10 FOR 2019: SYSTEMIC RISKS LOOM LARGE

January 2019

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About Sustainalytics

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Executive Summary
10 for 2019: Systemic Risks Loom Large

Key insights
Analysis to support global portfolio managers

- Using our new flagship ESG Risk Ratings, we identify some of the most pervasive ESG issues facing global investment portfolios and assess 10 firms with leading ESG management capabilities. Four themes emerge:

Theme 1: The human side of commodities
- Safety concerns abound for South African precious metals miners. In 2017, South African operations accounted for 49% (25 of 51) of ICMM fatalities.
- Slave labour is being used in Asian seafood supply chains and 84% of the global employee base in fisheries and aquaculture is in this region.

Theme 2: Front lines of the transition economy
- Oil and gas producers are feeling the heat. Capex of USD 1.6tn is being used to uncover new reserves and could be stranded by 2025.
- European utilities tilting to wind are well-positioned to handle rising prices of emission allowances, up from EUR 5/tonne in 2017 to 22/tonne today.
- Hydro accounts for 65% of global renewable electricity but social and environmental impacts in Asia are putting dam builders under scrutiny.
- Insured losses due to weather events reached USD 132bn in 2017. APAC insurers face large payouts and high carbon risk from their investments.

Theme 3: High stakes in the digital world
- Low levels of leadership diversity and high rates of discrimination incidents make the software and services industry notorious for gender inequity.
- We expect data privacy and security to be reframed as a source of competitive advantage in 2019, particularly for tech hardware firms.

Theme 4: Chemistry of the future
- Specialty chemicals are pivoting towards sustainability, spurred by the green coatings market, which is forecasted to reach USD 119bn by 2023.
- Pharma revenues hit USD 1.1tn in 2017. Human capital management will play an increasingly significant role in the industry’s future growth.

This report presents a forward-looking view of 10 pervasive environmental, social and governance (ESG) issues that could affect global investment portfolios in 2019. Applying the new Sustainalytics ESG Risk Ratings framework, we identify subindustries entering the new year with high levels of unmanaged risk, assess the risk drivers specific to a selection of these subindustries and profile 10 companies with leading ESG management practices. Continuing the tradition of looking back at the insights offered in the previous year’s iteration of our 10 for series, we assess the financial and ESG performance of the companies featured in 10 for 2018.
Introduction

ESG Risk Ratings and Material ESG Issues

The path we have taken

Over the past four years, our 10 for series has evaluated the prospects of companies to deliver shareholder value in the face of timely environmental, social and governance (ESG) themes. We have delved into a wide range of topics – from quantitative easing policies and slumping oil prices (10 for 2015) to the financial upshots of the Paris Agreement (10 for 2016), uncertainties associated with dramatic advances in technology and shifting geopolitical conditions (10 for 2017) and corporate risks linked to water management, climate change, consumer protection and stakeholder governance (10 for 2018).1

Looking ahead

In this instalment of our 10 for series, we leverage Sustainalytics’ new ESG Risk Ratings framework to assess the positioning of companies on a broad spectrum of Material ESG Issues (MEIs). As summarized in the table below, we zero in on a selection of subindustries with high levels of unmanaged risk, dig into the risk drivers and identify firms that are ready to hit the ground running in 2019.

A cross section of MEIs facing global portfolios in 2019

<table>
<thead>
<tr>
<th>MEI Subindustry</th>
<th>Context</th>
<th>Company</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational Health and Safety</td>
<td>Gold</td>
<td>Poor operational health and safety performance at gold mines presents risks linked to employee fatalities, injuries, illnesses, delays, lawsuits, fines and stock price declines.</td>
<td>Agnico Eagle Mines Ltd</td>
</tr>
<tr>
<td>Human Rights - Supply Chain</td>
<td>Food Retail</td>
<td>Food retailers with supply chains linked to the Asian fish market face scrutiny as fresh revelations about human rights abuses in fisheries and aquaculture make headlines.</td>
<td>J Sainsbury PLC</td>
</tr>
<tr>
<td>Carbon - Products and Services</td>
<td>Integrated Oil &amp; Gas</td>
<td>Amidst a fossil fuel glut, oil and gas producers grapple with the prospects of having expensive assets stranded as regulators and investors take action.</td>
<td>MOL Group SA</td>
</tr>
<tr>
<td>Carbon - Own Operations</td>
<td>Electric Utilities</td>
<td>Electric utilities will play a key role in reducing global emissions as they have large carbon footprints and help supply transportation and heating requirements.</td>
<td>Ørsted AS</td>
</tr>
<tr>
<td>Product Governance</td>
<td>Non-Residential Construction</td>
<td>Demand for renewable energy stimulates growth for hydroelectric dams but dam builders face quality risks, especially in Asia where dams are under scrutiny following a catastrophic collapse.</td>
<td>Daewoo E&amp;C Co Ltd</td>
</tr>
<tr>
<td>ESG Integration - Financials</td>
<td>Property &amp; Casualty Insurance</td>
<td>P&amp;C insurers face costs of escalating payouts for climate change-driven disasters and carbon-related risks associated with their underwriting and investment activities.</td>
<td>Suncorp Group Ltd</td>
</tr>
<tr>
<td>Corporate Governance</td>
<td>Internet Software and Services</td>
<td>Software and services firms have faced a slew of discrimination and harassment incidents which may in part be linked to a lack of diversity in senior leadership.</td>
<td>eBay Inc</td>
</tr>
<tr>
<td>Data Privacy and Security</td>
<td>Technology Hardware</td>
<td>Tech hardware companies can differentiate themselves by integrating privacy protections as an aspect of their product offerings.</td>
<td>Apple Inc</td>
</tr>
<tr>
<td>E&amp;S Impact of Products and Services</td>
<td>Speciality Chemicals</td>
<td>The green coatings market is being driven by consumer awareness about the environmental impacts of chemicals production, tightening regulations and green building standards.</td>
<td>Akzo Nobel NV</td>
</tr>
<tr>
<td>Human Capital</td>
<td>Pharmaceuticals</td>
<td>Human capital management will be instrumental for ensuring the cultural compatibility of consolidating pharma companies and the success of their R&amp;D initiatives.</td>
<td>Roche Holding AG</td>
</tr>
</tbody>
</table>

Source: Sustainalytics
Systemic risks surface in unique ways

The articles within this report illustrate how 10 broad ESG issues materialize in unique ways in different markets. But as indicated by the chart below, the issues we assess have bearing on a much broader segment of the economy, presenting systemic risks to global portfolios. Our foray into the issue of Product Governance, for example, assesses ESG risks that are unique to hydroelectric dam builders in the non-residential construction subindustry. But product governance is of course material to companies in other sectors as well. Indeed, we regard it as an MEI for 94 of the 138 (68%) subindustries covered by Sustainalytics.

Proportion of Sustainalytics subindustries affected by the MEIs covered in this report*

![Chart showing proportion of subindustries affected by MEIs]

*As of January 2019. Source: Sustainalytics

Selection criteria for featured MEIs and subindustries

The MEIs featured in this report were selected based on their predominance across subindustries and their importance in terms of unmanaged risk, the cornerstone of the ESG Risk Ratings. The MEI Carbon – Own Operations, for example, is applicable to 59% of the subindustries in our universe and is only becoming more relevant for investors as we shift towards the transition economy.

With 10 MEIs in hand, the next step was to determine which subindustries to profile. Subindustries were largely selected based on their average unmanaged risk score for the MEI in question. For example, in our discussion of the Occupational Health and Safety MEI, we profile the Gold subindustry, where this MEI is especially important and companies have high levels of unmanaged risk.
Topics to watch in 2019

Four broad themes

While each of the articles contained in this report focuses on a distinctive MEI, we group them under four broad themes: (1) concerns about working conditions that are increasingly important to the production of global commodities, (2) carbon transition and physical climate risks, (3) gender equity and data privacy in the tech sector and (4) environmental and human capital issues affecting chemicals and pharmaceuticals companies.

The human side of commodities

Disturbing trends about working conditions in emerging markets are set to shake up responsible investment portfolios in 2019 after problematic labour practices in gold mining, fisheries and aquaculture made international headlines in 2018. Although we see modest signs of improvement in the health and safety performance of some mining operations, fatality rates are on the rise in South Africa. Meanwhile, human rights abuses in Asian fisheries and aquaculture present supply chain risks to global food retailers. Our case studies demonstrate the legal, reputational and financial toll of inhumane labour conditions.

Front lines of the transition economy

Transition risks pervade the global economy, and oil and gas players, electric utilities, dam builders and P&C insurers are on the front lines. Looking at integrated oil and gas companies, we see firms hedging against carbon risks by diversifying their products and services. In Europe, where electric utilities face climbing emission allowances prices, opportunities await firms that build, manage and sell wind-generated power. While hydroelectric power accounts for most of the renewable energy on market, Asian dam builders face fallout from a recent catastrophic dam failure in Laos. On the insurance side, firms in Asia-Pacific face volatile weather patterns, the impacts of which are projected to escalate as the planet warms.

