UNDERSTANDING ESG INCIDENTS: KEY LESSONS FOR INVESTORS

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Executive Summary

Key insights

A complete exploration of incident categories...

- The number of incidents processed by Sustainalytics grew from 6,400 in 2014 to over 13,000 in 2016.
- Incidents are dominated by two categories: Quality and Safety and Business Ethics, which together account for 30% of all incidents.
- Two types run against the grain: Bribery and Corruption and Water Releases are both relatively common and high-impact, signalling high significance for investors.

...the most exposed industries...

- The Banks industry accounts for 19% of all incidents, more than twice the amount of the next most exposed industry, Food Products.
- The Automobiles industry has the highest incident risk coefficient (0.52), while the Real Estate industry has the lowest (0.07).
- Firm size is a strong predictor of incidents: mega caps are involved with an average of 106 incidents per company, compared to 15 for large caps and 3 for small caps.

...and the countries at greatest risk.

- Over 40% of all incidents occur in the US. Other incident hotspots include the UK (6% of all incidents) and India (5%).
- Kenya, South Africa, Malaysia and Chile stand out as particularly risky countries from an incident per unit of gross domestic product (GDP) perspective.
- The relative contribution of domestic firms to a country’s incident count varies significantly, ranging from 87% in Taiwan to 13% in Belgium.

We develop several ideas to apply incident analysis in portfolio strategy.

- High to severe incidents are associated with a 6% average decline in the market capitalization of affected companies, measured during a ten-day incident window.
- Incident-driven share price effects are likely to be of greater relative importance in low beta industries, which are at slightly higher incident risk than high beta ones.
- A portfolio of top incident performers outpaced the global equity market by 11% from 2014 to 2017, suggesting outperformance potential of incidents analysis.
- Investors can improve their incident exposure through a tilting strategy, which ranges from +0.5% for the Technology industry to -0.2% for Consumer Goods.

Extracting value from incidents analysis

In this report, we offer the first-ever quantitative analysis of Sustainalytics’ incident dataset, which is populated by machine learning algorithms that monitor approximately 60,000 sources of information across the globe. The findings are highly illuminating. Based on an analysis of 29,000 incidents, we show which types matter most, which industries are most exposed and where incidents are occurring. We also explore ways that investors can apply incidents analysis in their portfolio and engagement strategies.
Breaking new ground

Incidents – company activities that generate undesirable social or environmental effects – are a valuable source of information for investors. Incidents can reflect gaps in a company’s management systems, vulnerabilities in corporate strategy and lapses in policy development, all of which are germane to company analysis and evaluation.

Incidents can also have direct financial effects. Many well-known examples of shareholder value destruction over the last few years, including product safety concerns at Samsung, the Dakota Access Pipeline controversy and the Volkswagen emissions scandal, were all “incidents” in Sustainalytics’ nomenclature.

In this study, we analyze 29,000 incidents that took place in 176 countries from 2014-2016 and identify the essential themes and trends. We also develop several applications of our analysis for investors to consider in their investment process and engagement strategies. Below we highlight some of the study’s key findings.

The what of incidents

Incidents are increasing

The number of incidents captured by Sustainalytics increased from 6,400 in 2014 to 13,465 in 2016. This is partly a reflection of our expanding coverage universe, the growing number of incidents per company and increasing news flow. The probability that investors will encounter incident-driven portfolio impacts is also on the rise.

Figure 1: Incidents by year and environmental, social and governance (ESG) theme

Not all incidents are equal

Of 45 possible incident tags, the 10 most common account for 66% of all incidents, and the two most common tags, Quality and Safety and Business Ethics, account for 30%. We found an inverse relationship between incident frequency and incident impact: severe-impact incidents account for only 1% of the 29,000 we analyzed.
Yet some types are higher impact than others. Resilience incidents, for example, are not particularly frequent, but when they do occur, they tend to be impactful. Nearly one-third (30%) are high or severe impact, well above the overall average of 6%.

When we combine these two threads – incident frequency and impact – two categories float to the top: Bribery and Corruption and Water Releases. They are relatively common and high impact, and should be of special significance for investors.

The who of incidents

Some industries are more exposed than others

Industry incident risk coefficients, presented in Table 1, offer a size-adjusted measure of incident risk. They show the proportion of companies within industries that experienced at least one incident from 2014 – 2016. From this standpoint, Automobiles is the riskiest industry (coefficient of 0.52) and Real Estate the least risky (0.07).

**Table 1: Industry incident risk coefficients**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Incident risk coefficient*</th>
<th>Number of companies†</th>
<th>Industry</th>
<th>Incident risk coefficient*</th>
<th>Number of companies†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automobiles</td>
<td>0.52</td>
<td>49</td>
<td>Chemicals</td>
<td>0.27</td>
<td>183</td>
</tr>
<tr>
<td>Aerospace &amp; Defense</td>
<td>0.49</td>
<td>49</td>
<td>Retailing</td>
<td>0.27</td>
<td>215</td>
</tr>
<tr>
<td>Precious Metals</td>
<td>0.42</td>
<td>86</td>
<td>Diversified Financials</td>
<td>0.27</td>
<td>348</td>
</tr>
<tr>
<td>Banks</td>
<td>0.41</td>
<td>520</td>
<td>Paper &amp; Forestry</td>
<td>0.26</td>
<td>39</td>
</tr>
<tr>
<td>Diversified Metals</td>
<td>0.40</td>
<td>87</td>
<td>Healthcare</td>
<td>0.25</td>
<td>180</td>
</tr>
<tr>
<td>Household Products</td>
<td>0.39</td>
<td>47</td>
<td>Commercial Services</td>
<td>0.24</td>
<td>137</td>
</tr>
<tr>
<td>Food Retailers</td>
<td>0.38</td>
<td>91</td>
<td>Electrical Equipment</td>
<td>0.23</td>
<td>71</td>
</tr>
<tr>
<td>Refiners &amp; Pipelines</td>
<td>0.37</td>
<td>80</td>
<td>Energy Services</td>
<td>0.23</td>
<td>87</td>
</tr>
<tr>
<td>Oil &amp; Gas Producers</td>
<td>0.36</td>
<td>214</td>
<td>Media</td>
<td>0.23</td>
<td>144</td>
</tr>
<tr>
<td>Construction &amp; Engineering</td>
<td>0.36</td>
<td>114</td>
<td>Traders &amp; Distributors</td>
<td>0.23</td>
<td>56</td>
</tr>
<tr>
<td>Steel</td>
<td>0.36</td>
<td>89</td>
<td>Consumer Durables</td>
<td>0.22</td>
<td>60</td>
</tr>
<tr>
<td>Insurance</td>
<td>0.36</td>
<td>177</td>
<td>Technology Hardware</td>
<td>0.19</td>
<td>205</td>
</tr>
<tr>
<td>Telecommunication Services</td>
<td>0.35</td>
<td>146</td>
<td>Software &amp; Services</td>
<td>0.19</td>
<td>250</td>
</tr>
<tr>
<td>Construction Materials</td>
<td>0.35</td>
<td>55</td>
<td>Machinery</td>
<td>0.19</td>
<td>189</td>
</tr>
<tr>
<td>Transportation</td>
<td>0.33</td>
<td>163</td>
<td>Containers &amp; Packaging</td>
<td>0.18</td>
<td>32</td>
</tr>
<tr>
<td>Consumer Services</td>
<td>0.32</td>
<td>159</td>
<td>Building Products</td>
<td>0.18</td>
<td>38</td>
</tr>
<tr>
<td>Food Products</td>
<td>0.30</td>
<td>295</td>
<td>Pharmaceuticals</td>
<td>0.16</td>
<td>234</td>
</tr>
<tr>
<td>Utilities</td>
<td>0.30</td>
<td>285</td>
<td>Semiconductors</td>
<td>0.15</td>
<td>124</td>
</tr>
<tr>
<td>Industrial Conglomerates</td>
<td>0.29</td>
<td>65</td>
<td>Homebuilders</td>
<td>0.13</td>
<td>34</td>
</tr>
<tr>
<td>Auto Components</td>
<td>0.28</td>
<td>76</td>
<td>Transportation Infrastructure</td>
<td>0.09</td>
<td>74</td>
</tr>
<tr>
<td>Textiles &amp; Apparel</td>
<td>0.27</td>
<td>66</td>
<td>Real Estate</td>
<td>0.07</td>
<td>376</td>
</tr>
</tbody>
</table>

*Average number of ESG profile companies that produced incidents divided by the average total number of ESG profile companies (2014-2016).
†Average number of ESG profile companies (2014-2016).

Source: Sustainalytics
Mega caps are involved with an average of 106 incidents per company

The US accounts for 40% of all incidents

Size as a predictor
Larger companies tend to produce more incidents due to their more extensive operational footprint and supply chain, and the disproportionate amount of attention they command from the media. Mega cap companies are involved with an average of 106 incidents per company. This compares to 15 for large caps, four for mid caps and three for small and micro caps.

The where of incidents
Incident hotspots
As shown in Figure 2, incident hotspots include the US (40% of all incidents), followed by the UK (6%) and India (5%). However, Kenya, South Africa, Malaysia and Chile have the highest number of incidents per unit of GDP, at 346, 160, 96 and 82, respectively. Germany has the lowest number of incidents per unit of GDP at 11, followed by Japan (12), Mexico (15), and France and Italy (16).

Figure 2: Distribution of incidents by country

Source: Sustainalytics

Domestic vs foreign firms
Incidents taking place within a given country can involve domestic firms or the local operations of foreign firms. The proportion of a country’s incidents that involve domestic firms, which we refer to as “domestic incident bias,” ranges from 87% in Taiwan to 13% in Belgium. Domestic incident bias may reflect the relative importance of domestic firms in a country’s economy. It may also speak to different operating norms between “homegrown” companies and the local operations of foreign firms.
Links to portfolio and engagement strategy

Market cap effects

Incidents are associated with important share price effects. Over two-thirds (69%) of companies that experienced a high to severe incident also experienced a market cap decline during a ten-day incident window (five days before and five days after the incident). The average decline was 6%. For incidents with a significant impact, 54% of companies experienced a market cap decline, with an average decline of 1%. Incidents may not be causing the market cap declines, but the correlation certainly merits further investigation.

