

For each leading ESG researcher, we examined how they organized data at the industry and/or sector level. We saw how they separated different data elements (e.g., Females on Board) into groups representing subthemes (e.g., Board Diversity) which they then aggregated into higher level groups representing themes/ESG factors (e.g., Diversity). We observed how they combined those ESG factors into pillar scores (E, S, and G), which they combined into ESG ratings.

This rigorous approach resulted in our global schema, which is continually updated to accomplish the following main objectives:

1. Separate ESG information into subthemes and themes (ESG factors) built from the consensus of how the leading ESG researchers organize the data they gather.
2. Map ESG data elements into one or more subthemes and themes at the industry level. For example, Food Safety is just an aspect of the wider Product Safety subtheme particular to some industries.
3. Ensure that all ESG data elements deemed relevant by the leading ESG research companies for a given industry and/or sector are being used as inputs into our scores.
4. Identify to what extent various ESG elements, subthemes, and themes (ESG factors) are in consensus among the leading research agencies.

### *OWL KPIs Schemas*

As mentioned above, based upon consensus among the data schemas of leading ESG researchers, we organized ESG data elements into subthemes which we then combined into themes (ESG factors). Our global schema identifies 12 themes which we call our key performance indicators (KPIs). The below KPIs consume thousands of ESG data elements that are combined into over a hundred subthemes which often have different variations depending on the industry. Please note that the subthemes listed below each KPI represent only a sampling that can potentially feed each KPI.

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| **E1** | **Pollution Prevention**<br>Environmental Sustainability Compensation Incentives<br>Emissions Reduction Actions and Policies<br>Environmental Policy Implementation and Improvements<br>Participation in Non-Gas Environmental Risk Reducing Activities<br>Environmental Foresight in Product Development<br>Resource Reduction Policies<br>Carbon Gas Pollutant Reporting<br>Non-Carbon Gas Pollutant Reporting<br>Intensity Measurement Methodology<br>Precision of Measurement<br>Pollution Remediation Actions<br>Pollution Remediation Urgency | **Pollution Prevention KPI aggregates data regarding how much a company pollutes, it's policies to reduce said pollution, and its transition towards alternative technologies that reduce environmental harm.** |
| **E2** | **Environmental Transparency**<br>Number of Environmental Actions Disclosed<br>Number of Environmental Policies<br>Detail of Environmental Policies<br>Productivity Disclosures<br>Management Involvement<br>Firm-Wide Awareness Policy<br>Internal Auditing<br>Environmental Policy Ownership<br>Public Leadership on Environmental Issues<br>Demonstrated Commitment<br>Systematic Reporting | **Environmental Transparency KPI aggregates data about a company's policies to reduce pollution and energy consumption. It also measures a company's environmental reporting and dedication to environmental transparency.** |
| **E3** | **Resource Efficiency**<br>Biodiversity Controversies<br>Waste Reduction<br>Eco-Design of Products and Services<br>Water Use<br>Water Efficiency<br>Water Reduction Performance<br>Carbon Based Energy Use<br>Carbon Based Energy Productivity<br>Non-Carbon Based Energy Usage<br>Non-Carbon Based Energy Productivity<br>Land Use<br>Land Productivity<br>Supplier Energy Productivity<br>Resource Recycling<br>Use of Chemicals<br>Productivity of Chemicals | **Resource Efficiency KPI aggregates data about how well a company and its suppliers are reducing resource consumption, including water and energy, in the supply chain. It also includes data about the company's dedication and effectiveness in recucling/** |
| **EMP 1** | **Compensation & Satisfaction**<br>Compensation Controversies<br>Cash Compensation Policies<br>Equity & Option Compensation Policies<br>Employer Quality<br>Salary Gap<br>Employee Satisfaction & Performance<br>Work Conditions Controversies<br>Employer Awards and Recognition<br>Employee Development | **Compensation & Satisfaction KPI aggregates data involving how well a company creates loyalty in the workplace through fair pay, benefits, and other practices that encourage employee growth and productivity.** |