High stakes in the digital world

Technology giants, such as Facebook, Apple and Google, dominated headlines in 2018 with material controversies including data privacy concerns, record antitrust fines and trends related to gender inequity. Our analysis of internet software and services companies looks at the relationship between a lack of gender diversity in senior leadership, and high rates of harassment and discrimination incidents. Turning to the tech hardware space, we zero in on data privacy concerns. While software firms have been at the centre of some of the most high-profile personal data breaches, hardware companies that have direct commercial relationships with their consumers are well positioned to find an opportunity to market their products as secure, particularly with regard to personal information.
Chemistry of the future
Consumer demand for green commodities and human capital considerations are helping to shape the future of chemistry. We see upside for specialty chemicals producers that incorporate sustainability concepts into their product design and development. Concentrating on the coatings and paintings segment, we assess companies that offer green coatings to manage the human health and environmental impacts of their products and services. Turning to the pharmaceuticals market, we see human capital factors playing an important role in determining the synergies of M&As, which are on the rise, as the variety of skillsets and cultural compatibility of a merging workforce can produce value through R&D initiatives.

Structure of this report
We proceed by delving into the 10 MEIs that could affect global markets in 2019. The 10 articles are presented in the order outlined above and grouped under four broad themes. We then look back at the companies featured in 10 for 2018: ESG Risks on the Horizon. Our retrospective analysis maps the ESG risks that we saw facing companies in 2018 to a set of corresponding MEIs.

For readers who are unfamiliar with the new Sustainalytics ESG Risk Ratings methodology, which was launched in the third quarter of 2018, we include an Appendix that provides a primer on the concept of unmanaged risk. Unmanaged risk is driven by two main dimensions: exposure and management. As unmanaged risk is fundamental to the ESG Risk Ratings framework, it is also instrumental in the analysis presented throughout this report.

Structure of the report
Gold Mines: Unsafe Havens

Interest in gold brings safety concerns to the surface

We expect many investors to reconsider their exposure to commodity stocks in 2019, particularly precious metals. The battering of global equity markets in 2018 has rekindled interest in commodities, which historically have had a low correlation with public equities. In fact, gold stocks outperformed the market in Q42018, with the TSX Gold Index up 18.4% while the TSX as a whole was negative. M&A activity could also lure investors in 2019. The mega-merger of Goldcorp and Newmont Mining (announced in January 2019), as well as Barrick and Randgold Resources (December 2018) could kick-off a wave of consolidation across the sector.

While 2019 could be the year that investors return to precious metals, the sector’s longstanding ESG concerns remain. We believe that companies’ management of occupational health and safety presents a particularly salient risk factor for executive teams and investors to monitor in 2019. Employee fatalities, injuries and illnesses can result in costly operational delays, lawsuits and fines, all of which can impact stock prices.

According to data compiled by the International Council on Mining and Metals (ICMM), health and safety performance has improved slightly over the last five years among its member companies, which represent a geographically diverse set of the largest miners in the world. Overall injury and fatality rates fell between 2012 and 2017. Yet major differences in safety performance by region persist. South African operations accounted for 49% (25 of 51) of ICMM fatalities in 2017. Part of the reason for this disproportionate number of fatalities is because South African mines rely on more working hours (about 452 million in 2017) than any other country in the world. But as shown in the figure below, normalizing by hours worked, the country’s fatality frequency rate of 0.05 fatalities per million hours worked exceeds that of other major metal producing regions.

Mining fatalities per continent, 2017

ICMM sees overall improvement but South African operations at risk
Occupational health and safety risk in South Africa

The large number of hours worked in South Africa reflects the more labour-intensive method of mining used in the country. South Africa has some of the oldest and deepest operating mines in the world, which increases risks of geological instability and rockfalls. High temperatures underground further increase risks of injury or fatality. The deeper, narrower mines in South Africa are less suitable for mechanization, resulting in employees doing some of the dangerous work typically done by machines in other mines.

The experience of Sibanye illustrates how mining health and safety incidents can impact shareholder value. In the first half of 2018, the firm experienced 21 fatalities, which resulted in facility closures, investigations and operational delays. These events coincided with a production decline of 24% compared to the 2017. It is now being investigated by the South African Mine Health and Safety Inspectorate, and the chairperson of the South African Portfolio Committee on Mineral Resources stated that the firm’s mining licence may be suspended. Sibanye’s stock price plummeted 44% between January and Dec 2018, and shareholders have since filed a class action lawsuit, claiming that the firm misrepresented health and safety risks and failed to manage them, leading to stock price losses.

The chart below compares the health and safety performance of a set of gold mining companies based in South Africa, Canada, Australia and the US. Of the firms in this sample, Sibanye faces the greatest unmanaged operational health and safety risk (9.1) and experienced the most fatalities (53) between 2015 and 2018. Its high risk profile is in part due to the labour-intensive nature of its operations, its incident track record and its weak health and safety management programme, which lacks basic emergency preparedness procedures. On the other side of the spectrum, Canadian miner Agnico Eagle experienced one contractor fatality over this period and, for reasons discussed below, faces relatively low levels of unmanaged risk on this MEI (2.3).

Comparing a selection of global gold miners on health and safety performance

*2015-2017 data based on company reporting, 2018 estimates based on news reports. *Source: Sustainalytics
Agnico Eagle Ltd
Strong health and safety management supported by a proven track record

Country: Canada
Subindustry: Gold
Ticker: AEM (CN)
MCap (USD mn): 9,488*
* as of 31 December 2018

Key insights
- Agnico Eagle mitigates safety risks with the aid of mine visualization software and automation systems.
- The firm has received numerous industry health and safety awards and all of its operations are rated A, AA or AAA for health and safety management.
- Its Meliadine project in Nunavut will come online in Q2 2019 and is forecast to yield 385,000 ounces by 2020, the equivalent of 22% of 2017 production.

Overview
Agnico Eagle manages health and safety risks with a best-in-class approach to systems monitoring and cutting-edge technology. The company monitors seismic risks at its underground mines, sequences mining activities and prioritizes communication systems in case of an emergency. At its LaRonde mine, which has the deepest shaft (2.2 km deep) in the Western Hemisphere, its scoop automation project allows an employee to operate a scoop 3 km below ground from the surface. Its communication systems allow for remote cell phone use in case of an emergency.13 At its Kitilla mine, it uses mine visualization software to track the movement of people, machines and vehicles underground. It estimates this software will reduce evacuation time by 25%, if one occurs.

Agnico Eagle’s management systems are based on the OHSAS 18001 standard. All of its operations have received A, AA or AAA ratings from the Mining Association of Canada for health and safety management.14 Its Canadian Malartic and Lapa mines have received health and safety awards from the Quebec mining association, the Canadian Institute of Mining, Metallurgy and Petroleum.15 Its Goldex mine was the first mine to be certified “Enterprise en Santé” (a health business).16 Since 2015, it has experienced one contractor fatally, which occurred underground at its Kitilla mine in 2016.17 Its lost-time and restricted work frequency rate improved every year from 2010-2017.18

Outlook – breaking new ground
Agnico Eagle’s Meliadine project in Nunavut is forecast to start production in Q2 2019. Its forecast 2020 production is expected to equal 385,000 ounces, or 22% of 2017 production, and the mine is therefore expected to be a great growth opportunity for the company.19 With an approach to health and safety risks focused on regular identification of its largest safety risks and its strong performance to date, we see upside due to Agnico Eagle’s ability to prevent delays to operations, secure future output and maintain its current cost structure.
Slavery in Seafood Supply Chains

Food retailers embroiled in human rights controversies

Seafood is one of the world’s oldest and most highly traded commodities, continually supported by strong demand from the US, Japan and Europe. While the developing world depends on fish as an affordable source of protein, health conscious consumers in developed nations are trending towards fish due to its rich nutritional value and as a protein alternative to meat. For decades, developing nations have been a key supplier in the global seafood industry, accounting for USD 77bn of the USD 143bn in fishery exports in 2016.\textsuperscript{20} According to data published by the Food and Agriculture Organization (FAO) of the United Nations, Asia and Oceania currently produce 114 million tonnes of fish annually, accounting for 68% of the global supply. As shown in the chart below, production in these regions is expected to grow to 140 million tonnes by 2025.\textsuperscript{21}

Despite the expected uptick in fish production, we believe food retailers with supply chains linked to Asia will face increased scrutiny in 2019. According to the FAO, 84% of the global fisheries and aquaculture employee base is in Asia.\textsuperscript{22} Following up on a 2014 exposé by The Guardian that revealed slavery and human trafficking in the Thai fishing industry, Human Rights Watch published a report in early 2018, finding that human rights abuses in the seafood supply chain continue to exist despite government efforts to improve the regulation of the fishing industry.\textsuperscript{23} Exploitation is occurring not only out at sea, but also in processing plants\textsuperscript{24} and throughout the aquaculture industry,\textsuperscript{25} the fastest growing food production sector in the past 20 years, where typically migrant women and children make up the workforce. Consequently, firms in the seafood business are finding themselves increasingly at risk of litigation, public scrutiny and reputational damage.