Industry tilts

We show that investors can improve their portfolio exposure to incidents through a tilting strategy. The tilts, which range from +0.5% for the Technology industry to -0.2% for Consumer Goods, are based on the base weights of the FTSE Global All Cap Index.

Figure 3: Incident-driven industry tilts

Blending with beta

We take a look at industry beta in the context of incident exposure. We find low beta industries – including Utilities, Banks, Insurance, Automobiles and Household Products – have slightly higher incident risk than high beta industries (0.31 compared to 0.27). This is important because any share price effects triggered by an ESG incident are likely to be of greater relative importance in less volatile industries.

Portfolio development

We build a concentrated portfolio of top incident performers – the Sustainalytics Incident Proof Portfolio – and backtest it against the global equity market. The portfolio delivered a total return of 45.9% from January 2014 to October 2017, compared to 34.9% for the FTSE Global All Cap Index.
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Outperformance potential of incident analysis

We constructed the portfolio using a simple set of rules and with information that was available to the market prior to each rebalancing date, such that the strategy could have been executed. The results suggest a security’s incident performance – the number and type of ESG incidents that it faces or avoids – may contain an outperformance signal that is rewarded by the market.

**Figure 4: The Sustainalytics Incident Proof Portfolio**

![Chart showing the performance of the Sustainalytics Incident Proof Portfolio compared to the FTSE Global All Cap Index indexed to 100 from January 2014.]

*Source: Sustainalytics, Bloomberg*

More advanced machine learning

We expect portfolio strategies that leverage incidents to proliferate in the future, together with more advanced machine learning algorithms that support more refined probabilities of company involvement in incidents.

Issue selection process in corporate engagements

Asset owners and managers have internal processes for determining which ESG issues to engage their portfolio companies on. We sketch out a strategy for “incident-driven engagement,” where investors target incident categories that are relatively common, and whose effects are relatively high impact, in their conversations with companies.

Narrowing the engagement conversation

Many of the prominent themes in this analysis, including water management and product quality and safety, are not currently among a sample of top engagement issues. Incorporating incident analysis into an investor’s engagement selection process can help narrow the conversation on specific topics that are having the largest adverse social and environmental impacts across the economy.

Looking ahead

If policies and programmes are the talk of corporate ESG management, then incidents are the walk. As a result, we believe investors can capture value by taking a closer look at this information in their portfolio and engagement strategies. The research, analysis and ideas that we introduce in this paper are designed to help asset managers, asset owners and other investors begin this process.
Incidents can reveal gaps in management and impact shareholder value

Table 2: Ten high-profile incidents, 2014-2016

<table>
<thead>
<tr>
<th>Incident date</th>
<th>Company</th>
<th>Location</th>
<th>Incident tag</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec-2016</td>
<td>Banca Monte dei Paschi di Sienna</td>
<td>Italy</td>
<td>Resilience</td>
<td>The Italian parliament approves a state bailout worth USD 6.1 billion. This is Banca Monte dei Paschi di Sienna’s third major bailout, with company shareholders and junior bondholders contributing EUR 4.3bn.</td>
</tr>
<tr>
<td>Oct-2016</td>
<td>Samsung</td>
<td>Global</td>
<td>Quality and Safety</td>
<td>Samsung recalls all Note 7 devices and halts production after multiple cases of their batteries catching fire. Multiple investigations are pending, and sources estimate that the company could suffer up to USD 17bn in lost revenue because of this incident.</td>
</tr>
<tr>
<td>Sep-2016</td>
<td>Wells Fargo</td>
<td>US</td>
<td>Business Ethics</td>
<td>Wells Fargo pays USD 190mn in regulatory fines and USD 142mn to settle a class action lawsuit after creating two million customer accounts without authorization. Additional lawsuits and regulatory investigations are pending.</td>
</tr>
<tr>
<td>Aug-2016</td>
<td>Energy Transfer Partners</td>
<td>US</td>
<td>Conflicts with Indigenous Communities</td>
<td>Protests among indigenous and community groups disrupt construction of the USD 4bn Dakota Access Pipeline project and impose costs of USD 500mn on Energy Transfer Partners.</td>
</tr>
<tr>
<td>Apr-2016</td>
<td>Multiple</td>
<td>Panama</td>
<td>Business Ethics</td>
<td>More than 500 banks are connected to fraud, tax evasion and offshoring activities after 11.5 million documents are leaked from Panamanian law firm Mossack Fonseca. The scandal leads to public scrutiny and heightened regulations.</td>
</tr>
<tr>
<td>Aug-2015</td>
<td>Exxon</td>
<td>US</td>
<td>Health and Safety</td>
<td>Exxon is issued a USD 566,000 fine for occupational health and safety violations related to an explosion at its Torrance Refinery. The explosion results in an estimated gross revenue loss of USD 700mn.</td>
</tr>
<tr>
<td>Oct-2015</td>
<td>Volkswagen</td>
<td>Germany</td>
<td>Business Ethics</td>
<td>Volkswagen admits to falsifying emission standards tests and later agrees to pay up to USD 13bn in regulatory penalties and settlements. Individual and class action lawsuits continue in 17 countries.</td>
</tr>
<tr>
<td>May-2015</td>
<td>Toshiba</td>
<td>Japan</td>
<td>Accounting Irregularities</td>
<td>Toshiba overstates its profits by USD 400mn for the previous three years and is fined USD 62mn for fraudulent accounting, the largest fine ever imposed in Japan. The company is forced to revise its profit for this period by USD 1.3bn.</td>
</tr>
<tr>
<td>Nov-2014</td>
<td>Home Depot</td>
<td>US</td>
<td>Data Privacy and Security</td>
<td>Over 40 class action lawsuits are launched against Home Depot by customers whose personal data was compromised in a sweeping data breach. The company confirms in its Annual Report that at least 60 million customers are affected.</td>
</tr>
<tr>
<td>Mar-2014</td>
<td>Petrobras</td>
<td>Brazil</td>
<td>Bribery and Corruption</td>
<td>A government investigation reveals that Petrobras executives were involved in the largest corruption scandal in Brazil’s history, with bribes in excess of USD 3bn received over ten years.</td>
</tr>
</tbody>
</table>

Source: Sustainalytics

Understanding incidents

At Sustainalytics, the word “incident” has a unique and specific meaning. It refers to a company activity that generates undesirable social or environmental effects. Understanding incidents – which types are occurring, where they are happening, and which companies are involved – is vital to making well-informed investment decisions in today’s global marketplace. This is because (1) incidents can reveal weaknesses in a company’s management systems and (2) incidents can have important financial effects for affected firms and their shareholders (in addition to broader social and environmental consequences). Table 2 reviews ten high-profile incidents from recent years and summarizes the related financial costs.

Information from incidents

A company’s incident track record contains valuable information for investors. A preponderance of incidents may suggest gaps in ESG programmes, vulnerabilities in corporate strategy, insufficient enforcement of policies, inadequate governance structures, or poor decision making. How a company responds to an incident is also important: some firms respond quickly and transparently to an incident, others less so. Not all incidents are indicative of management failures: some are unpredictable, out-of-the-blue accidents. But in general, incidents say something about the companies involved.
Setting report parameters

This report examines a three-year (2014-2016) segment of Sustainalytics’ incidents database, which includes 50,000 incidents that date back to the early 1990s.

Our analysis focuses on the following three overarching questions, which we refer to as the “what,” “who” and “where” of incidents:

1. Which types of incidents are occurring? We group incidents by their main tag and impact level and look for trends in the data.

2. Which industries are most involved? We analyze the incident involvement of companies based on their industry classification and size.

3. Where are incidents occurring? We produce a country-level distribution of incidents, look at incidents per unit of GDP, and the involvement of domestic vs foreign companies.

Unlocking value for investors

Sustainalytics’ incident database contains a wealth of information. Even the truncated window that we look at in this report (incidents that took place between 1 January 2014 and 31 December 2016) contains over 29,000 observations. As shown in Table 3, careful analysis of this rich and unique dataset can provide a number of benefits for investors.

Table 3: Value for investors

<table>
<thead>
<tr>
<th>The study...</th>
<th>Which allows investors to...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determines which industries and markets that are most prone to incident risk</td>
<td>Tilt target industry and country weights to optimize incident exposure.</td>
</tr>
<tr>
<td>Identifies companies that are top incident performers within industries</td>
<td>Incorporate incident performance into their security selection process.</td>
</tr>
<tr>
<td>Zeroes in on the most common and most impactful incident categories</td>
<td>Recalibrate their engagement issue selection process to capture important incident types.</td>
</tr>
</tbody>
</table>

Source: Sustainalytics

Organization of the report

The paper proceeds by reviewing key background information regarding Sustainalytics’ approach to classifying, tracking and assessing incidents. We then detail the study’s methodology and the approach we took to build the requisite dataset. In the next section we analyze 29,095 incidents and pursue the three overarching questions mentioned above. We follow up this analysis by showing how investors can make use of our findings in portfolio and engagement processes. We conclude the report by summarizing the main lessons of the study and charting a course for further research.
Understanding ESG incidents: Key lessons for investors

Background

Classifying, tracking and assessing incidents

An incident is a company activity that has unintended or undesired negative environmental or social effects. Such activities include single occurrences, such as a mine explosion, or an ongoing practice, such as the use of child labour in factories. An incident chain consists of an initial incident that is followed by related incidents and news updates, which account for developments that may result in changes to the incident assessment.

Tagging incidents

Sustainalytics continuously tracks and records corporate activities by linking each incident to an individual company, location and date. Our incident and sector teams categorize each incident as one of 45 incident types (also known as incident “tags”). Each incident type is defined in the Appendix. While most incident types apply to multiple industries, some pertain to only a single industry.

Incidents are company-specific

Incidents are company-specific. For example, an explosion at a pipeline co-owned by Company A and Company B would generate two incidents: one for Company A and another for Company B. While this approach may overstate the number of incidents occurring in the economy, it recognizes that an incident can present different levels of risk for involved companies.