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| **EMP 2** | **Diversity & Rights**<br>Board Gender Diversity<br>Manager Gender Diversity<br>Non-Management Employee Gender Diversity<br>Board Racial Diversity<br>Manager Racial Diversity<br>Non-Management Employee Racial Diversity<br>Diversity Improvement Policies<br>Diversity Policy Ownership<br>Diversity Policy Performance<br>Gender Identity and Expression Anti-Discrimination Policies<br>Sexual Preference Anti-Discrimination Policies<br>Employee Turnover | **Diversity & Rights KPI aggregates data on performance and practices regarding diversity in the workplace, labor-management and relations and workforce rights.** |

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| **EMP 3** | **Education & Work Conditions**<br>Employee Health & Safety Policies<br>Employee Health & Safety Training<br>Employee Health & Safety Controversies<br>Continuing Education Offerings & Hours<br>ESG Training Offerings & Hours<br>University Partnerships<br>Health & Safety Performance<br>Human Development Performance<br>Firm Wide Competency Testing<br>Anti-Corruption Training<br>Employee Health & Safety Policy Ownership<br>Employee Continuing Education & Human Development Ownership | **Education & Work Conditions KPI aggregates data on performance and policies regarding workplace safety, worker training, and other metrics to measure worker productivity, health and morale.** |

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| **CIT 1** | **Community & Charity**<br>Corporate Responsibility Recognition<br>Indigenous People Controversies<br>Total Donations<br>Community Involvement Policy<br>Monitoring of Community Involvement Policy (Internal Ownership)<br>Social Exclusion Controversies<br>Environmental Impact Controversies<br>Stakeholder Engagement<br>Technology Know-How Sharing<br>Anti-Censorship Policies<br>Political Expenditure Oversight<br>Trade Association Expenditure Oversight<br>Oversight of Expenditures to Trade Associations<br>Firm-Wide Adoption of Corporate Citizenship Mission | **Community & Charity KPI aggregates data on how well a company treats the communities in which it does business, including data on charitable activities and volunteerism, protection of the public health, and the social and environmental impacts of products and services on local communities** |

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| **CIT 2** | **Human Rights**<br>HIV-AIDS Program<br>Freedom of Association Controversies<br>Human Rights Controversies<br>Freedom of Association Policy Monitoring<br>Human Rights Policy Monitoring<br>Supply Chain Human Rights Policy<br>Product Responsibility<br>Ties to Oppressive Regimes<br>Stakeholder Relations and Reputation<br>Child Labor Policy | **Human Rights KPI aggregates data on a company's policies and performance regarding human rights, including information on child or compulsory labor, treatment of people throughout the supply chain, and treatment of local people and populaces.** |

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| **CIT 3** | **Sustainability Integration**<br>Customer/Client Satisfaction<br>Complaint Policy<br>Complaint Policy & Customer Satisfaction Improvement<br>Animal Testing<br>Noise Pollution<br>Product Innovation<br>Product Responsibility<br>Brand Rating<br>Product Recall Policy<br>Product Danger Transparency<br>Research Guidelines<br>Environmental Product Strategy | **Sustainability Integration KPI aggregates data on how well a company evolves its product development, marketing, and sales towards creating sustainable offerings that reduce environmental impact and benefit the health the quality of life of customers** |
| **GOV 1** | **Board Effectiveness**<br>Audit Committee Independence<br>Compensation Committee Independence<br>Nomination Committee Independence<br>Board Expertise<br>CEO-Chairman Separation<br>Board Diversity<br>Board Oversight<br>Long-Term Objectives & Compensation Alignment<br>Sustainability Incentives<br>Inside Dealings Policy<br>Inside Dealings Controversies<br>Anti-Takeover Devices<br>Shareholder Rights<br>Shareholder Controversies<br>Identification of Challenges and Strategies<br>Anti-Corruption Policies<br>Anti-Corruption Oversight<br>Anti-Corruption Policy Ownership & Performance | **Board Effectiveness KPI aggregates information on policies and performance regarding independence of the Board from management, Board diversity, alignment with best practices, and effectiveness in using Board best practices to incent management to achieve financial and sustainability goals.** |
| **GOV 2** | **Management Ethics**<br>Anti-Bribery Policy<br>Crisis Management<br>Management Turnover<br>ESG Integration Strategy<br>Responsible Asset Management<br>Responsible Advertising & Marketing<br>Public Policy Stances<br>Insiders<br>Vision and Strategy<br>Board Functions<br>Accounting Policies<br>Accounting Controversies<br>Global Reporting<br>Remuneration Policy<br>Management Leadership on Environmental Issues<br>Management Leadership on Social Issues<br>Share Structure<br>Environmental Auditing<br>Social Auditing<br>Pension & Retirement Funding | **Management Ethics KPI aggregates data on how well a company manages relationships with stakeholders, including information on how well a company integrates ethics into decisions and policies, its performance on eqitable treatment of shareholders, and its commitment to integrating ESG considerations into company operations.** |
| **GOV 3** | **Disclosure & Accountability**<br>Fraud Controversy Disclosure<br>Fraud Avoidance & Management<br>Board Monitoring Reporting<br>Product Trial Result Disclosure<br>CSR Reporting Audit<br>Total Disclosure<br>Social Product Labeling<br>Environmental Product Labeling<br>Compensation Policy Reporting<br>Environmental Policy Performance Reporting<br>Social Policy Performance Reporting<br>Reporting Framework Participation | **Disclosure & Accountability KPI aggregates information on the quality of reporting regarding sustainability goals, engagement of employees and management in sustainability performance, and the thoroughness of transparency to all stakeholders.** |