**Forecast of fish global production (live weight equivalent) for 2025**

\begin{center}
\includegraphics[width=\textwidth]{forecast_chart.png}
\end{center}

By 2025, countries in Asia and Oceania are projected to produce 140 million tonnes of fish, more than twice that of the rest of the world combined.

\begin{flushright}
\textbf{Source:} FAO, Sustainalytics\textsuperscript{26}
\end{flushright}
Deep concerns about human rights

Despite the difficulties of enforcing supply chain standards in the seafood industry, companies are facing mounting pressure from regulators, stakeholders and consumers to do exactly that. After labour abuses in the Thai seafood industry were brought under the spotlight in 2014, the US Trafficking in Persons (TiP) downgraded Thailand to the lowest rank, alongside North Korea and Iran. The EU issued an IUU “yellow card” warning to Thailand in 2015 and, by 2016, seafood imports to the EU from Thailand had fallen 10%. In the event of a “red card,” Thai seafood would be banned from being sold in Europe, presenting an operational challenge to European food retailers selling Thai seafood products.

In 2016, migrant workers from Myanmar received USD 1.3mn in compensation from a Golden Prize Thai Canning for labour abuses at a processing plant, while seven Cambodian workers continue to pursue legal action against two Thai food firms (Phatthana Seafood and SS Frozen Food) and two US importers (Rubicon Resources and Wales & Co). As seafood suppliers and processors face legal action by victims of abuse, food retailers are being held up in court by customers. Three Californian law firms fought for an injunction against Costco for selling prawns not labelled as sourced using slave labour. Costco was accused of misleading customers by stating in its supplier code of conduct that it prohibited human rights abuses. Although the court case was dismissed in 2017, it illustrates how slavery in the supply chain can result in legal action and reputational fallout.

The table below reveals that, while many high-profile food retailers disclose strong supply chain programmes and policies, there are substantial differentials in their Human Rights – Supply Chain unmanaged risk scores. These gaps reflect differences in company exposure to and management of this issue and their involvement in corporate incidents. Walmart, for instance, has a perfect score on Supply Chain Management, but the frequency and severity of human rights incidents associated with its supply chain contributes to its high level of unmanaged risk on the issue. J Sainsbury also has a perfect score on this metric but, unlike Walmart, it has steered relatively clear of such controversies, suggesting it has a more effective approach to supply chain management.

A closer look at a selection of companies in the Food Retailers subindustry

<table>
<thead>
<tr>
<th>Company</th>
<th>Country</th>
<th>Overall Risk Category</th>
<th>Human Rights - Supply Chain Unmanaged Risk Score</th>
<th>Human Rights - Supply Chain Risk Category</th>
<th>S.2.1 Scope of Social Supplier Standards Score</th>
<th>S.2.2.2.1 Supply Chain Management Score</th>
<th>Number of supply chain incidents related to child labour, forced labour and other employee human rights violations*</th>
</tr>
</thead>
<tbody>
<tr>
<td>J Sainsbury PLC</td>
<td>UK</td>
<td>Low Risk</td>
<td>1.5</td>
<td>Negligible Risk</td>
<td>100</td>
<td>100</td>
<td>4</td>
</tr>
<tr>
<td>Aeon Co Ltd</td>
<td>Japan</td>
<td>Low Risk</td>
<td>1.7</td>
<td>Negligible Risk</td>
<td>75</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>Carrefour SA</td>
<td>France</td>
<td>Low Risk</td>
<td>1.7</td>
<td>Negligible Risk</td>
<td>100</td>
<td>75</td>
<td>3</td>
</tr>
<tr>
<td>Loblaw Companies Ltd</td>
<td>Canada</td>
<td>Medium Risk</td>
<td>1.7</td>
<td>Negligible Risk</td>
<td>100</td>
<td>50</td>
<td>1</td>
</tr>
<tr>
<td>The Kroger Co</td>
<td>US</td>
<td>Low Risk</td>
<td>1.7</td>
<td>Negligible Risk</td>
<td>75</td>
<td>75</td>
<td>2</td>
</tr>
<tr>
<td>Costco Wholesale Corp</td>
<td>US</td>
<td>Medium Risk</td>
<td>2.1</td>
<td>Low Risk</td>
<td>100</td>
<td>25</td>
<td>7</td>
</tr>
<tr>
<td>Tesco PLC</td>
<td>UK</td>
<td>Medium Risk</td>
<td>2.5</td>
<td>Low Risk</td>
<td>100</td>
<td>75</td>
<td>3</td>
</tr>
<tr>
<td>Walmart Inc</td>
<td>US</td>
<td>High Risk</td>
<td>6.1</td>
<td>High Risk</td>
<td>100</td>
<td>100</td>
<td>25</td>
</tr>
</tbody>
</table>

*This record includes seafood and non-seafood related supply chain incidents involving human rights controversies between 2014-2018. **Source: Sustainalytics**
J Sainsbury PLC

Proactive measures to steer clear of human rights controversies in supply chain

Key insights

- Despite not being named in seafood slavery allegations, Sainsbury has taken proactive steps to acknowledge and address slavery in the seafood industry.
- In 2017, Sainsbury was named the world’s best supermarket for having the most MSC certified sustainable seafood products.
- The firm works with third-party organizations, such as the Issara Institute and OceanMind, to improve transparency in seafood supply chains.

Overview

While Sainsbury has been reported in several supply chain labour controversies, it has concentrated its efforts to mitigating human rights risks. Despite not being named in the Guardian’s exposé, Sainsbury acknowledged the issue of slavery in the seafood supply chain in 2014 and has since engaged in several initiatives to address the issue. In 2014, it became one of 10 UK retailers and seafood importers to partner with the Issara Institute, which works directly with suppliers to help develop ethical recruitment processes, site assessments, technical support and training. It also provides a multilingual helpline for workers.

Sainsbury works with OceanMind to track movements of fishing boats and improve transparency. It works with Verité to addresses victim support and remediation. It also engages with seafood supply chain stakeholders to address industry concerns through the Seafish platform and issued a supplier policy on ethical trade in accordance with the Ethical Trading Initiative, the International Labour Organisation and the Universal Declaration of Human Rights. In 2017, Sainsbury was named number one supermarket for having the most MSC certified sustainable seafood products.29

Outlook – an upside linked to cost control and business continuity

Sainsbury enters the new year well prepared to address human rights factors in its supply chain. Its 2018 human rights policy commits to the Consumer Goods Forum’s Forced Labour Priority Industry Principles and its ethical auditing of its supply base is conducted by SEDEX. Working with PricewaterhouseCoopers and Ergon, the company recently developed a Modern Slavery Risk Assessment Tool, which can be applied to its entire business. Against a range of risk indicators, the tool analyzes internal and external data to provide a risk assessment of Sainsbury’s multiple tiered supply chain and can be tailored to specific product types and sectors. These initiatives will help the company channel its efforts to the areas of highest risk.
Oil, Gas and Low Carbon Survival

Energy companies making the case

While fossil fuels currently supply over 70% of global energy, changing patterns of energy consumption and an increasing understanding of the economic impacts of climate change will force dramatic changes to the business models of global oil and gas firms. In 2019, we see (1) a fossil fuel glut, (2) a growing recognition that climate change is threatening conventional oil and gas firms, (3) regulations in certain markets and (4) mainstream investor interest in mitigating carbon risk as the primary drivers of increased attention on carbon stranded asset risk in the integrated oil and gas subindustry.

According to Carbon Tracker, in a 1.75°C by 2100 scenario, USD 1.6tn of capex could be spent over the next seven years to find resources that will never be produced or sold. Though most global hydrocarbon reserves are controlled by state-owned companies, the vast majority of the capex at risk will be spent by private sector companies, as shown in the figure below.

Driven in part by the emergence of unconventional production in North America and slower demand growth, persistent oversupply of oil, gas and coal since 2015 has shifted concerns about “peak oil” to the idea that there are more hydrocarbons available than the world economy will be able to burn. While exploration capex will still be needed, this potential oversupply calls into question whether some investments in finding new hydrocarbon reserves will ever be recouped. According to the International Energy Agency, global oil supply will outpace demand throughout 2019, continuing the price war that we have seen between producers over the past several years.

Oil & gas potential capex by ownership, 2018-2025*

![Oil & gas potential capex by ownership, 2018-2025](image)

*Source: Carbon Tracker, Sustainalytics

*NPS, New Policy Scenario (existing and proposed carbon regulations) (2.7°C);
SDS, Sustainable Development Scenario (2°C); B2DS, Below Two Degrees Scenario (1.75°C).
Which oil and gas producers will be left standing?

Fossil fuel producers are facing mounting regulatory pressure to transform their business models. Canada has imposed a nationwide carbon tax yet is struggling to support pipeline construction and oil sands production due to high costs and weak demand. China is moving away from coal and ramping up LNG imports from the Russian Federation and other gas exporting countries.

Investor pressure

More than 513 organizations, including major institutional investors, such as Goldman Sachs and Cornerstone Capital, have voiced their support for the mainstreaming of climate risk disclosures in traditional financial statements. Investor support is also emerging in the form of shareholder resolutions. In a 2017 vote, Wespath Investment Management’s resolution filed with Occidental Petroleum garnered 67% support for increased climate risk disclosure. While fossil fuel divestment remains niche, it has started a broad debate. Investors have launched the Climate Action 100+, a five-year initiative to ensure that the largest contributors to climate change take more action to curb emissions.