Mining multiple sources and cataloguing information

We capture corporate incidents by drawing on Sustainalytics analysts’ research, which is complemented by information acquired through proprietary software. This software applies learning algorithms to search and filter approximately 60,000 different sources, including reputable international and local news networks, specialized publications, non-governmental organization (NGO) documents and a range of primary sources, such as company statements and press releases. Our software collects this flow of data in real time and directs it to teams of analysts who conduct ongoing company research. Within 72 hours of the publication of news about an issuer’s alleged or actual misconduct, our research teams process the story as an incident.

Criteria of assessment

Sustainalytics assesses each incident according to two criteria: its sustainability impact and the reputational risk it presents. These criteria are quantified on a scale of 1-10 (the larger the number, the greater the impact/risk). The factors listed in Table 4 inform these assessments.

Table 4: Key incident assessment considerations

<table>
<thead>
<tr>
<th>Incident assessment criteria</th>
<th>Assessment factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainability impact</td>
<td>Severity of the impact</td>
</tr>
<tr>
<td></td>
<td>Accountability of the company</td>
</tr>
<tr>
<td></td>
<td>Exceptionality of the company’s involvement</td>
</tr>
<tr>
<td>Reputational risk</td>
<td>Notoriety</td>
</tr>
<tr>
<td></td>
<td>Exposure</td>
</tr>
</tbody>
</table>

Source: Sustainalytics
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Sustainability impact

The sustainability impact of an incident measures its severity, the accountability of a company and the exceptionality of its involvement.

Severity of the impact

The severity of an incident depends on its depth, breadth, and duration. These factors are assessed by looking at how an incident impacts a society's ability to function economically, politically and culturally, whether breaches of legislation or violations of international norms occurred, the number and gravity of associated injuries or fatalities, and the timespan during which relevant effects of an incident unfolded.

Accountability of company

Accountability refers to the level of involvement of different corporate entities (parent companies, subsidiaries, joint ventures, etc.) that may be responsible for an incident. Guiding considerations for assessing these issues include determining the context of the incident, the degree of control a company had to prevent the incident, and whether the firm is in a position to prevent such incidents from occurring in the future.

Degree of exceptionality

Exceptionality measures the degree to which an incident corresponds with industry patterns of corporate behavior. Important considerations include whether other companies have been involved in similar incidents in the same country or sector and, if so, whether anything about the case in question distinguishes it from the others. The exceptionality of an incident can be supported by quantitative factors, such as fines, penalties, settlements, fatalities, injuries, magnitude of damages (e.g. volume of a spill), the number of products affected or recalled, and the number of customers affected.

Reputational risk

Reputational risk pertains to the degree of notoriety and exposure resulting from an incident.

Notoriety

Notoriety measures the extent to which an incident has been covered by the media, taking into account the frequency of published news items covering the incident, the reach and relevance of the reporting media sources and the tone of news items. We also consider the reputation and credibility of the source, and discount stories from organizations that appear to be of questionable journalistic integrity.

Exposure

Exposure considers the degree to which companies are susceptible to further ESG-related risks through company involvement in a controversy, and the extent of reputational damage associated with potential business ethics violations. Factors that influence exposure include whether an incident is linked to key ESG issues for the involved company’s industry, whether it is likely to generate stakeholder concern and compromise stakeholder trust, whether it involved ethics violations, such as bribery, corruption or fraud, whether management was or should have been aware of the potential for the incident before it occurred, and the level of employee involvement.

Timing

Incidents typically survive for three years or less

In most cases, incidents tend to get resolved or cease to have a material impact on the company or stakeholders after three years, in which case the incident “expires.” However, there are also cases where incidents continue to exert a material impact after three years.
Methodology

The three steps involved in conducting this study were (1) building the dataset, (2) answering the study’s three guiding questions and (3) identifying ways that investors can integrate the findings into portfolio strategies and engagement processes.

Assembling the database

In order to answer this study’s three overarching questions, we built a customized database that drew upon three distinct sets of data: (i) incident data, (ii) company data and (iii) financial data. Key data points and sources can be found in Table 5.

Table 5: Key data points and sources of information

<table>
<thead>
<tr>
<th>Data points</th>
<th>Incident data</th>
<th>Company data</th>
<th>Financial data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk and impact values, dates, locations, company names</td>
<td>Source: Sustainalytics</td>
<td>Company ESG scores, industry classifications</td>
<td>Market cap data</td>
</tr>
</tbody>
</table>

Cross-referencing dates

The scope of this study includes all incidents that occurred between 1 January 2014 and 31 December 2016. Each company’s ESG score and market cap correspond to an individual incident date. We collected company ESG scores as they stood on the date of a given incident, as well as one month before the incident’s occurrence. We collected companies’ market cap values on the date of a given incident, as well as five days before and after the incident’s occurrence.

Descriptive statistics of the dataset are shown in Table 6. In its broadest form, the dataset consists of 29,095 incidents. However, the number of working observations depended on the type of analysis. For example, as market cap data is available for only 3,905 of the 4,540 companies represented in the starting database, our analysis of the financial implications of incidents (p. 28) was based on 25,159 incidents.

Table 6: Descriptive statistics of the dataset

<table>
<thead>
<tr>
<th></th>
<th>Full incidents universe</th>
<th>Incidents universe with market cap</th>
<th>Incidents universe with ESG scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of incidents</td>
<td>29,095</td>
<td>25,159</td>
<td>22,330</td>
</tr>
<tr>
<td>Initial incidents</td>
<td>16,657</td>
<td>14,564</td>
<td>12,513</td>
</tr>
<tr>
<td>Unique companies</td>
<td>4,540</td>
<td>3,905</td>
<td>2,530</td>
</tr>
<tr>
<td>Countries of incidents</td>
<td>176</td>
<td>168</td>
<td>168</td>
</tr>
<tr>
<td>Country HQs</td>
<td>105</td>
<td>86</td>
<td>66</td>
</tr>
<tr>
<td>Incident types</td>
<td>46</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>Industries</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
</tbody>
</table>

Source: Sustainalytics
Answering the research questions

For each section of our analysis, we focused on two broad considerations: (1) incident frequency and (2) level of incident impact. While gauging incident frequency simply involved counting the number of incidents associated with each incident tag, industry group, market classification, etc., we assessed the level of impact associated with these areas of our study by applying an impact metric, which we customized for this analysis.

Developing key metrics

To capture information about both the sustainability impact and reputational risk associated with the incidents in our database, for each incident, we calculated the mean of these two values, which we denote as the “impact level” (on a scale of 1-10).

The three main categories of our impact framework

We then grouped all incidents into five categories based on their impact levels: low (1-2), moderate (3-4), significant (5-6), high (7-8) and severe (9-10). As detailed below (p. 19), the number of incidents in the high and severe categories is relatively small. To maintain a significant sample size in each of our analytical categories, we bundled these two categories under the heading “high-severe.” Similarly, we bundled the low and moderate incidents under the heading “low-moderate” to maintain analytical symmetry in our impact classification scheme. Our impact framework thus has three broad categories: low-moderate (1-4), significant (5-6) and high-severe (7-10).

Applying the findings

We synthesize the findings of our analysis in order to illustrate how incidents research can add value to portfolio and engagement strategies. We begin the synthesis chapter with a simplified market cap analysis that compares the market cap of companies five days before and five days after they experienced an initial incident. This analysis focuses on a slightly smaller dataset of 14,565 observations, as historical market cap information was not available for all companies in the full dataset.

The industry tilts, industry beta analysis and portfolio construction follow the general pattern of blending our research with external market information, including index weights and beta factors.
Incident analysis

Which types of incidents are occurring?

We begin our study by looking at the what of incidents: which types are most common, and which types have the greatest impact. As indicated in Figure 5, most incidents are social: 60% of the 29,095 incidents in our dataset involve social tags, such as quality and safety, and labour relations. Governance incidents account for roughly one-third, followed by environmental incidents at 10%.

Figure 5: Incidents by ESG theme

As shown in Figure 6, the total number of incidents captured by Sustainalytics increased from 6,400 in 2014 to 13,465 in 2016, for a 110% increase. This trend is due to Sustainalytics’ expanding universe coverage, the growing number of incidents per company, which rose from 1.3 in 2014 to 1.7 in 2016, and increasing news volume.

Figure 6: Incidents by year and ESG theme
Drilling down on incident tags

Incident tags offer a granular description of incident activity. Our framework consists of 45 tags, and each incident processed by Sustainalytics is assigned to one of these categories. Remarkably, almost two-thirds (66%) of the 29,095 incidents considered in this study fall under just ten tags (Figure 7).

Figure 7: The ten most common incident tags

Quality and Safety accounts for 17% of all incidents

Quality and Safety incidents, which involve product recalls and other sorts of product-related concerns, account for 17% of all incidents (n = 4,880). This tag is closely followed by Business Ethics, which accounts for 13% (n = 3,653). These two tags thus account for more than one-quarter of all incidents. Other prominent categories include Labour Relations, Social Impact of Products, which involves products that are harmful to society, such as tobacco, asbestos and pesticides, and Anti-Competitive Practices.

Differing levels of incident impact

Incidents can also be distinguished by their impact. As discussed in the Methodology chapter, not all incidents are equal: some have modest sustainability and reputational impacts, while others have substantial impacts. Figure 8 segments the 29,095 incidents in our dataset by their impact ranking.

The first conclusion that we draw from this figure is that low-impact incidents are common, and high-impact incidents are rare. Low- and moderate-impact incidents together account for more than three-quarters (78%) of all incidents. The remainder are categorized as significant (16% or 4,557 incidents), high (6% or 1,638 incidents) and severe (1% or 290 incidents).
Low-impact incidents should not be dismissed

While high- and severe-impact incidents have the highest probability of affecting the financial performance of portfolio companies – see our market cap analysis on p. 28 – we caution against dismissing low-, moderate- and significant-impact incidents altogether. One reason is that a low-impact incident can sometimes morph over time into a high or severe incident, depending on new media stories and company responses. Another is that, in some industries, even low, moderate and significant incidents are rare. Against this backdrop, companies with a large number of even low-impact incidents will stand out from their peers.

Combining incident tags and impact

To culminate this chapter, we produce a distribution of incident impact within each incident category. Figure 9 lists the ten incident tags with the largest proportion of high-severe incidents.