## *Data Aggregation & Optimization*

The next step in the methodology is to feed data elements into our schemas so we can produce ESG metrics. As always, our goal is to provide an industry consensus viewpoint score around ESG themes for each and every company we cover. We believe our approach to converting, optimizing, and aggregating data within the KPIs accomplishes the goal.

**Conversion** Information from our different ESG data sources comes in many different formats. It may be expressed as raw data — for example, the amount of carbon emissions. It may be a simple yes or no. It may already be expressed as a rating. The conversion process takes those raw inputs and transforms them into scores between 0 and 100. To accomplish this, we look at each data element from each data source separately. Continuing with the example of carbon emissions, our system would begin by looking at the carbon emissions metric for all of the companies as reported upon by Source 1. This generates a distribution curve of results which provides us a road map to translate the carbon emissions data on every company from Source 1 to a 0–100 score. We then follow the same process for carbon emissions data from Source 2 (which may have a different dispersion curve). We continue to do this for every data point for every company for every source until all information consumed from our sources has been translated to a 0–100 score.

**Optimization** There is often disagreement between sources. The goal of the optimization process is to build consensus from disagreeing data sources. Using the carbon emissions example, let's say there are five sources that report on carbon emissions for the companies they cover. Source 1 could have 60% of companies reporting low carbon emissions, such that a company with typically low emissions would receive a score of around 40. Sources 2–5 all could have approximately 52% of companies reporting low emissions, such that a company with typically low emissions would receive a score of around 48. To bring Source 1 in line with the others, scores on carbon emissions for Source 1 companies would be adjusted such that a company with typically low emissions would receive a score closer to 48 instead of the original
40. In this manner, there would be a similar baseline 0–100 scores for all companies reporting a similar carbon emissions level. However, the fact would remain that any given company would still receive five different 0–100 carbon emissions scores (assuming all five sources report on the carbon emissions for that company) in the case when those sources disagree on the raw data, i.e., the levels of carbon emissions of that company.

**Aggregation** Data elements scored on the 0–100 scale are then aggregated up to their appropriate KPIs. At the KPI level, we utilize certain rules — factor-consensus weighting, data threshold, metric-consensus weighting, and timeliness weighting — to generate KPI scores using the data elements at hand.

The first rule is not one imposed by our methodology but rather, by our sources. We only rate companies on ESG metrics for which we have information. If more of our sources are reporting on certain ESG factors mapped to a KPI than other factors mapped to that same KPI, those reported factors will automatically have more "weight" within that KPI's score. For example, if more of our sources are reporting on carbon emissions for a company and less are reporting on non-carbon gas emissions for that same company, then our approach will weight carbon emissions more heavily than non-carbon emissions within the KPI. As we mentioned, our underlying sources have expended significant resources optimizing their models to include ESG data they determine to fit their definitions of "material". Our approach rewards consensus by overweighting it and sidelines lack of consensus by under-weighting it. Said another way, our approach automatically gives a higher weight to data associated with ESG factors that more sources determine are materially relevant for a given company within a given industry.