Assessing integrated oil and gas

The carbon intensity of an oil and gas producer’s reserves and production play a major role in measuring its carbon risk exposure. Advances have been made in reducing the energy needed to extract bitumen. But as suggested by the chart below, the fuel sold by an oil sands producer, such as Suncor, has a higher lifecycle carbon intensity than that of a diversified producer, such as Total, which has about half of its reserves in natural gas and sold the last of its oil sands assets in 2018. While Occidental Petroleum (Oxy) and Rosneft have similar lifecycle carbon intensities, Oxy’s unmanaged risk is significantly lower due to its fairly sophisticated risk management system, which includes board-level responsibility for addressing transition risks and has begun to include some modest climate scenario modelling. In contrast, Rosneft does not disclose a GHG risk management system, despite some initiatives to lower methane leaks and other GHG reduction initiatives. MOL Group combines a relatively low risk exposure with strong management, resulting in some of the least unmanaged risk on this MEI in this subindustry.

Carbon transition risk and preparedness of integrated oil and gas producers

![Graph showing carbon transition risk and preparedness of integrated oil and gas producers]

Source: Sustainalytics
Mol Group
A plan to thrive “beyond the fuel age”

Country: Hungary
Subindustry: Integrated Oil & Gas
Ticker: MOL (BUD)
MCap (USD mn): 9,339*
* as of 31 December 2018

Key insights
- MOL is transforming the output of its refineries from fuel to petrochemical production, with a target of 50% of overall production by 2030.
- The firm will invest around USD 1.5bn every five years until 2030 to upgrade existing assets and develop new business lines.
- Despite some execution risk on its retail strategy, MOL’s transition strategy will be hard to duplicate, giving the company a valuable economic moat.

Overview
As Hungary’s largest integrated oil and gas company, MOL Group (Magyar OLaj- és Gázipari Részvénytársaság) serves as the backbone of much of Hungary’s oil and gas supply to consumers, from production, to refining and sales at the petrol station. In FY2018, MOL derived most of its revenues from its refining operations and hydrocarbon sales, with less than 10% from oil and gas exploration. In anticipation of a decline in gasoline sales, MOL reports plans to invest in adapting its refining operations to produce petrochemicals instead of petrol. This is a plan that not only mitigates transition risk, but capitalizes on opportunities created by it, positioning the company to meet a demand for energy efficiency-related products, which will grow in a carbon-constrained economy.

After two years of lowering overall GHG emissions, Mol increased its emissions by 17% in 2017 compared to 2016, largely due to the consolidation of downstream assets. But it has also reduced emissions at the project level by investing in flaring operations in Croatia and an Enhanced Oil Recovery Program.

Anticipating a decrease petrol demand, MOL is transitioning its petrol stations to derive more revenue from ancillary purchases, such as food and drink, broadening its service centres for travellers. While the new revenues generated from these initiatives may be relatively modest, the long lead time needed for refinery retrofits should provide MOL with an edge, as it will be difficult for competitors to pivot quickly to a similar model. We find its strategy of capitalizing on existing assets is more holistic than that of many larger oil and gas players.

Outlook – moving early to get the timing right
While we anticipate a more crowded and competitive landscape for MOL in 2019, the firm has articulated an integrated transition strategy. In our view, the firm’s moat and timing make it better positioned than most mid-sized producers to ride out the great disruption of transitioning to a low carbon economy.
Renewable Tailwinds for Utilities

The electric utilities subindustry in flux

We anticipate that electric utilities will continue to ramp up efforts to diversify their energy mix and mitigate GHG emissions in 2019. These companies will have a major role to play in meeting global emissions reductions targets, not only in reducing their own operational emissions but also by helping to accommodate fuel switching as transportation and heating move away from fossil fuels and become increasingly electrified. As shown in the chart below, transport, electricity and heat generation account for 39% of the world’s GHG emissions.  

The transition towards renewables in the electric utilities subindustry will be driven by three factors: (1) the growing cost competitiveness of renewable sources of energy, (2) regulatory pressures, such as tightening carbon markets, and (3) pressure from consumers, investors and other stakeholders. While utilities that continue to rely heavily on fossil fuel face costs associated with carbon pricing, costly feedstocks and reputational damage, those ahead of the carbon transition curve will be well positioned to make gains in the years to come.

According to Lazard’s 2018 report on the Levelized Cost of Energy (LCOE), since 2009 the unsubsidized photovoltaic and wind LCOE dropped 88% and 69%, respectively, while that of coal grew by 9%. Today, renewable energy costs can be significantly lower than those of conventional fuels, including coal, gas and nuclear. At the low end, the unsubsidised levelized cost of onshore wind-generated energy is USD 29/MWh, while the average marginal cost of coal-generated energy is USD 36/MWh.  

As utilities tilt their energy mix towards renewables, we expect to see their long-term cost savings support lower energy prices for customers and a more competitive landscape for energy producers.

Greenhouse gas emissions by economic sector (2010 total 49 Gt CO$_2$-eq)*

*2010 estimate.

Source: IPCC,* Sustainalytics
Transition pressures pronounced in Europe

As renewables have become more cost competitive, coal-heavy utilities have faced increased compliance costs related to GHG and other emissions, leading them to struggle financially. Some existing coal plants have been running far below capacity, resulting in declining profitability. Cap and trade schemes have developed in some major markets across North America and Asia, but the European Emissions Trading System (ETS) imposes the highest cost on utility GHG emissions globally. The ETS price of allowances has risen dramatically, up from EUR 5/tonne in early 2017 to more than EUR 22/tonne in early 2019.

Reputational and operational risks

Reputational and operational risks are also driving the transition. Coal remains by far the most carbon-intensive form of electric power, making it a lightning rod for civil society opposition. Recent actions aiming to stop the expansion of RWE’s coal mine in the Hambach Forest illustrate these risks. In October 2018, an estimated 50,000 people demonstrated against the expansion. Subsequently, an Administrative Court granted an appeal filed by an environmental group challenging the permit, delaying work at the site until at least April 2019.

Investors taking note

Major financial institutions, such as the World Bank and HSBC, have announced a curtailment to financing new coal projects, while others, such as ING, RBS, Société Générale and BNP Paribas, have announced that they will only continue providing loans to utilities that meet criteria to reduce coal-fired generation.

Assessing carbon risk and renewables

The chart below shows how utilities with larger percentages of renewables in their generation mix generally have lower unmanaged risks related to Carbon – Own Operations. Firms that are heavily reliant on coal face much higher levels of risk, while those that have a more diverse energy mix, such as Enel and Iberdrola, have lower unmanaged risk scores. Ørsted has the highest fraction of generation from renewables among the large publicly traded EU utilities in this set and, though it still has significant coal as well, its renewable energy and coal phase-out commitments are ambitious.

**Electric utilities’ exposure to renewables and unmanaged operational carbon risk**

*Percentage of energy from renewables and Carbon - Own Operations Unmanaged Risk Score.*

*Total renewables included in this figure biomass cogen, wind, hydro and geothermal. Source: Sustainalytics*
Ørsted AS
Global offshore wind leader goes all-in on renewables

21.8
Overall
Unmanaged
Risk Score
Medium Risk

17
out of
153
Rank, Overall
Unmanaged Risk Score
13th Percentile

2.2
Unmanaged Risk Score, Carbon - Own Operations
Low Risk

Country: Denmark
Subindustry: Electric Utilities
Ticker: ORSTED (LI)
MCap (USD mn): 28,183*
* as of 31 December 2018

Key insights
- Ørsted generates revenue from the construction and operation of wind power. In FY2017, over 90% of EBITDA came from the wind power segment.
- The company is the largest operator of offshore wind globally by capacity, and is planning to triple this capacity by 2025, investing USD 30bn.
- It has converted existing coal CHP plants to biomass and plans to phase out coal and run 95% fossil-fuel-free for all power and heat generation by 2023.

Overview
Ørsted has completely transformed its operations since 2006 when it was one of the most carbon-intensive utilities in Europe. The company is now the largest operator of offshore wind in the world and has plans to roughly triple offshore capacity by 2025. Originally known as Dansk Olie og Naturgas AS, the company had historically been involved in offshore oil and gas in the North Sea and coal-heavy heat and power, operating many combined heat and power (CHP) plants across urban centres in Denmark. It has since sold of its oil and gas assets, acquired several smaller electric and public utilities and changed its name.

As the world’s largest offshore wind owner and operator, Ørsted benefits from economies of scale. In 2017, it won two of the three first tenders for offshore wind farms to be built completely without subsidies. The firm not only builds its own projects but also acts a contractor and sells off projects after construction. Most of its biomass is certified sustainable.

While Ørsted’s primary focus is offshore wind, the firm has also converted many of its existing coal CHP plants to biomass, with plans to phase out coal and run 95% fossil-fuel-free for all power and heat generation by 2023. As it supplies over a quarter of Danish district heat delivery, carbon reductions at these plants will significantly reduce emissions for much of the country’s economy. Ørsted is also involved in commissioning of biogas plants using industrial and municipal waste.

Outlook – catching the tailwinds of wind power
Ørsted is continuing to make major investments in offshore wind, which will receive 85% of its gross investments in coming years, totalling USD 30bn by 2025. The company has won contracts to build projects in areas that are new to offshore wind, such as the US and Taiwan. Globally, offshore wind potential is essentially untapped and with capacity expected to more than quadruple from 2017 to 2025, Ørsted is well situated to take advantage of these trends.
Dam Power, Quality and Safety

Demand for renewable energy fuelling financial growth

Hydroelectric dams remain the largest sources of renewable energy worldwide, accounting for over 65% of global renewable electricity sources and 13% of all electricity generation in 2017. But hydroelectric dams present a host of sustainability concerns. From an environmental standpoint, dam construction can lead to ecosystem destruction. In Brazil, for example, the construction of 10 hydropower plants between 2003 and 2013 led to the clearing of 222,000 hectares of forest. From a social perspective, negative impacts include the displacement of populations and water supplies. The World Commission on Dams estimates that the 50,000 large dams operating worldwide have displaced as many as 80 million people.