At the top end is Resilience, which refers to bailouts, bail-ins and state mandated capital stress tests for banks and systemically important financial institutions. Resilience incidents are not particularly common – our dataset includes only 457 such incidents. However, when they occur, they tend to be consequential – 30% of all Resilience incidents have a high or severe impact, and a further 38% have a significant impact.

Water Releases is an incident category that is also distinguished by relatively high sustainability and reputational impacts. Just under one-quarter (23%) of all Water Releases incidents were assessed as having high or severe impacts. As with Resilience, when these incidents occur, they have a relatively high probability of generating high or severe impacts.
Bribery and Corruption and Water Releases are the only two incident types that are both frequent (Figure 7) and relatively impactful (Figure 9). Bribery and Corruption is the seventh most common incident tag, accounting for 4% of all incidents, and the fourth most impactful. There is a similar confluence with Water Releases, which is the eighth most common incident tag and the second most impactful (23% of incidents related to water discharges are categorized as high-severe impact). We consider these two incident types to be especially significant ones for investors to monitor.

Key takeaways

Our analysis of the what of incidents shows the following:

1. Most incidents are social. Fully 59% of all incidents involve social issues, followed by governance (31%) and environment (10%).
2. Incidents are increasing. The number of incidents captured by Sustainalytics grew from 6,400 in 2014 to 13,465 in 2016.
3. Of the 45 tags used to describe incidents, the 10 most common are heavily over-represented, accounting for almost two-thirds (66%) of all incidents.
4. The two types of incidents that occur far more frequently than any other are Quality and Safety and Business Ethics, which account for 30% of all incidents.
5. Most incidents are not highly impactful: low- and moderate-impact incidents account for 78% of all incidents.
6. Resilience has the highest proportion of high-severe impact incidents. Almost one-third (30%) of all Resilience incidents have a high or severe impact.
7. Two incident types – Bribery and Corruption and Water Releases – run against the grain: they are relatively common and often highly impactful.
Which industries are most involved?

In the same way that not all incidents are equal, not all industries are equal either – some are much more exposed to incidents than others. In this section we look at which companies are involved in incidents, with a focus on companies’ industry classification and size.

Segmenting companies by industry

The 29,095 incidents in our dataset involved a total of 4,540 unique companies across 42 industries. Mirroring our incident tag analysis, where the ten most common tags accounted for 66% of all incidents, the ten most heavily exposed industries account for 60% of all incidents (Figure 10). The concentration among Banks is particularly notable. The banking industry alone accounts for 19% of all incidents.

Figure 10: Incidents by industry

Several reasons account for why an industry may produce a disproportionately large share of incidents. Industries that generate high environmental or social impacts, such as extractives, tend to produce more incidents than low impact ones.

Industry-specific industry tags

Some industries also face a larger number of tags. The Resilience tag, for instance, applies only to financial services firms, including banks, diversified financials and insurance companies. Another factor is industry structure: industries involved in business-to-consumer products and services are prone to quality risks, which hit numerous incident tags. This means that, ceteris paribus, these industries have larger theoretical exposure to incidents.

Media bias

On top of these factors is media bias. As we explained above (p. 13), incidents are media-driven, and industries that attract a disproportionate share of the media spotlight may have their incidents more thoroughly documented than those that fly under the media radar.
But perhaps the most important contributing factor is industry size: some industries are fundamentally larger than others, and Sustainalytics’ industry coverage is not uniform across industries.

### Incident risk coefficients

It is therefore critical to adjust for industry size when thinking about incident risk. This is precisely what we do with the industry incident risk coefficients presented in Table 7. The coefficient is the proportion of each industry that experienced an incident from 2014-2016. Crucially, the coefficient takes into account those companies that did not produce an incident but could have.

**Table 7: Industry incident risk coefficients**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Incident risk coefficient*</th>
<th>Number of companies†</th>
<th>Industry</th>
<th>Incident risk coefficient*</th>
<th>Number of companies†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automobiles</td>
<td>0.52</td>
<td>49</td>
<td>Chemicals</td>
<td>0.27</td>
<td>183</td>
</tr>
<tr>
<td>Aerospace &amp; Defense</td>
<td>0.49</td>
<td>49</td>
<td>Retailing</td>
<td>0.27</td>
<td>215</td>
</tr>
<tr>
<td>Precious Metals</td>
<td>0.42</td>
<td>86</td>
<td>Diversified Financials</td>
<td>0.27</td>
<td>348</td>
</tr>
<tr>
<td>Banks</td>
<td>0.41</td>
<td>520</td>
<td>Paper &amp; Forestry</td>
<td>0.26</td>
<td>39</td>
</tr>
<tr>
<td>Diversified Metals</td>
<td>0.40</td>
<td>87</td>
<td>Healthcare</td>
<td>0.25</td>
<td>180</td>
</tr>
<tr>
<td>Household Products</td>
<td>0.39</td>
<td>47</td>
<td>Commercial Services</td>
<td>0.24</td>
<td>137</td>
</tr>
<tr>
<td>Food Retailers</td>
<td>0.38</td>
<td>91</td>
<td>Electrical Equipment</td>
<td>0.23</td>
<td>71</td>
</tr>
<tr>
<td>Refiners &amp; Pipelines</td>
<td>0.37</td>
<td>80</td>
<td>Energy Services</td>
<td>0.23</td>
<td>87</td>
</tr>
<tr>
<td>Oil &amp; Gas Producers</td>
<td>0.36</td>
<td>214</td>
<td>Media</td>
<td>0.23</td>
<td>144</td>
</tr>
<tr>
<td>Construction &amp; Engineering</td>
<td>0.36</td>
<td>114</td>
<td>Traders &amp; Distributors</td>
<td>0.23</td>
<td>56</td>
</tr>
<tr>
<td>Steel</td>
<td>0.36</td>
<td>89</td>
<td>Consumer Durables</td>
<td>0.22</td>
<td>60</td>
</tr>
<tr>
<td>Insurance</td>
<td>0.36</td>
<td>177</td>
<td>Technology Hardware</td>
<td>0.19</td>
<td>205</td>
</tr>
<tr>
<td>Telecommunication Services</td>
<td>0.35</td>
<td>146</td>
<td>Software &amp; Services</td>
<td>0.19</td>
<td>250</td>
</tr>
<tr>
<td>Construction Materials</td>
<td>0.35</td>
<td>55</td>
<td>Machinery</td>
<td>0.19</td>
<td>189</td>
</tr>
<tr>
<td>Transportation</td>
<td>0.33</td>
<td>163</td>
<td>Containers &amp; Packaging</td>
<td>0.18</td>
<td>32</td>
</tr>
<tr>
<td>Consumer Services</td>
<td>0.32</td>
<td>159</td>
<td>Building Products</td>
<td>0.18</td>
<td>38</td>
</tr>
<tr>
<td>Food Products</td>
<td>0.30</td>
<td>295</td>
<td>Pharmaceuticals</td>
<td>0.16</td>
<td>234</td>
</tr>
<tr>
<td>Utilities</td>
<td>0.30</td>
<td>285</td>
<td>Semiconductors</td>
<td>0.15</td>
<td>124</td>
</tr>
<tr>
<td>Industrial Conglomerates</td>
<td>0.29</td>
<td>65</td>
<td>Homebuilders</td>
<td>0.13</td>
<td>34</td>
</tr>
<tr>
<td>Auto Components</td>
<td>0.28</td>
<td>76</td>
<td>Transportation Infrastructure</td>
<td>0.09</td>
<td>74</td>
</tr>
<tr>
<td>Textiles &amp; Apparel</td>
<td>0.27</td>
<td>66</td>
<td>Real Estate</td>
<td>0.07</td>
<td>376</td>
</tr>
</tbody>
</table>

*Average number of ESG profile companies that produced incidents divided by the average total number of ESG profile companies (2014-2016). **Source: Sustainalytics**

†Average number of ESG profile companies (2014-2016).
Interpreting the numbers

The coefficients support several interesting conclusions. One is that the Automobiles industry is the riskiest from a size-adjusted point of view. Of the 49 Automobiles companies in our coverage universe, 25 were involved in at least one incident during the study period, for an incident risk coefficient of 0.52. Quality and Safety incidents are especially pronounced in this industry (n = 437), accounting for half of the 878 Automobile incidents.

Banks have a high-risk incident profile

The Banks industry is also distinguished by a high-risk incident profile. Not only is the Banks industry the single largest contributor to incidents in absolute terms (Figure 10), its incident risk coefficient, at 0.41, is the fourth highest of all industries. Like Automobiles, Banks have an outsized incident footprint that involves a relatively large proportion of companies across the industry. Banks also experience many Quality and Safety incidents (n = 1,105), though these make up only 20% of the industry’s total number of incidents (n = 5,593).

Factors behind high incident risk

Common aspects of the Banks and Automobiles industries that make them particularly susceptible to incidents relate to the products they offer, the markets they target, and the business models they employ. Both industries sell products that are highly regulated and can have adverse impacts on consumers. A significant proportion of banks and automobile manufacturers in our coverage universe target the US market, which exposes them to consumer lawsuits and regulatory actions relating to the quality of their products as well as ESG issues, such as business ethics and marketing practices. As consumer financing (auto loans) is becoming an increasingly important part of automakers’ business, these firms are increasingly exposed to similar types of incidents as those faced by banks.

Low interest rates

Another factor is the low interest rate environment, which squeezes profit margins and may incentivize product pushing, predatory lending, and other aggressive marketing tactics.

Low-risk industries

As shown in Table 7, ten industries have an incident risk coefficient below 0.20, signalling a low probability of experiencing incidents. The Real Estate industry is particularly notable in this respect: only 26 of the 376 real estate firms experienced an incident during the study period, yielding an incident risk coefficient of 0.07. This reflects the nature of the industry as well as the accessibility of information about company operations. For example, many Real Estate firms are structured as real estate investment trusts (REITs), which are rarely named in news reports about controversies associated with the property companies in which REITs invest.

Taking size into account

Another lens through which the who of incidents can be analyzed is company size. The incidents in our dataset were produced by companies of vastly different sizes, ranging from micro caps with less than USD 200,000 in total capitalization to the largest publicly traded companies in the world.
Figure 1: Incident involvement by market cap category

Large companies produce more incidents. Large companies are involved in more incidents than small ones. This is partly because large companies tend to have more operations, and more theoretical potential to produce incidents, and partly because large companies also tend to attract a disproportionately large amount of attention from media, including news media and NGOs.