The second rule is that there is a minimum amount of ESG information required for a company to receive a score for a KPI. While we receive information from many sources, a large portion of the data ultimately comes from ESG information disclosure from the companies themselves. ESG disclosure is a voluntary process. No two companies disclose information on the exact same ESG factors, which makes it very difficult to create apples-to-apples comparisons between companies, even for two companies in the same industry. There can be many reasons a company may not disclose specific ESG information, ranging from the company having "bad" metrics to not having a process in place to track that information. Some ESG research providers give zeroes when a company doesn't report on an ESG factor. Others give an average score when a company doesn't report on an ESG factor. We believe both approaches are wrong. In the former, using carbon emissions as an example, giving a zero would automatically designate a company as one of the worst carbon polluters. In the latter, giving an average score would encourage heavy polluters to not disclose information on carbon emissions. As a result, we've made the decision to only score ESG factors for which we have the information. Therefore, to ensure that KPI scores are meaningful, there is a minimum amount of data required relative to industry peers for a company to be given a KPI score.

The third rule governs whether we include an individual data element from a source and how to weight that element when calculating a subtheme score. As always, we use our consensus approach to determine which elements to weight more heavily than others. In some instances, however, a certain data point about a company from a source may diverge substantially from similar data points for that same company from other sources. If the source of that data point is deemed credible, we include that data point in the calculation of the sub-theme score. If the source is deemed less credible, we may eliminate that data point from the calculation. The way we determine source credibility is by looking at all the data on all the companies that a source has published since inception and compare it to the same from all other sources. The higher the correlation between a source's data and that of all other sources, the more credible we deem that source.

The fourth rule is how we weight data elements based on time. More recent data on an ESG factor will be weighted higher than less recent data. Once again using the carbon emission example, if one source's carbon emissions data is more recent for a company, it will be weighted higher than the older carbon emissions data from the other sources.

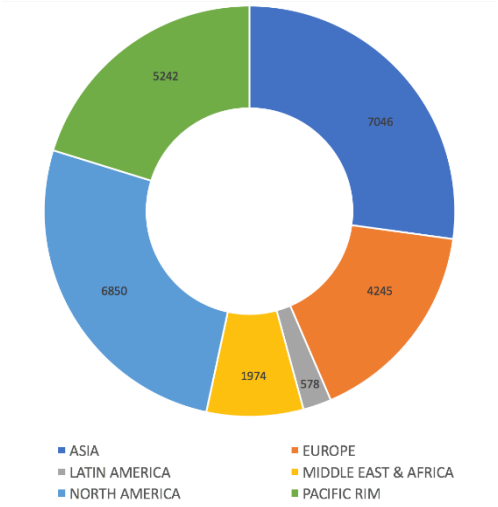
## *ESG Scores*

The data conversion, optimization, and aggregation process calculates KPI scores of 0-100. To calculate other ESG metrics, we utilize the following rules:

- E1, E2, and E3 are averaged to create the Earth Score measured at 0-100.
- EMP1, EMP2, and EMP3 are averaged to create the Employer Score measured at 0-100.
- CIT1, CIT2, and CIT3 are averaged to create the Citizenship Score measured at 0-100.
- The Employer and Citizenship scores are averages to create the Social Score measured at 0-100.
- G1, G2, and G3 are averaged to create the Governance Score measured at 0-100.
- Earth, Social, and Governance scores are averaged to create the overall ESG Score measured at 1-100.


### *Coverage*

Because we receive data from so many different sources on so many different companies, we are able cover over 25,000 public companies, significantly more than other providers.




### *Frequency*

Due to our diverse data sources, we are constantly receiving relevant ESG information about the companies we cover, enabling us to produce scores approximately every month.