While we expect increasing demand for renewable energy to fuel the growth of hydroelectric dams in 2019, sustainability concerns pose a clear risk to the bottom line of firms involved in these projects.

Emerging markets have become a magnet for hydropower investments, with many dam projects on course to move from the planning phase to construction. As shown in the figure below, the International Hydropower Association estimates that the East Asian and Pacific regions added 9.8 GW of capacity in 2017, more than the combined capacity of the next three leading regions – South America, South and Central Asia and Europe. While large projects in East Asia offer benefits of power generation efficiency, they are also associated with significant risks to communities, companies and investors. Poor product governance, such as a failure to adequately manage environmental and social impacts, can lead to shoddy dam construction, structural hazard instabilities and catastrophic collapses.

Global hydroelectric capacity growth in 2017

Source: IHH\textsuperscript{58} Sustainalytics
The rainy season casts doubt on dam builders

The impacts of substandard construction are illustrated by the July 2018 Laos dam collapse, which resulted in the flooding of 12 downstream villages, 6,000 people displaced and at least 40 fatalities. The Minister of Mines and Energy of Laos stated that developers will bear full responsibility for paying compensation and remediation. Although the companies in the consortium face significant remediation and compensation costs, specific details about who will pay what have yet to be disclosed. We expect SK Engineering and Construction (SK E&C), Korea Western Power, Ratchaburi Electricity Generating Holding and Lao Holding State Enterprise to face legal, operational and reputational risks for overseeing the project.

After the incident, SK E&C’s stock plunged 30%, while its biggest shareholder, SK Holdings, saw a fall of 6.2%, representing its biggest daily loss since 2016. Other dams within the project are under scrutiny and may need to be rebuilt or otherwise improved, which would lead to further delays and costs. Since the collapse, commercial operations have been postponed to late 2019, instead of February 2019. Such large-scale disasters involving a significant loss of life may hinder the efforts of the companies involved to win future contracts with the government of Laos, restricting their business opportunities.

While internal quality risk assessments and regular audits are important for assessing product governance, we find that unmanaged product governance risk among hydroelectric dam builders tends to correspond to external quality management system (QMS) certifications, which can improve product and service quality while assuring that management systems are consistently assessed, improved and approved. As indicated in the chart below, dam construction firms that face higher levels of unmanaged product governance risk, such as SK Holdings and Hochtief, also perform poorly on our QMS metric. In contrast, Daewoo E&C, Ferrovial and L&T demonstrate their ability to efficiently manage product governance, with high QMS scope and quality programmes.

### Product governance of hydroelectric dam construction companies

![Chart showing product governance of hydroelectric dam construction companies](chart.png)

**Source:** Sustainalytics
Daewoo Engineering & Construction Co Ltd

Daewoo is well positioned on product governance

<table>
<thead>
<tr>
<th>Overall Unmanaged Risk Score</th>
<th>27.2</th>
<th>Rank, Overall Unmanaged Risk Score</th>
<th>4 out of 204</th>
<th>Unmanaged Risk Score, Product Governance</th>
<th>1.9</th>
<th>Negligible Risk</th>
</tr>
</thead>
</table>

Country: South Korea
Subindustry: Non-Residential Construction
Ticker: 047040 (KRX)
MCap (USD mn): 2,070* as of 31 December 2018

Key insights

- Daewoo E&C is a skilled hydropower dam builder with experience in the high-demand region of South East Asia.
- The firm has several QMS certifications, such as ISO 9001, the Korea Electric Power Industry Code and the American Society of Mechanical Engineers.
- It is involved in strategic partnerships with key players in the South East Asian hydroelectric power market.

Overview

Daewoo E&C is involved in hydropower dam projects through its Civil Works business and is well positioned to respond to the rising demand for dam projects in South East Asia.

The company entered Laos through its involvement in the Howeiho Hydropower Project in collaboration with Électricité du Laos and Loxely PLC, a Thai development firm in 1994. In June 2017, Daewoo signed a Memorandum of Understanding with Lotte Engineering & Construction, the KDB, and Korea Trade & Insurance Corporation and Petroleum Trading Lao Public Company. This strategic partnership enables Daewoo to pursue major developments, such as the Mekong River Hydro Power Project.

Daewoo’s commitment to quality and safety has been supported by several steps towards mitigating related risks associated with its operations. Daewoo maintains several QMS certifications, including ISO 9001, the Korea Electric Power Industry Code and the American Society of Mechanical Engineers. Its corporate-wide quality monitoring includes on-site quality performance indicators and supplier quality assessments. The company also developed a shared-growth model with 4S Structure Safety Cooperative, combining its own technological expertise to that of other companies in the field of structural safety to manage standards from design to construction and maintenance.

Outlook – improving the quality of hydropower dam construction

While human error remains a concern for dam builders, improved management of structure quality can help prevent dam failures. Both QMS certifications and product safety programmes reduce the risk of accidents and reinforce the position of hydropower dams as leaders of renewable energy. With its high QMS standards, experience and partnerships in South East Asia, Daewoo appears well positioned to lead its peers in improving product governance practices.
Insuring a Warmer Planet

Two fronts of exposure to climate change

Property and casualty (P&C) insurers face two key points of exposure to climate risks in 2019 and beyond: (1) escalating cost of payouts for climate change-driven catastrophes and (2) carbon-related risks from underwriting and investment activities. According to a report by Aon Benfield, 2017 was the costliest year on record for weather related damages, with USD 344bn in total economic losses globally. In 2017, insured losses reached USD 132bn, three times the 2000-2016 average. As illustrated by the figure below, weather events are costly and volatile. While these risks are mounting for insurers globally, concerns are heightened in the Asia-Pacific region, where weather disasters take a large social and economic toll.

P&C insurers in the Asia-Pacific markets are entering uncharted waters. Not only is this region the most disaster-prone region in the world, it is also projected to face multiple and compounded risks from climate change. Between 2000 and 2017, one-third of the USD 2.8tn in global economic losses due to weather disasters occurred in Asia-Pacific countries. Steady economic growth and the increasing penetration of insurance in the region confirm the exposure of Asia-Pacific P&C insurers, who can expect rising payout claims due to damages from extreme weather in the coming years.

In addition to the vulnerability of the Asia-Pacific region to weather events, other catalysts for climate action in 2019 include political debates and public concern as well as increasing investor interest and activism. This year, an initiative to develop a Sustainable Finance Roadmap for Australia and New Zealand will kick off with support from 300 banking, insurance and investment institutions.

Total global economic and insured losses from weather events, 2000-2017

Source: Aon Benfield, Sustainalytics
A watershed moment for climate action in APAC

On top of the physical risks, P&C insurers’ underwriting and investment activities expose them to indirect carbon risks. By underwriting coverage for fossil fuel projects, the insurance industry enables projects that worsen climate change, which increases the frequency and severity of extreme weather. As large investors, insurance firms can direct funding to companies and assets geared towards the transition to a low-carbon economy. However, a 2018 report by the Asset Owners Disclosure Project found that only 1% of assets invested by 80 major global insurers were allocated to low-carbon investments.

Some European insurers, such as AXA, Allianz, Zurich and Generali, have announced restrictions on insuring and investing in coal, while the Asia-Pacific market has, until recently, put the issue on the backburner. QBE, which posted USD 1.2bn in losses for FY2017 due to claims resulting from natural catastrophes, was confronted at its 2018 AGM with a shareholder resolution on climate risk disclosure and was criticized for underwriting and investing in coal.

The table below summarizes our assessment of a sample of Asia-Pacific P&C insurers on the ESG Integration MEI and a selection of metrics that reflect their preparedness to manage physical, underwriting and investment risks related to climate change. The tight spread of unmanaged risk scores (2.8 to 4.7) on this MEI suggests some level of homogeneity in the overall performance of Asia-Pacific insurers, but a closer look at other metrics reveals substantial differentials.

Suncorp leads the pack with the lowest level of unmanaged risk on the MEI and the highest scores in ESG Integration Management (56.2) and Responsible Asset Management (100), and it has steered clear of fossil fuel controversies. However, Suncorp lags its Australian peers QBE and Insurance Australia Group on our assessment of Underwriting Standards, scoring 0 on G.1.3.9. Looking at the other countries represented in this sample, the featured South Korean and Chinese firms trail the market across most of these indicators, in part reflecting cultural differences in ESG management. Japanese insurers MS&AD, Sompo and Tokio exhibit strong performance on our Physical Climate Risk Management indicator – a positive sign considering that Japan is prone to natural disasters.