Mega caps are in a league of their own. As shown in Figure 11, mega caps generate an average of 106 incidents per company. This compares to 15 for large caps, four for mid caps, and three for small and micro caps. While mega caps are involved in a relatively small number of incidents in absolute terms (1,489 incidents, which is comparable to the 1,337 that involved micro caps), there were only 14 mega caps in our coverage universe during the study period.

Key takeaways

Our analysis of the who of incidents reveals the following key points:

1. Banks account for 19% of all incidents, more than twice the amount of the next most exposed industry (Food Products).
2. With an incident risk coefficient of 0.52, the Automobiles industry is the riskiest from a size-adjusted industry perspective.
3. Other industries with a high probability of producing incidents include Aerospace & Defense, Precious Metals and Banks.
4. Real Estate firms are least likely to get caught up in incidents. Only 26 out of 376 real estate companies (7%) were involved in an incident from 2014-2016.
5. Market cap analysis demonstrates that large firms are the most prolific contributors of incidents. Mega-caps produce an average of 106 incidents per firm, compared to 15 incidents per large cap firm, four per mid cap firm and three per small and micro cap firm.
Where are incidents occurring?

In this section, we consider the final dimension of incident analysis: where incidents are taking place. We produce a country-level distribution of incidents, look at incidents per unit of GDP and investigate countries’ domestic incident bias – the proportion of incidents within countries that involve domestic (as opposed to foreign) firms.

Location of incidents

As shown in Figure 12, incidents occur in the US far more frequently than they do in any other country in the world. During our study period, 12,055 incidents occurred in the US across all 42 industries, accounting for 41% of all incidents. This is more than six times as many as the number of incidents that occurred in the UK (n = 1,835), the second most incident prone country. India is also noteworthy, being the only other country to have experienced more than 1,000 incidents (n = 1,459). Together, these three countries account for 52% of all incidents.

Figure 12: Distribution of incidents by country

A substantial portion of the countries depicted in Figure 12 have experienced a small number of incidents. Of the 172 countries represented, 116 (or 67%) are associated with fewer than 50 incidents. Many of these countries are located in Africa, the Middle East and Eastern Europe. The dearth of incidents in these regions may partly reflect less developed media channels and language barriers.\(^\text{10}\)

Adjusting for size

As one would expect to see more incidents in larger countries, it is useful to consider the number of incidents within countries on a size-adjusted basis. In the analysis below, we normalize for differences in country size by looking at incidents per unit of GDP.
Particularly risky markets

As shown in Table 8, a different picture emerges when we look at incidents from this perspective. For instance, Kenya, South Africa, Malaysia and Chile stand out as particularly risky markets, as more incidents occur in these countries than might be expected given their size. And the US, with 67 incidents per USD 100bn in GDP, is only slightly above the global average of 63.

Findings should be interpreted in the context of our universe coverage

Germany has the lowest number of incidents per unit of GDP at 11, followed by Japan (12), Mexico (15), and France and Italy (16). These numbers should be interpreted in the context of our coverage universe: countries with sparse coverage may have an artificially small number of incidents. Media is another factor: local media may not report on all incidents that actually occur. Still, other things being equal, a small number of incidents per unit of GDP may indicate superior regulatory regimes or an operating environment that otherwise discourages corporate incidents.

Table 8: Incidents per unit of GDP

<table>
<thead>
<tr>
<th>Country</th>
<th>GDP (hundred billions USD)*</th>
<th>Number of incidents</th>
<th>Incidents per GDP</th>
<th>Country</th>
<th>GDP (hundred billions USD)*</th>
<th>Number of incidents</th>
<th>Incidents per GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya</td>
<td>0.7</td>
<td>226</td>
<td>346</td>
<td>South Korea</td>
<td>14.0</td>
<td>671</td>
<td>48</td>
</tr>
<tr>
<td>South Africa</td>
<td>3.2</td>
<td>514</td>
<td>160</td>
<td>Taiwan</td>
<td>3.6</td>
<td>157</td>
<td>44</td>
</tr>
<tr>
<td>Malaysia</td>
<td>3.1</td>
<td>297</td>
<td>96</td>
<td>Canada</td>
<td>16.3</td>
<td>672</td>
<td>41</td>
</tr>
<tr>
<td>Chile</td>
<td>2.5</td>
<td>205</td>
<td>82</td>
<td>Netherlands</td>
<td>8.0</td>
<td>311</td>
<td>39</td>
</tr>
<tr>
<td>Indonesia</td>
<td>8.9</td>
<td>688</td>
<td>77</td>
<td>Brazil</td>
<td>20.2</td>
<td>774</td>
<td>38</td>
</tr>
<tr>
<td>Australia</td>
<td>13.4</td>
<td>941</td>
<td>70</td>
<td>Switzerland</td>
<td>6.8</td>
<td>203</td>
<td>30</td>
</tr>
<tr>
<td>India</td>
<td>21.4</td>
<td>1,460</td>
<td>68</td>
<td>Spain</td>
<td>12.7</td>
<td>263</td>
<td>21</td>
</tr>
<tr>
<td>US</td>
<td>180.0</td>
<td>12,056</td>
<td>67</td>
<td>Italy</td>
<td>19.4</td>
<td>317</td>
<td>16</td>
</tr>
<tr>
<td>UK</td>
<td>28.3</td>
<td>1,839</td>
<td>65</td>
<td>France</td>
<td>25.8</td>
<td>419</td>
<td>16</td>
</tr>
<tr>
<td>Nigeria</td>
<td>4.8</td>
<td>259</td>
<td>53</td>
<td>Mexico</td>
<td>11.7</td>
<td>180</td>
<td>15</td>
</tr>
<tr>
<td>Belgium</td>
<td>4.8</td>
<td>255</td>
<td>53</td>
<td>Japan</td>
<td>47.2</td>
<td>565</td>
<td>12</td>
</tr>
<tr>
<td>Singapore</td>
<td>3.0</td>
<td>153</td>
<td>51</td>
<td>Germany</td>
<td>35.7</td>
<td>408</td>
<td>11</td>
</tr>
</tbody>
</table>

*Average annual nominal GDP, 2014-2016

Source: Sustainalytics, Bloomberg

Domestic incident bias

Incidents taking place within a given country can involve domestic firms, or the local operations of foreign firms. The discussion above, including the incident map (Figure 12) and GDP analysis (Table 8), does not take this consideration into account. It is agnostic about whether incidents are being generated by domestic or foreign firms.

In the analysis below, we build upon this distinction and calculate countries’ domestic incident bias – the proportion of incidents within countries that involve domestic firms.

Figure 13 shows the domestic incident bias of the 25 countries from our dataset that experienced more than 150 incidents. The diversity of performance is remarkable, even among countries with a similar economic profile. At the high end, Taiwan has a domestic incident bias of 87%. This means that of the 157 incidents that took place in Taiwan, 137 involved Taiwanese firms and 20 involved foreign firms with local operations in the country.
At the other extreme, Belgium’s domestic industry bias is 13%. This means that only 13% of the 255 incidents that occurred in Belgium actually involved Belgian companies.\(^{13}\)

**Figure 13: Domestic incident bias of selected countries**

Deeper research is required to determine precisely what a country’s domestic incident bias may mean. For instance, it may plausibly reflect the relative importance of domestic actors in a country’s economy. But it may also speak to different operating norms between “homegrown” companies and the local operations, such as a mine or factory, of foreign firms. The general pattern from Figure 13 is that developed countries tend to have a higher domestic industry bias, and developing countries a lower one, although there are clearly exceptions to the contrary (such as South Africa, India and Belgium).

**Key takeaways**

Our analysis of the where of incidents demonstrates the following key points:

1. Almost half (41%) of all incidents in our sample occurred in the US, by far the largest contribution of any single country.
2. Other hotspots include the UK (6% of all incidents) and India (5% of all incidents).
3. Kenya, South Africa, Malaysia and Chile stand out as particularly risky countries from an incident per unit of GDP perspective.
4. Of all countries with more than 150 incidents, Germany has the lowest number of incidents per unit of GDP (11).
5. The domestic incident bias among examined countries ranges from 87% (Taiwan) to 13% (Belgium).
Applying the findings
Links to portfolio and engagement strategy

Our journey into the what, who and where of ESG incidents has revealed several key findings about incident types, the companies most likely to be involved in incidents and the countries where incidents are taking place. In this chapter we contemplate the “so what?” question. What do our findings mean for investors? How can portfolio managers apply our analysis in portfolio strategy? Or in engagements with portfolio companies?

We begin by investigating the financial materiality of incidents, a question that is likely to sit at the centre of portfolio application. We then review three techniques to integrate incident analysis in portfolio strategy: industry tilts, beta analysis and security selection. We conclude by discussing ways that incident analysis can be harvested in corporate engagements.

Can incidents have financial impact?

There is growing interest within the investment community in exploring the financial materiality of ESG incidents, partly because such incidents are on the rise (Figure 6) and partly because investors’ growing use of ESG information in investment decision-making is raising awareness about the financial effects of ESG controversies.

Determining the financial impact of incidents is an obviously complex exercise. There is a question of what to measure, when to measure it, and uncertainty about how quickly the market may price in the effects of different types of incidents.

The parsimonious approach that we developed for this study does not purport to address all of these questions. However, our findings provide a compelling foundation for deeper research. Our methodology involves studying 14,564 initial incidents drawn from the dataset and comparing the market cap value of companies five days before and five days after an incident. The results are presented in Table 9.