### *OWL Peer Group Analytics*

OWL Analytics offers additional ESG metrics designed to help clients compare companies to their logical peer group and to identify which of our KPIs have been important financial factors for the companies in those peer groups.

**Peer Groups** We separate the companies we cover into 361 peer groups. Peer groups are designated by one of three factor pairs — Region and Industry, Region and Subsector, or Region and Sector. A company can belong to at most three peer groups. The purpose of dividing companies into peer groups is so we can isolate as many variables as possible affecting the financial performance of companies within those peer groups. Moreover, research has shown that not all ESG factors are as important to some industries and/or sectors as they are to others. In fact, some ESG factors have been shown to be positively material to some industries while simultaneously negatively material to other industries. As in all things, it is valuable to compare characteristics — whether financial or sustainable — within the appropriate context. Our peer group metrics provide that context.

**Materiality Map** OWL Peer Group Analytics provides a materiality map which shows the KPIs that have been materially relevant to different financial metrics. To create that materiality map, we ran Spearman's rank-order correlation analysis for each of our 361 peer groups between each of our 12 KPIs and 20+ financial metrics. The end result is that for each peer group we provide the following information for each KPI/financial metric pair.

- Spearman's Rank Correlation Coefficient
- Number of observations
- Significance Level (5% or 1%)

Not all companies in our universe have sector, industry, or subsector designations. But for those companies that do, we provide valuable insight into how our KPIs have historically rank-correlated to financial factors. Using our materiality map, our clients can cross reference each company to their appropriate peer group(s) to determine which KPIs have been predictive of future financial outperformance compared to peers.

**Ranks & Percentiles** For every company, we provide their monthly rank and percentile within their appropriate peer group(s) in every one of our ESG metrics. This allows clients to quickly identify how a company compares to their logical peers across all of our metrics.

**Hybrid & Max Correlation Metrics** Using our OWL Peer Analytics output, we created two new versions of our pillar scores (E, S, G, EMP, and CIT) and two new versions of the ESG score.

**Hybrid Scores** are created through a proprietary algorithm which gives more weight to our KPIs that have had strong positive rank-correlation within a peer group to financial metrics, which themselves have been strongly rank-correlated to total return. For example, E Hybrid is created by combining E1, E2, and E3 through a proprietary algorithm that weights higher the E KPIs that have been strongly rank-correlated to the financial metrics that have been strongly rank- correlated to total returns.

**Max Correlation Scores** are created through a proprietary algorithm which gives more weight to our KPIs that have had strong positive AND negative rank-correlation within a peer group to financial metrics which themselves have been strongly rank-correlated to total return. For example, E Max Correlation is created by combining E1, E2, and E3 through a proprietary algorithm that weights the E KPIs higher that have been strongly positively and negatively rank-correlated to financial metrics that have been strongly rank-correlated to total returns.

The difference between Hybrid Scores and Max Correlation Scores is that the Max Correlation Scores reward companies when they are ranked low within their peer group(s) on KPIs that are negatively rank-correlated to financial metrics — in other words, it rewards companies for being ranked low on KPIs when a low rank could be predictive of positive financial performance.

The following additional metrics are generated from our proprietary algorithms.

- ESG
- ESG Hybrid
- ESG Max Correlation
- E
- E Hybrid
- E Max Correlation
- S
- S Hybrid
- S Max Correlation
- G
- G Hybrid
- G Max Correlation
- EMP
- EMP Hybrid
- EMP Max Correlation
- CIT
- CIT Hybrid
- CIT Max Correlation

### *Research & Quality Assurance*

OWL Analytics considers quality assurance of the utmost importance. The goals of our quality assurance are twofold; first to ensure that our technology is functioning according to design, and second to ensure that our ESG scores continue to provide the best industry consensus for every company covered.

To accomplish these goals, we:

- Review research and recommendations from the standards organization so that we can keep our global schema in line with industry consensus.
- Review the schemas from our data sources so that we can keep our KPI schemas in line with the ESG themes common to them all.
- Periodically identify and integrate new sources of ESG data into our technology.
- Every month, manually generate ESG metrics for a portion of covered companies to ensure our technology is working correctly.

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