### Assessing ESG integration and selected key indicators of climate change risk management

<table>
<thead>
<tr>
<th>Company</th>
<th>Country</th>
<th>ESG Integration Unmanaged Risk Score</th>
<th>ESG Integration Risk Category</th>
<th>ESG Integration Management Score</th>
<th>E.1.6.2 Physical Climate Risk Management Score</th>
<th>G.1.3.9 Underwriting Standards Score</th>
<th>E.3.1.11 Responsible Asset Management Score</th>
<th>Controversies related to fossil fuel involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suncorp Group Ltd</td>
<td>Australia</td>
<td>2.8</td>
<td>Low Risk</td>
<td>56.2</td>
<td>66</td>
<td>0</td>
<td>100</td>
<td>Category 0</td>
</tr>
<tr>
<td>MS&amp;AD Insurance Group Holdings Inc</td>
<td>Japan</td>
<td>3.7</td>
<td>Low Risk</td>
<td>41.2</td>
<td>100</td>
<td>0</td>
<td>40</td>
<td>Category 1</td>
</tr>
<tr>
<td>Sompo Holdings Inc</td>
<td>Japan</td>
<td>3.8</td>
<td>Low Risk</td>
<td>39.5</td>
<td>66</td>
<td>0</td>
<td>40</td>
<td>Category 1</td>
</tr>
<tr>
<td>QBE Insurance Group Ltd</td>
<td>Australia</td>
<td>4.0</td>
<td>Medium Risk</td>
<td>41.9</td>
<td>66</td>
<td>50</td>
<td>100</td>
<td>Category 2</td>
</tr>
<tr>
<td>Tokio Marine Holdings Inc</td>
<td>Japan</td>
<td>4.0</td>
<td>Medium Risk</td>
<td>38.8</td>
<td>66</td>
<td>0</td>
<td>40</td>
<td>Category 1</td>
</tr>
<tr>
<td>PICC Property and Casualty Company Ltd</td>
<td>China</td>
<td>4.2</td>
<td>Medium Risk</td>
<td>17.3</td>
<td>0</td>
<td>0</td>
<td>40</td>
<td>Category 0</td>
</tr>
<tr>
<td>Insurance Australia Group Ltd</td>
<td>Australia</td>
<td>4.3</td>
<td>Medium Risk</td>
<td>31.8</td>
<td>66</td>
<td>50</td>
<td>0</td>
<td>Category 0</td>
</tr>
<tr>
<td>DB Insurance Co Ltd</td>
<td>South Korea</td>
<td>4.7</td>
<td>Medium Risk</td>
<td>16.9</td>
<td>66</td>
<td>0</td>
<td>0</td>
<td>Category 1</td>
</tr>
</tbody>
</table>

*As of January 2019

**Source:** Sustainalytics
Suncorp Group Ltd

Suncorp shows leadership in climate action and responsible investments

Key insights

- About **87% of Suncorp’s AUM are covered by its responsible investment policy**, and AUD 36mn were in low-carbon investments.
- Natural disasters impacted Suncorp’s financial performance in the past, but the company seems to have improved its models.
- In 2019, Suncorp will conduct **climate scenario analysis** and integrate the results in its business strategy and planning.

Overview

Suncorp provides a diverse range of general insurance products and banking services to the retail, corporate and commercial sectors in Australia and New Zealand. A surge in natural disaster claims in 2017 contributed to a 15% drop in the firm’s half year 2018 profit, prompting it to raise premiums. Over the past 10 years, natural disasters cost Suncorp AUD 2bn more than budgeted. The firm may have learned from this and improved its forecasting models, as claims in 2018 were slightly below provisions. Suncorp also increased its natural hazards allowance by 4% to AUD 720mn in anticipation of higher claims in 2019.

In August 2017, Suncorp adopted a responsible investment policy, which also applies to its external investment managers. The policy includes commitments to increase climate-related investments, such as green bonds, renewable energy infrastructure and climate change adaptation and mitigation innovations. The policy also introduces a shadow carbon price to help manage transition risks. The company reports that 87% of its AUM are covered by the policy, and 89% are managed by signatories to the UNPRI. In addition, Suncorp holds AUD 36mn in low-carbon investments – a very limited amount currently, but which may be the opening of a floodgate of further green investments, once current ones pay off and the market grows.

In March 2018, the firm published a climate change action plan, detailing commitments and action statements until 2020 around climate governance, resilience, performance monitoring and opportunities.

Outlook – rolling out climate action and insights

Suncorp’s reported key action items for 2019 and 2020 include identifying and assessing risks and opportunities linked climate change, carbon transition issues and physical climate impacts. It will begin climate scenario modelling to inform its business strategy and financial planning, and track its performance against TCFD and other metrics. These are important steps for the organization, providing relevant insights to management and clarity to investors.
The Big Tech Gender Gap

Gender equity and corporate governance

We foresee the financial materiality of gender issues related to working conditions and leadership diversity reaching new heights in 2019, especially in the tech world. A harbinger of the growing demand for change occurred in November 2018, when 20,000 Google employees, including its CFO, Ruth Porat, staged protests across North America, Europe and Asia-Pacific regions after the New York Times reported that the firm failed to address sexual harassment claims and offered a USD 90mn exit package to a former senior vice president who had been accused of sexual harassment. 78

Over the course of 2018, Sustainalytics tracked 21 discrimination and harassment incidents at software and services companies, up from nine in 2017. This increase (133%) is higher than that of all but two Sustainalytics peer groups. 79 Among the 16 software and services firms that experienced such incidents are major industry players Alphabet (Google), Facebook, Microsoft, Uber, Tata, Square, Alibaba and Baidu. 80

While the direct risks of discriminatory practices include reputational damage, litigation and fines, structural risks include difficulties attracting and retaining a diversity of talent at various levels of an organization. One indication of the diversity gap in the software and services industry is the absence of women in leadership roles. As shown in the graph below, data compiled by the World Economic Forum (WEF) suggests that firms in this industry tend to be underachievers in hiring women for senior positions. In 2017, women accounted for only 18% of the leadership positions in software and IT services companies. 81

Evolution of hiring of women in leadership roles by industry, 2007-2017*

*Leadership roles include directors and top managers

Source: World Economic Forum, LinkedIn, Sustainalytics 82
Software, services, discrimination and governance

The #MeToo movement has amplified calls for improved gender equity practices across all segments of the global economy. Still, many tech firms appear particularly prone to risk. In March 2018, for example, Uber agreed to pay USD 10mn to settle a class-action lawsuit that claimed the company engaged in discriminatory practices against 400 of its female and non-white software engineers, paying them less and offering them fewer promotional opportunities compared to their white male counterparts. The November final settlement included commitments to diversity-focused changes in business practices, new diversity and inclusion initiatives, a revamped pay structure, modified compensation adjustments and management refreshment.

Beyond the immediate financial effects, discriminatory practices can stifle a firm’s ability to attract and retain talent and may perpetuate the low participation of underrepresented groups. A decade of data analyzed by the WEF found a correlation between the level of women represented in leadership positions and the hiring of future female leaders. Benefits of leadership diversity include supporting a more trusting work culture and spurring innovation.

Supporting the view of women in leadership roles as a driver of value creation, studies have found correlations to corporate financial performance. Looking at 3,400 global companies over 10 years, Credit Suisse found that firms where women comprise at least 15% of senior management had more than 50% higher profitability than those where women’s representation was less than 10%.

The table below summarizes our assessment of big players in the Internet Software and Services subindustry. We find that Baidu and Alibaba underperform their North American and European peers on board diversity and risk oversight, which could present cultural challenges if they decide to expand into these markets. While Twitter is the top performer on board diversity, eBay is a close second on this indicator. Moreover, eBay is the only firm in this selection that managed to stave off public discrimination and harassment controversies during our study period and its overall unmanaged ESG and Corporate Governance risk scores are significantly lower than those of its peers.

A closer look at a selection of companies in the Internet Software and Services subindustry

<table>
<thead>
<tr>
<th>Company</th>
<th>Country</th>
<th>Overall Unmanaged Risk Score</th>
<th>Overall Risk Category</th>
<th>Corporate Governance Unmanaged Risk Score</th>
<th>Corporate Governance Risk Category</th>
<th>CG.2.9 Board Diversity Score</th>
<th>CG.2.8 Risk Oversight Score</th>
<th>Number of discrimination and harassment incidents*</th>
</tr>
</thead>
<tbody>
<tr>
<td>eBay Inc</td>
<td>US</td>
<td>18.8</td>
<td>Low Risk</td>
<td>4.1</td>
<td>Medium Risk</td>
<td>70</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>Twitter Inc</td>
<td>US</td>
<td>24.5</td>
<td>Medium Risk</td>
<td>5.4</td>
<td>Medium Risk</td>
<td>80</td>
<td>50</td>
<td>2</td>
</tr>
<tr>
<td>Spotify Technology SA</td>
<td>Luxembourg</td>
<td>29.3</td>
<td>Medium Risk</td>
<td>5.6</td>
<td>Medium Risk</td>
<td>60</td>
<td>50</td>
<td>1</td>
</tr>
<tr>
<td>Baidu Inc</td>
<td>China</td>
<td>29.7</td>
<td>Medium Risk</td>
<td>5.7</td>
<td>Medium Risk</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Alphabet Inc</td>
<td>US</td>
<td>25.7</td>
<td>Medium Risk</td>
<td>5.8</td>
<td>Medium Risk</td>
<td>40</td>
<td>50</td>
<td>8</td>
</tr>
<tr>
<td>Alibaba Group Holding Ltd</td>
<td>China</td>
<td>24.7</td>
<td>Medium Risk</td>
<td>6.8</td>
<td>High Risk</td>
<td>20</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Facebook Inc</td>
<td>US</td>
<td>31.1</td>
<td>High Risk</td>
<td>7.2</td>
<td>High Risk</td>
<td>60</td>
<td>40</td>
<td>4</td>
</tr>
</tbody>
</table>


Source: Sustainalytics
eBay Inc
A software and services leader in corporate governance gender diversity

Overall Unmanaged Risk Score
18.8
Low Risk

Rank, Overall Unmanaged Risk Score
2 out of 154
2nd Percentile

Unmanaged Risk Score, Corporate Governance
4.1
Medium Risk

Key insights

- Five of eBay’s 12 senior executive team members (41.7%) are women, as are four of its 12 board directors (30.7%).
- The company takes a proactive stance on gender pay equity and has managed to avoid public discrimination and harassment controversies.
- eBay recently ended its mandatory arbitration policy in cases of sexual harassment, demonstrating its ability to lead the subindustry by example.