Table 9: Market cap analysis

<table>
<thead>
<tr>
<th>Impact level</th>
<th>Mean percent change in market cap</th>
<th>Percent of companies with market cap decline</th>
<th>Number of incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-Severe</td>
<td>-6%</td>
<td>69%</td>
<td>55</td>
</tr>
<tr>
<td>Significant</td>
<td>-1%</td>
<td>54%</td>
<td>795</td>
</tr>
<tr>
<td>Low-Moderate</td>
<td>0%</td>
<td>50%</td>
<td>13,714</td>
</tr>
</tbody>
</table>

High-severe incidents are associated with a 6% decline in market cap

Our analysis indicates that incidents and, in particular, high- and severe-impact incidents, are associated with important share price effects. Over two-thirds (69%) of companies that experienced a high-severe incident also experienced a market cap decline during the ten-day incident window, with an average decline of 6%. Examples of high or severe impact incidents include quality and safety concerns with Samsung’s Galaxy Note 7 (2016), the Volkswagen emissions scandal (2015) and the Petrobras corruption investigation (2014).
Less meaningful market cap effects for other types of incidents

For incidents with a significant impact, just over half (54%) of companies experienced a market cap decline, with an average decline of 1%. The associated market cap impacts of low and moderate incidents appear to be negligible.

Larger effects for high-severe incidents are intuitive

This analysis does not mean that incidents are causing the market cap declines. But it does show that incidents are often correlated with substantial market cap effects, and the more extensive effects for high and severe impact incidents are intuitive.

Links to portfolio strategy

Industry tilts

One way that investors can integrate incident risk analysis into portfolio decision making is by adjusting industry weights through a tilting strategy. This tactic is based on the recognition that different industries face different exposure to incidents, including those that may impact the share price performance of portfolio companies. Some industries, including Automobiles and Aerospace & Defense, are highly incident prone, while others, most notably Real Estate, are less so.

To illustrate what this approach might look like in practice, we use the FTSE Global All Cap Index as a proxy for a diversified global equity portfolio. The weights, which range from 23% for Financials to 3% for Utilities and Telecoms, are found in Figure 14.

Figure 14: Industry weights in a market portfolio

Next, we adjust the industry weights based on each industry’s incident risk coefficient. The resulting tilts, which represent the delta between the industry weights of the market portfolio and the adjusted industry weights, can be seen in Figure 15. Our analysis suggests that a typical global equity investor can improve their exposure to incidents through a range of relatively modest tilts, which range from +0.5% for the Technology industry to -0.2% for the Consumer Goods industry.

The positive tilt for Technology is a result of the low incident risk of the underlying Technology Hardware, Software & Services and Semiconductors industries in our

Source: Sustainalytics, FTSE Russell
incident risk analysis (Table 7). The negative tilt for Consumer Goods is driven by the high incident risk of the Automobiles and Household Products industries.

**Figure 15: Incident-driven industry tilts**

![Incident-driven industry tilts](image)

*Source: Sustainalytics*

### Alternative tilt applications

Variations of this application could involve focusing on an industry’s exposure to high-severe incidents, and exploring techniques to amplify the weighting signal from the industry incident risk coefficients.

### Blending with beta

Portfolio managers can also combine industry incident risk with industry beta analysis. Beta is a measure of volatility compared to the market. High beta industries, including Steel, Diversified Metals, Construction Materials, Oil & Gas Producers and Chemicals, are typically seen as higher risk, higher return industries. By contrast, low beta industries, such as Utilities, Banks, Insurance, Automobiles and Household Products, are generally perceived as lower risk, lower return industries.

In a high beta industry, any negative share price effects from a single, high-impact ESG incident could be drowned out by day to day volatility. However, in a low beta industry, any share price effects from ESG incidents could be of greater relative importance. This means that it may be particularly important for portfolio managers to protect against incident risk in low beta industries.

### Table 10: Incident risk profile of high and low beta industries

<table>
<thead>
<tr>
<th>Industry type</th>
<th>Average incident risk coefficient</th>
<th>Max incident risk coefficient</th>
<th>Min incident risk coefficient</th>
<th>Number of industries</th>
</tr>
</thead>
<tbody>
<tr>
<td>High beta</td>
<td>0.27</td>
<td>0.49</td>
<td>0.09</td>
<td>28</td>
</tr>
<tr>
<td>Low beta</td>
<td>0.31</td>
<td>0.52</td>
<td>0.07</td>
<td>14</td>
</tr>
</tbody>
</table>

*Source: Sustainalytics, Stern School of Business*

### Low beta industries are at slightly higher incident risk

Interestingly, we find that low beta industries are slightly more exposed to incident risk than high beta ones. As shown in Table 10, the 14 low beta industries we evaluated have an average incident risk coefficient of 0.31 compared to 0.27 for 28 high beta industries.
Another way to integrate incident risk into industry beta analysis is to combine this information in a single metric. Figure 16 shows the 12 industries with the highest “beta adjusted incident risk,” which is an industry’s incident risk coefficient divided by its beta. Automobiles stands out once again as a particularly risky industry: not only does the industry have the highest absolute incident risk coefficient (Table 7), it also has the highest incident risk per unit of beta (0.6).

The Utilities industry is also noteworthy. While the industry’s incident risk coefficient (0.30) is only slightly above the economy average of 0.28, Utilities are the epitome of a stable, defensive industry (beta of 0.5). This means that the industry has relatively high incident risk per unit of beta, trailing only Automobiles.

**Figure 16: Beta adjusted incident risk in selected industries**

![Beta adjusted incident risk in selected industries](image)

*Source: Sustainalytics, Stern School of Business*

Portfolio managers are unlikely to view an industry’s incident risk profile in isolation. Blending an industry’s exposure to incidents with beta analysis is an innovative way for investors to incorporate incidents research and analysis in their investment process.

### Portfolio construction

Another way that investors can apply incident analysis is in portfolio construction. The thesis is similar to that which underpins ESG integration more broadly: companies that face fewer incidents than their same-sector peers may be better managed, and may be better able to deliver shareholder value, especially over the long run.

To demonstrate this application, we built a concentrated portfolio of top incident performers – the Sustainalytics Incident Proof Portfolio. The portfolio is market neutral and consists of the top 50 incident performers across our coverage universe. Constituents were refreshed each January on the basis of companies’ incident performance during the prior year.

As shown in Figure 17, the Sustainalytics Incident Proof Portfolio delivered a total return of 45.9% from January 2014 to October 2017, compared to 34.9% for the FTSE Global All Cap Index. The results suggest a security’s incident performance – the number and
type of ESG incidents that it faces or avoids – may contain an outperformance signal that is rewarded by the market.

Figure 17: The Sustainalytics Incident Proof Portfolio

As shown in Table 11, the portfolio had a higher standard deviation than the benchmark (13.4 compared to 9.2). This is expected, as top incident performers, i.e. companies that have experienced the fewest incidents relative to their industry peers, tend to be smaller, more volatile firms. But the portfolio also has a higher average market cap (USD 7,840mn) than the market (USD 6,464mn). This may reflect our decision to use overall ESG scores to break the tie among top incident performers within sectors.19

Table 11: Descriptive statistics

<table>
<thead>
<tr>
<th>Security</th>
<th>Total return*</th>
<th>Standard deviation of return*</th>
<th>Number of constituents†</th>
<th>Average mkt cap (USD mn)†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainalytics Incident Proof Portfolio</td>
<td>45.9%</td>
<td>13.4</td>
<td>50</td>
<td>7,840</td>
</tr>
<tr>
<td>FTSE Global All Cap Index</td>
<td>34.9%</td>
<td>9.2</td>
<td>7,781</td>
<td>6,464</td>
</tr>
</tbody>
</table>

* From Jan 2, 2012 to Oct 31, 2017
† As of Oct 31, 2017

We expect portfolio strategies that leverage incident information to proliferate in the future, due not only to the market’s increasing use of ESG information and growing awareness of incidents, but also to advances in machine learning technologies. Future investment portfolios are likely to benefit from advanced machine learning techniques that are capable of assigning refined incident probabilities to all companies in an investor’s portfolio. These probabilities are likely to be updated in real time.

Incident-driven engagement

The insights captured in this paper can also be harvested by asset managers and owners in their engagement strategies. Engagement and voting on ESG issues has become a central tenet of many investors’ responsible investment strategy. According to the Global Sustainable Investment Review, over USD 8tn in assets were subjected to
Engagement has become a central tenet of many investors’ responsible investment strategy.

A common-sense approach

Maximizing real-world impact

Leveraging incidents

Engagement has become a central tenet of many investors’ responsible investment strategy. Corporate engagement policies at the end of 2015, up from USD 7tn in 2013.20 As argued in the 2016 Sustainalytics report *Engagement: Unlocking the Black Box of Value Creation*, the rationale for investors to engage with their portfolio companies on ESG issues is multidimensional and ranges from promoting positive social and environmental change to generating financial and reputational value.21

**Leveraging incidents**

Less clear is the process that investors use to determine which specific ESG issues to engage with their portfolio companies on. Most appear to take a common-sense approach and focus on cross-cutting trends, such as climate change, or themes that are believed to be particularly material within industries. However, engagement topics that are a priority for some investors may be less important to others.

Our idea of “incident-driven engagement” is for investors to incorporate incident analysis in their issue selection process. As shown in Table 12, there is a disconnect between the most common ESG engagement issues and the top incident-driven candidates. Granted, engagement issues tend to be much broader and, in many cases, more systemically important than a single incident category. Nevertheless, using a simple ranking system that recognizes incident frequency and impact (Figures 7 and 9), investors could potentially maximize the real-world impact of their engagement efforts by expanding their conversations with management to include incidents.

**Table 12. Comparing engagement issues**

<table>
<thead>
<tr>
<th>Top engagement issues</th>
<th>Top incident-driven engagement issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Remuneration</td>
<td>Water Releases</td>
</tr>
<tr>
<td>Climate Change</td>
<td>Bribery and Corruption</td>
</tr>
<tr>
<td>Human Rights</td>
<td>Quality and Safety</td>
</tr>
<tr>
<td>Board Diversity, Skills and Experience</td>
<td>Resilience</td>
</tr>
<tr>
<td>Business Strategy</td>
<td>Business Ethics</td>
</tr>
<tr>
<td>Board Independence</td>
<td>Labour Relations</td>
</tr>
<tr>
<td>Risk Management</td>
<td>Social Impact of Products</td>
</tr>
<tr>
<td>Conduct and Culture</td>
<td>Anti-Competitive Practices</td>
</tr>
<tr>
<td>Succession Planning</td>
<td>Health and Safety</td>
</tr>
<tr>
<td>Integrated Reporting and Other Disclosure</td>
<td>Sanctions</td>
</tr>
</tbody>
</table>

**Source:** Sustainalytics, Hermes EOS22

Attractive engagement candidates

For instance, Water Releases and Bribery and Corruption are not only relatively common (relative to other incident types) but their sustainability and reputational impacts are also relatively high. While theses issues are certainly already covered in existing engagements, our analysis suggests that investors could benefit by setting up targeted conversations with management on these themes.
Conclusion

Summarizing the takeaways

In this report we have sought to decompose Sustainalytics’ unique dataset of ESG incidents. Our analysis of 29,000 incidents that took place from 2014-2016 yielded a number of important findings about the what, who and where of incidents.