Overview

By the end of 2018, eBay facilitated around 4% of the USD 2.6tn global online commerce market. Moving forward, its strategic priorities include revitalizing its marketplace platform, improving the seller and buyer experience, utilizing AI for listing searches and improving its mobile commerce capabilities.

The firm’s leadership diversity story was defined early on with Meg Whitman becoming President and CEO in February 1998. Twenty years later, eBay’s executive leadership team includes five women and its board includes four women. The firm’s 2017 reporting indicates a 40-60 women-to-men ratio across its total workforce and a 33-67 ratio for leadership roles over the same period.

eBay has thus far been spared of public employee discrimination and harassment incidents. In 2016, the company’s public statement on gender pay equity included a commitment to address any gaps it may find in its global operations. A key strength is the company’s consistency towards women’s career development throughout its corporate history. This strategy has arguably supported eBay’s gender-related risks prevention thus far.

Outlook – an auspicious track record on gender equity

The company’s reputation for putting diversity high on its corporate agenda from the outset has helped position it as a leader in ecommerce innovation and ESG management. Whether the firm’s propensity towards diversity has been a driver of innovation or vice-versa, eBay continues to be well-positioned to lead the Internet Software and Services subindustry on gender equity issues. Its proactive approach to prioritizing gender issues has prepared eBay for tightening regulations on board diversity. California – where eBay’s headquarters are located – introduced a quota system in 2019, with a 2021 proviso targeting a quota of three female directors. We consider eBay to be well prepared.
Privacy as a Product

Data privacy as a commercial necessity

Measures to safeguard user data have long since evolved from a nice-to-have to a fundamental corporate necessity, particularly for companies that rely on monetizing large volumes of personally identifiable information (PII). Indeed, the overriding importance of protecting data assets is nothing new, and the recent spate of high-profile data breaches, together with the overall rising costs associated with these breaches (see figure below), has only reinforced this message for companies and investors.

What is changing, however, is the reframing of data privacy and security as a one-dimensional risk factor to a source of competitive advantage. In 2019, we expect to see a growing number of technology companies articulate how data privacy is embedded in their value proposition.

Multiple drivers

The catalyst for this shift is multifold. While the Facebook-Cambridge Analytica controversy took place almost a year ago, its effect, in terms of how the market thinks about data privacy and security, cannot be overstated. The scandal, which (temporarily) cost Facebook over USD 100bn in market capitalization, crystallized the financial salience of data privacy and security and led many technology companies to strategically rethink their position on the issue.

The entry into force of the European General Data Protection Regulation (GDPR) in May 2018 also motivated companies to consider their data privacy and security systems: companies can face fines of up to 4% of their global turnover in the event of non-compliance.

Average cost of a data breach, 2014-2018

![Average cost of a data breach, 2014-2018](image-url)
Privacy as a driver of competitive advantage

We believe companies in the technology hardware segment are well-positioned to frame data privacy as an opportunity. One reason is that hardware companies, unlike software firms, can offer privacy by design across the product engineering process. As a result, technology hardware companies that have a direct commercial relationship with consumers are likely to be increasingly differentiated based on the privacy protections they can provide.

Another factor is data control. According to a recent study, starting in 2019, more data will be stored in enterprise data centres and servers than in local storage, as a result of the accelerating adoption of systems such as the Internet of Things. This means that companies that provide online storage solutions, especially those in the technology hardware space, will become stewards of the majority of data in existence. In our view, this will raise the stakes for hardware firms and encourage a wave of product innovation around data protection.

Security selection

Sustainalytics’ Data Privacy and Security MEI shows how companies are broadly positioned on data privacy and security issues, including reliance on PII and the extent to which companies are managing their risk exposure through relevant programmes and policies.

The chart below shows the unmanaged risk score and the management score on this MEI for a selection of high-profile technology hardware firms. Apple leads on both measures: while the company is highly exposed to data breach risk, it effectively manages this exposure through a variety of privacy techniques, policies and guidelines, resulting in a relatively low unmanaged risk score. As a result, we believe that Apple is positioned to benefit as the market moves to differentiate technology hardware firms based on their data privacy and security performance, a proposition we explore below.

Data privacy and security scores, selected firms

Source: Sustainalytics
Apple Inc
On the vanguard of privacy as an opportunity

Key insights
- Apple has increasingly positioned itself as a champion of user privacy and was one of the first companies to declare privacy as a human right.
- The company has integrated differential privacy, intelligent tracking prevention and chip-based security into its product offerings.
- Privacy remains a deeply challenging and complex issue to manage, even for companies like Apple that are strong performers on the issue.

Overview
Apple has positioned itself as a champion of user privacy. It was one of the first technology companies to recognize privacy as a human right. It has generally backed up these commitments with substantive actions, suggesting Apple’s privacy advocacy is embedded in its product development strategy.105

One way Apple has made this connection is through differential privacy, which allows it to extract valuable user insights but masking any individual user.106 In addition, in its T2 Security Chip, Apple has built a dedicated security enclave where sensitive data, such as fingerprints, are processed.107 These offerings are likely to be key as the company leverages sensitive real time data, through the Apple Watch, iPhone and Siri, to differentiate its service offerings.

However, privacy and data security risk management are increasingly unpredictable, and Apple has faced some controversies related to the issue. There are concerns with the company’s China strategy, especially its decision to store Chinese user data locally with a partner that leases data centres from a state-owned telecom.

Managing privacy risks is a challenge even for companies that integrate it as a key priority. There is no way to anticipate when a breach may occur. However, having systems in place, both on the hardware and software side, can be instrumental in mitigating long-term risks. Apple has increasingly demonstrated that it is willing to prioritize privacy management to help protect user privacy.

Outlook – setting the standard for privacy as a product
We see long-term upside for Apple from the company’s privacy-first approach. While the company is exposed to data privacy and security risk, we expect management to successfully navigate the demands of data monetization while also preserving user trust in its products and services.
Coating the Future

Specialty chemical producers banking on green coatings

As their name suggests, specialty chemicals are specific chemical products that are widely used across sectors, including the automotive, food, cosmetics and manufacturing industries. Examples of specialty chemicals products include adhesives, agrichemicals, cleaning materials, food additives, industrial gases, lubricants and pesticides. The total revenue of specialty chemicals products is expected to reach USD 1.79tn by 2025, up from 1.16tn in 2016. The market is being driven by multiple factors, including the function-specific advantage that speciality chemicals hold over commodity chemicals.

Pivot to sustainability

Behind the dynamic growth of the speciality chemicals market lies an equally compelling market trend: a broad-based shift to incorporating sustainability concepts into product design and development. This trend is especially evident in the coatings and paintings segment of the broader specialty chemicals market. Green coatings have a smaller carbon footprint than conventional coating products, reduced amounts of volatile organic compound (VOC) that are toxic to human health and a generally superior environmental profile. As shown below, the total revenue from global green coatings products is projected to hit USD 119bn by 2023, up from USD 80bn in 2016.

The green coatings market is being driven by growing consumer awareness about the environmental impacts of chemicals production, tightening environmental regulations, such as the EU’s REACH regulation, and the increasing use of green building standards, such as Leadership in Energy and Environmental Design (LEED).

Forecast for the global green coatings market

![Chart showing forecast for the global green coatings market]

Source: Allied Market Research, Sustainalytics

The global green coatings market is forecasted to reach USD 119bn by 2023.
Identifying leaders

The speciality chemicals industry as a whole is acutely aware of the opportunity posed by the expanding green coatings market, as evidenced by greater R&D initiatives, improving green technologies and a broadening product line-up. While some companies are taking more substantive steps than others, the subindustry as a whole is strategically aware of the segment’s broad pivot to sustainability.

However, not all speciality chemicals firms are equally well-prepared to manage this transition. Challenges include using new types of input materials, assessing and managing impacts during product use, disposal and recycling, and implementing systems to measure toxicity.

E&S Impact of Products and Services

In the ESG Risk Ratings framework, the MEI of E&S Impact of Products and Services captures how companies are broadly positioned to deal with many of these risk factors. The chart below looks at companies’ unmanaged risk score and management score on the E&S Impact of Products and Services MEI. While the unmanaged risk score represents Sustainalytics’ all-in view about how companies are positioned on this issue, the management score is exposure agnostic and is driven by company performance on a range of underlying management indicators, including green procurement policy and hazardous products.