We also reflected on how asset managers and owners could apply these findings in their investment process and engagement strategies. We offered preliminary evidence about the market cap effects of incidents, and explored how incidents could be integrated into a tilting strategy, industry beta analysis and portfolio construction. We also introduced the idea of “incident-driven engagement,” which could potentially enhance the real-world impact of investors’ engagement efforts.

Looking ahead

While this paper breaks new ground in understanding incidents, it is part of a larger and fast-growing literature on the potential applications of machine learning. Recall that Sustainalytics’ incident collection and processing system uses machine learning algorithms to monitor approximately 60,000 sources of information across the world. In our view, the future is very much one where investors will be able to benefit from refined probabilities about the involvement of their portfolio companies in ESG incidents, including financially material incidents. These techniques may help investors sidestep damaging portfolio effects and signal the importance to companies of maintaining excellent operational and governance systems.

It is hoped that the analytical framework developed in this paper plays a foundational role in helping investors think about incidents in their portfolio decision-making and engagement processes.
<table>
<thead>
<tr>
<th>Incident type (main tag)</th>
<th>Theme</th>
<th>Incident description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon impact of Products*</td>
<td>Environmental</td>
<td>Incidents related to products that are inherently harmful to the environment due to their contribution to Carbon Dioxide emissions, such as fossil fuels, or car/aircraft manufacturers. This tag is limited to Carbon Dioxide emissions resulting from a company’s products. The tag includes the financing of companies whose products are associated with Carbon Dioxide emissions, such as coal or other fossil fuels.</td>
</tr>
<tr>
<td>Degradation &amp; Contamination (Land)</td>
<td>Environmental</td>
<td>Incidents relating to company operations that result in the disposal of harmful products, effluents or waste onto land, resulting in adverse impacts on human health or the degradation of land or ecosystems. This may include radioactive, toxic, electronic, or otherwise hazardous waste, in addition to spills of products or byproducts that are harmful to surrounding land or ecosystems.</td>
</tr>
<tr>
<td>Emissions to Air</td>
<td>Environmental</td>
<td>Incidents relating to company operations that result in chemicals, particulars, or biological materials that are harmful to humans or ecosystems being introduced into the atmosphere. This tag does not include GHG emissions associated with company operations, which is covered in Energy Use and Greenhouse Gas Emissions.</td>
</tr>
<tr>
<td>Energy Use and Greenhouse Gas Emissions</td>
<td>Environmental</td>
<td>Incidents relating to how a company manages the energy intensity of its operations, and resulting Greenhouse Gas (GHG) emissions. Incidents may be recorded after stakeholder opposition, fines, or legal actions related to GHG emissions. This tag does not cover non-GHG emissions that are harmful to the environment, which is covered by the Emissions to Air tag.</td>
</tr>
<tr>
<td>Environmental Impact of Products</td>
<td>Environmental</td>
<td>Incidents relating to products that are inherently harmful to the environment. The products considered depend on the industry, but some examples are herbicides, certain plastics, cleaning products, etc. Incidents may be recorded after lawsuits or stakeholder criticism regarding the product’s adverse impacts. For financial institutions, this tag includes the financing of infrastructure projects or companies whose operations result in negative environmental impacts. This tag does not include products that cause environmental harm due to Carbon Dioxide emissions, which is covered in the Carbon Impact of Products tag.</td>
</tr>
<tr>
<td>Land Use and Biodiversity</td>
<td>Environmental</td>
<td>Incidents relating to a company’s failure to adhere to sustainable land use practices, resulting in negative impacts on land or ecosystems. This may include deforestation, land clearing, soil erosion, logging, or other practices. It may also include a company’s inability to prevent biodiversity or habitat loss to threatened land, air or water species.</td>
</tr>
<tr>
<td>Water Releases (Water Discharges and Releases)</td>
<td>Environmental</td>
<td>Incidents relating to company operations that result in the discharge or release of harmful waste, products, or byproducts into water resources.</td>
</tr>
<tr>
<td>Water Use</td>
<td>Environmental</td>
<td>Incidents relating to the volume of water used in company operations, including production, manufacturing, or support activities, or activities in water scarce areas. Incidents may be recorded after stakeholder opposition or community opposition regarding water usage of certain projects, or a company’s failure to obtain proper permits related to water use. However, disputes or opposition that is specific to water rights and access to water not related to excessive water use are included in the Water Rights tag.</td>
</tr>
<tr>
<td>Access to Basic Services</td>
<td>Social</td>
<td>Incidents relating to a company’s management of community access to products or services that are considered essential to human health or livelihood. This is particularly relevant for disadvantaged communities or groups. The scope is currently limited to medicine and medical treatment.</td>
</tr>
<tr>
<td>Anti-Competitive Practices</td>
<td>Social</td>
<td>Incidents relating to a company’s involvement in practices that prevent or reduce competition in the market, primarily through violations of anti-trust legislation. This may involve the manipulation or fixing of prices or rates, collusion, or other actions.</td>
</tr>
<tr>
<td>Arms Export</td>
<td>Social</td>
<td>Incidents relating to a company’s involvement in the export of military equipment to countries with high human rights risks or those that are sanctioned.</td>
</tr>
<tr>
<td>Child Labour</td>
<td>Social</td>
<td>Incidents relating to a company’s use of child labour.</td>
</tr>
<tr>
<td>Conflicts with Indigenous Communities</td>
<td>Social</td>
<td>Incidents relating to a company’s failure to manage its relations with indigenous communities or to ensure free, prior and informed consent in relation to an activity or project which involves company presence or activities close to the indigenous community’s living area. Incidents may take the form of protests or demonstrations, petitions, or legal actions. All cases of community opposition that are specifically focused on land ownership are included in the Land Rights tag.</td>
</tr>
<tr>
<td>Conflicts with Local Communities</td>
<td>Social</td>
<td>Incidents relating to activities by local security forces (either company owned or government controlled) against civilians.</td>
</tr>
<tr>
<td>Controversial Weapons</td>
<td>Social</td>
<td>Incidents relating to a company’s involvement in the production, manufacture and sale of weapons regarded as either illegal (meaning their production and use is prohibited by international/legally binding norms) or deemed controversial because of their indiscriminate or disproportionate impact on civilians. Examples include anti-personnel mines, chemical and biological weapons, cluster munitions, depleted uranium ammunition, nuclear weapons, and white phosphorus.</td>
</tr>
<tr>
<td>Customer Management</td>
<td>Social</td>
<td>Incidents relating to a company’s failure to manage its relationship with customers, or other issues not related to the quality of services offered. Incidents generally involve billing disputes.</td>
</tr>
<tr>
<td>Incident type (main tag)</td>
<td>Theme</td>
<td>Incident description</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Data Privacy and Security</td>
<td>Social</td>
<td>Incidents relating to a company's breach of customer or employee data privacy (i.e. the company used a customer's or employee's private information without his/her consent) or failure to protect customer or employee data (i.e. customer's or employee's data accessed by external parties). The tag includes instances in which customer or employee data is compromised and instances in which the company's security systems are inadequate to prevent attacks, as well as breaches of national legislation regarding data privacy and security. The tag does not include instances in which a company's IT systems fail without being hacked or attacked.</td>
</tr>
<tr>
<td>Discrimination and Harassment</td>
<td>Social</td>
<td>Incidents relating to a company's discrimination or harassment of employees.</td>
</tr>
<tr>
<td>Employees (Other) Human Rights Violations*</td>
<td>Social</td>
<td>Incidents relating to a company's exploitation or inhumane treatment of its employees that does not explicitly constitute forced labour. This may include the mistreatment of vulnerable workers, violence, or misleading contracts.</td>
</tr>
<tr>
<td>False or Deceptive Marketing</td>
<td>Social</td>
<td>Incidents relating to a company's use of false, misleading, or aggressive statements or tactics in its advertising or marketing strategies, resulting in negative impacts on consumers. Incidents may take the form of controversial or unlawful marketing practices, violations of marketing and advertising laws, or improper labeling.</td>
</tr>
<tr>
<td>Forced Labour</td>
<td>Social</td>
<td>Incidents relating to a company's employment of workers against their will.</td>
</tr>
<tr>
<td>Freedom of Association</td>
<td>Social</td>
<td>Incidents relating to a company's failure to uphold employees' rights to organize. This may include cases of retaliation against union members, company attempts to prevent unionizing or refusal to recognize employee elected unions.</td>
</tr>
<tr>
<td>Health and Safety</td>
<td>Social</td>
<td>Incidents relating to a company's failure to protect employees from sickness, injury, disease, or death arising from their employment. This may include workplace accidents, contamination, or the use of improper equipment.</td>
</tr>
<tr>
<td>Human Rights (Involvement With Entities Violating Human Rights)</td>
<td>Social</td>
<td>Incidents relating to a company's involvement with state or non-state actors that have a track record of human rights abuses. The tag covers company involvement with Central African Republic, Eritrea, North Korea, Somalia, Sudan, South Sudan and Syria.</td>
</tr>
<tr>
<td>Labour Relations</td>
<td>Social</td>
<td>Incidents relating to a company's failure to manage its relations with employees and their representatives, such as labour unions. Incidents may be recorded after union disputes or collective bargaining engagements regarding working hours, wages, or other employment terms, as well as collective actions, such as strikes, or company lockouts that result from these negotiations.</td>
</tr>
<tr>
<td>Land Rights</td>
<td>Social</td>
<td>Incidents relating to company activities that infringe upon local community access to or ownership of land. This may take the form of perceived illegal land acquisition, the failure to obtain proper permits in acquiring land, or similar activities. The tag includes all disputes over land ownership and customary or ancestral land rights with local or indigenous communities, such as evictions, failure to provide proper compensation for land, or failure to ensure free, prior and informed consent before purchasing community land.</td>
</tr>
<tr>
<td>Local Community (Other)</td>
<td>Social</td>
<td>Incidents relating to a company's failure to manage its relationship with local communities that are not captured by existing tags, i.e. Conflicts with indigenous communities, Conflicts with local communities, Water Rights, Land rights.</td>
</tr>
<tr>
<td>Media Ethics</td>
<td>Social</td>
<td>Incidents relating to a company's failure to manage ethical standards and integrity in the media, including news journalism. The emphasis is on editorial standards, advertising ethics and management of conflicts of interests. The most common incidents focus on the quality of content and involve negative impacts on media consumers or subjects of news journalism. This may include cases of defamatory, false, controversial, misleading or inaccurate content, breaching content guidelines and regulations, and/or failure to properly manage social media content, i.e. guidelines for user-generated content.</td>
</tr>
<tr>
<td>Occupied Territories/Disputed Regions</td>
<td>Social</td>
<td>Incidents relating to a company's involvement in disputed territories, such as Tibet, Western Sahara and Palestine.</td>
</tr>
<tr>
<td>Other Labour Standards</td>
<td>Social</td>
<td>Incidents relating to a company's failure to manage its relations with employees that are not covered in existing tags, such as Labour Relations.</td>
</tr>
<tr>
<td>Product Quality and Safety†</td>
<td>Social</td>
<td>Incidents relating to the sale of products with negative direct or indirect impact (actual or potential) on human health, safety, or general social and economic well-being of customers.</td>
</tr>
<tr>
<td>Sanctions</td>
<td>Social</td>
<td>Incidents relating to company actions that constitute a breach of international sanctions, generally by conducting business in sanctioned countries or with sanctioned entities. The scope of this tag is limited to international sanctions imposed by the United Nations, the United States, United Kingdom, and European Union.</td>
</tr>
<tr>
<td>Services Quality and Safety†</td>
<td>Social</td>
<td>Incidents relating to services that result in adverse impacts on the health, safety, or general social and economic well-being of customers.</td>
</tr>
<tr>
<td>Social Impact of Products</td>
<td>Social</td>
<td>Incidents relating to products that are inherently harmful to society. The products may have an adverse impact on human health, safety, or general economic wellbeing. Examples of such products depend on the industry, but may include tobacco, asbestos, pesticides or herbicides, lead, etc. Incidents may be recorded after lawsuits or stakeholder criticism regarding the product's adverse impacts. For financial institutions, this tag includes the financing of infrastructure projects with negative social impacts on stakeholders, or companies whose products have negative impacts on human health or society.</td>
</tr>
<tr>
<td>Society (Other) Human Rights Violations*</td>
<td>Social</td>
<td>Incidents relating to a company's involvement in severe human rights violations or the inhumane treatment of stakeholders other than employees. Incidents primarily involve the inhumane treatment of refugees, asylum seekers or juvenile offenders through improper detention, physical abuse, sexual abuse or assault, threats, harassment, or lack of access to proper medical care, sanitation or nutrition.</td>
</tr>
<tr>
<td>Water Rights</td>
<td>Social</td>
<td>Incidents relating to company activities that restrict a community's access to water, such as projects that divert water supply away from local usage. This may include the misuse of water intended for local supply or the construction of projects that affect water supply to local communities. It does not include disputes between communities and companies focused on the quantity of water usage, which is included in the Water Use tag.</td>
</tr>
</tbody>
</table>
### Incident type (main tag) | Theme | Incident description
--- | --- | ---
Accounting Irregularities and Accounting Fraud | Governance | Incidents relating to a company's attempt to misstate, manipulate, or misrepresent the information in its financial or accounting statements, with the primary goal of deceiving regulators and/or investors.
Animal Welfare | Governance | Incidents relating to a company's failure to ensure the wellbeing of animals and the freedom to express normal behavior. The scope of the tag includes housing, feeding, healthcare, transportation and slaughtering activities, as well as animal testing.
Board composition | Governance | Incidents relating to company actions that limit the board's capacity to provide objective oversight, free of any conflicts of interest. This includes cases when the CEO and Chairman roles are merged as well as company actions that limit the board's diversity. Most incidents are recorded after shareholder dissent regarding the appointments or reappointments of directors during AGMs or EGMs.
Bribery and Corruption | Governance | Incidents that relate to companies paying bribes or kickbacks to government officials or other private entities to obtain an unfair advantage over other companies.
Business Ethics (Other) | Governance | Incidents relating to a company's attempt to influence legislation in a way that would result in a negative ESG impact. This may also include lobbying that is in stark contrast to a company's declared policies or views. Incidents may take the form of political contributions in elections, electioneering in the workplace, or financing of third-party entities to alter the public perception regarding various ESG-related topics (climate change, tobacco legislation, GMO and other food labels, etc).
Corporate Governance (Other) | Governance | Incidents relating to company actions that may jeopardize its governance structure and oversight, such as executive misconduct, insufficient disclosure, controversial reorganizations or acquisitions, controversial ownership structures (e.g. cross-shareholdings), etc. Other examples include related-party transactions, the employment of relatives or friends, or controversies related to succession planning.
Insider Trading | Governance | Incidents relating to buying or selling a public company's stock or other security, breach of a fiduciary duty or other relationship of trust and confidence, while in possession of material, nonpublic information about the company.
Intellectual Property | Governance | Incidents relating to a company's breach of intellectual property rights such as patents, copyright, industrial design rights, trademarks, trade dress or trade secrets.
Lobbying and Public Policy | Governance | Incidents relating to negative lobbying, political contributions in elections, lack of transparency over lobbying and political spending, electioneering in the workplace, and other forms of involvement in politics that create the perception that the company is trying to gain an unfair advantage.
Remuneration | Governance | Incidents relating to a company's responsibility to ensure appropriate remuneration of its executives. Incidents are often recorded after stakeholder (media outlets, NGOs, shareholders, employees) criticism regarding the remuneration of company executives.
Resilience | Governance | Incidents relating to the ability of systemically important Financial Institutions (FIs) to withstand negative shocks arising from changes in economic conditions, and therefore to avoid negative impacts on society and taxpayers.
Shareholder Disputes/Rights | Governance | Incidents relating to a company's failure to uphold the rights of its shareholders or manage shareholder disputes. Incidents are generally recorded after shareholder lawsuits or resolutions, or company attempts to limit shareholder power.
Taxes Avoidance/Evasion | Governance | Incidents relating to a company's attempt to reduce the amount of taxes it pays through tax avoidance, aggressive tax planning or tax evasion, thus limiting a country's tax base.

*These tags were introduced to Sustainalytics' methodology after the commencement of this report.
†These two tags are combined as Quality and Safety in the report.
**Endnotes**


4. Our initial database contained 46 incident tags, but we grouped two tags – viz., Services Quality and Safety and Product Quality and Safety – under the heading Quality and Safety, resulting in a total of 45 incident tags. Since the time of this writing, our incidents team has added three new tags to their framework: Carbon Impact of Products, Employees (Other) Human Rights Violations, and Society (Other) Human Rights Violations, resulting in a total of 49 tags that are currently in use. A full description of these 49 tags can be found in the Appendix.

5. Sustainalytics Controversies Research, op. cit.

6. Sustainalytics clients can extract incidents data from Global Access.

7. We focus on short-term changes because, over the longer run, other confounding factors (mergers and acquisitions, market swings, new regulatory measures, etc.) could dampen the financial signal from individual incidents.

8. For example, Sustainalytics covered an average of 520 firms in the Banks industry and only 34 firms classified as Homebuilders from 2014-2016.

9. The market cap classifications we use are grouped as follows: Micro < USD 0.3bn, Small = USD 0.3-2bn, Mid = USD 2-10bn, Large = USD 10-200bn and Mega > USD 200bn.

10. As explained in the Methodology chapter, incidents are in part media-driven. Thus, ceteris paribus, regions with less media activity and coverage are likely to produce fewer incidents. On the language front, Sustainalytics’ incident collection system has evolved in recent years to cover several non-English languages. But the system does not currently capture media stories in all languages. For more details, see Sustainalytics Controversies Research (op. cit.)

11. To improve statistical significance, Table 8 looks only at countries that experienced more than 150 incidents and excludes countries that present difficulties regarding the processing of news in some languages.

12. For example, during the study we covered an average of 185 German companies and 524 Japanese companies.

13. This may be because the European Commission is based in Brussels, and some incidents involving EU wide regulatory or enforcement actions that cannot be linked to a particular country may be assigned to Belgium.

14. This number (14,564) is the total number of incidents within the dataset for which we had complete market cap information. We focus on short-term changes (comparing market cap values 5 days before and after an incident) because, over the longer run, other confounding factors (mergers and acquisitions, market swings, new regulatory measures, etc.) could dampen the financial signal from individual incidents.

15. The FTSE Global All Cap index is a market-capitalisation weighted index representing the performance of the large, mid and small stocks globally. For more information, see FTSE Russell Factsheet (31.10.2017), “FTSE Global All Cap Index,” last accessed (22.11.2017) at: http://www.ftse.com/Analytics/FactSheets/Home/DownloadSingleIssue/GAE?issueName=GEISLMS.
This calculation involved taking the average incident risk coefficient for each sector in the market portfolio and converting to a percentage. The tilts represent the difference between the sector weights in the market portfolio and the adjusted sector weights.


The fifty portfolio names were allocated across industries to reflect the industry composition of the index, which was approximated using the Vanguard Total World Stock ETF. For instance, the index had an 18.5% allocation to Financials as of Dec 31, 2013. Thus the portfolio consisted of 9 Financials companies (0.185 x 50 = 9) on Jan 2, 2014. Constituents were refreshed in this manner on Jan 2 of each year. The portfolio used drifting weights, but started each year with equal weight across 50 names (1 / 50 = 0.02).

The portfolio consists of the top incident performers by industry (companies with the highest average score on Sustainalytics’ ten controversy indicators). In cases of a tie, which were common, company ESG scores were used as a secondary determinant. While large companies tend to produce more incidents than small firms, they also tend to have higher overall ESG scores.