The eight companies shown in the chart below are highly active in the coatings segment. Among these firms, our analysis suggests that Akzo Nobel NV is best positioned to manage the environmental and social impacts of its products and compete over the long run in the growing green coatings market. As further discussed in the profile on the following page, Akzo Nobel NV has implemented extensive programmes to manage the health and environmental risks associated with its products.

E&S Impact of Products and Services Scores, selected firms

Source: Sustainalytics
Akzo Nobel NV

Capitalizing on the broad-based pivot to green coating and paint products

Key insights

- Akzo Nobel’s green coating products include lead-free, low VOC and energy-efficient paints and powder coatings.
- The company’s substance management programme systematically identifies products that contain substances with clear phase-out dates.
- Akzo Nobel’s target to have its eco-premium solutions constitute 20% of total company revenue by 2020 was met three years ahead of schedule in 2017.

Overview

Akzo Nobel NV (Akzo Nobel) is a Dutch multinational paints and coatings company, operating in two main business segments: decorative paints and performance coatings. Akzo Nobel derives a significant percentage of its revenues (42%) from Europe and North America, where relatively strict environmental regulations are helping to drive demand for sustainable products.

The company offers a number of green coating applications, including lead-free, low VOC and energy-efficient paints and powder coatings. These products typically offer identical performance to that of conventional coatings but with reduced environmental impacts, such as fewer VOCs and less wastewater.

Akzo Nobel has historically taken important steps to stay ahead of regulations concerning hazardous products. The company uses a systematic procedure to identify, review and manage hazardous chemicals across its product portfolio.

In recent years, Akzo Nobel has continued to develop a product portfolio that promotes the use of safer and more sustainable products. The company has created an “eco-premium” label to distinguish the products within its portfolio that exceed standard market offerings across multiple parameters, including energy efficiency, safety risks and toxicity.

Outlook – green revenues on the horizon

In 2017, Akzo Nobel met its target to increase the revenue from sustainable products to 20% of total company revenue by 2020, an indication of the growing importance of sustainable offerings at the firm. We see the company as an attractive player in the expanding green coatings market and we expect Akzo Nobel to continue investing in increasingly environmentally friendly paintings and coatings solutions.
The People Behind the Drugs

Human capital management in pharma

The pharmaceutical industry plays a vital role in developing medications and vaccines that treat diseases and increase quality of life. The industry’s main contribution is in highly innovative technological advancements and discoveries, particularly in developing lifesaving drugs.

Global pharmaceutical revenues reached USD 1,143bn in 2017, up from USD 390bn in 2001.\(^\text{112}\) As shown in the figure below, revenue growth in the pharmaceutical industry has outpaced global economic growth in recent years, increasing at an average rate of 7.0% per year compared to 5.8% for global nominal GDP. Demand for pharmaceutical products, including drugs and medications, is being driven by a combination of many factors, including ageing populations, increasing environmental pollution and shifting regulatory regimes.

However, the industry is certainly not without its challenges, and many of the most significant risks that we see for executive teams and investors in the pharma industry in 2019 are closely tied to ESG factors. Of particular concern is the issue of human capital management, which consists of a set of practices to recruit, manage, develop, optimize and ultimately retain a firm’s employees.

Nature of the challenge

The nature of the pharma industry’s exposure to the issue is that, like other knowledge-based industries, it is heavily reliant on skilled workers to develop products, ensure regulatory compliance and commercialize new strategies. While there has always been a premium attached to superior employee management in this industry, the relative importance is increasing due to rising competition from generics, the ever-increasing cost of bringing drugs to market and mounting insecurity around drug pricing and patent power.

Global pharma revenues vs global nominal GDP

![Graph showing the growth of global pharma revenues compared to global nominal GDP from 2001 to 2017. The graph indicates that pharma revenues are growing at an average rate of 7.0% per year, compared to 5.8% for global GDP.](image)

Source: Statista,\(^\text{113}\) The World Bank,\(^\text{114}\) Sustainalytics

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The importance of effective human capital management is growing.
The nebulous role of culture

In addition to these considerations, the relative importance of effective human capital management is increasing due to the industry trend towards consolidation. Pharma has seen a pronounced trend towards consolidation in recent years, and this trend is expected to further accelerate in 2019, with a higher proportion of cross-border acquisitions. Healthcare accounted for 11% of all worldwide M&A in the first nine months of 2018.115

Cultural cohesion is a critical success factor in M&A deals. Given that human capital management is a key component of firm culture, we anticipate M&A deals between pharma companies with vastly different stances on human capital may struggle, particularly in the early stages. In a recent study of 231 M&A deals, Sustainalytics found that deals between firms with comparable ESG performance, including human capital performance, edged ESG non-compatible deals by an average of 21% on a five-year cumulative return basis.116

Assessing human capital management

The MEI of Human Capital captures companies’ exposure to, and management of, human capital-related risks. Our evaluation offers a broad assessment that includes both conventional and unconventional value drivers. Among other factors, our approach scores companies on their employee turnover rate, the strength of their human capital development programmes, their involvement in labour relations incidents and the extent to which they rely on highly skilled workers to drive innovation and product commercialization.

The chart below looks at unmanaged risk and management scores on the Human Capital MEI for a selection of eight high-profile pharma companies. Among these firms, our analysis suggests that Roche Holding AG is best positioned. As further discussed in the company profile on the following page, the company benefits from comprehensive human capital management programming, including best-in-class diversity and anti-discrimination policies.

Human capital scores, selected firms
Roche Holding AG
Innovative solutions in drug discovery and talent management

Key insights
- Roche has implemented leading management initiatives across a broad spectrum of human capital issues, including diversity and talent retention.
- In 2017, women made up 28% of key leadership positions at Roche, and the company is targeting 29% by 2020.
- Roche supports learning and leadership through a suite of programmes and initiatives for executive, senior, and middle managers.

Overview
Roche Holding AG (Roche) is a multinational biopharma and diagnostics company with several innovative cancer drugs. The company employs 25% (22,747) of its employees in innovation and spent 19.5% of its FY2017 revenue on R&D. Roche has a history of both vertical and horizontal acquisitions.

Roche identifies employee engagement and talent retention as one of six first-tier material goals, and has implemented several leading management initiatives in this area. In addition to comprehensive policies on diversity, discrimination, and freedom of association, Roche was one of the first European companies to disclose quantitative targets on diversity and inclusion.

Roche has endorsed the United Nations’ Sustainable Development Goals. As part of its integration strategy, the company recently raised its target for women in key leadership positions: the proportion of women in these positions reached 28% in 2017 and the company is now targeting 29% by 2020.

Roche’s commitment to learning and leadership include a suite of leadership programmes for executive, senior and middle managers. Kinesis, a recently launched executive leadership programme, focuses on the agility needed to adapt to changing landscapes. NJIA, an intensive one-week training for mid-level managers, brings teams to rural Tanzania to work with local counterparts on results-oriented projects like increasing access to innovative treatments.

Outlook – strong management of human capital risks
Roche appears well-prepared to manage human capital-related issues in 2019. As evidenced by the company’s low unmanaged risk score, and high management score on the Human Capital MEI, we consider the company to be at low risk of experiencing material human capital-related issues in 2019.
Update on 10 for 2018

Retrospective analysis

Continuing the tradition

We continue our tradition of looking back at the companies featured in the previous year’s 10 for report. This year’s retrospective is unique in the sense that it straddles the launch of the ESG Risk Ratings in September 2018.

Bridging the ratings, old and new

To bridge our analysis from the previous ESG rating to our new flagship methodology, we mapped each company and ESG theme featured in 10 for 2018 to the corresponding MEI and category of unmanaged risk. As shown in the table below, we note whether last year’s outlook on each company’s ESG risk management capabilities aligns with its current category of unmanaged risk. As a point of reference, we also tabulate companies’ total equity return in 2018.

Summary of 10 for 2018

<table>
<thead>
<tr>
<th>10 for 2018 Company</th>
<th>Subindustry</th>
<th>Market</th>
<th>MEI</th>
<th>ESG outlook, Jan 2018</th>
<th>MEI unmanaged risk category, Jan 2019</th>
<th>Agreement between outlook and MEI unmanaged risk?</th>
<th>Total return, 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSMC</td>
<td>Semiconductor Design and Manufacturing</td>
<td>Taiwan</td>
<td>Carbon - Own Operations</td>
<td>Up</td>
<td>Low Risk</td>
<td>✓</td>
<td>-3%</td>
</tr>
<tr>
<td>Royal Dutch Shell PLC</td>
<td>Integrated Oil &amp; Gas</td>
<td>Netherlands</td>
<td>Carbon - Products and Services</td>
<td>Up</td>
<td>Medium Risk</td>
<td>-</td>
<td>-8%</td>
</tr>
<tr>
<td>Stockland Corp</td>
<td>REITs</td>
<td>Australia</td>
<td>ESG Integration - Financials</td>
<td>Up</td>
<td>Low Risk</td>
<td>✓</td>
<td>-21%</td>
</tr>
<tr>
<td>Antofagasta PLC</td>
<td>Diversified Metals Mining</td>
<td>UK</td>
<td>Resource Use</td>
<td>Up</td>
<td>Medium Risk</td>
<td>-</td>
<td>-22%</td>
</tr>
<tr>
<td>AXA SA</td>
<td>Diversified Insurance Services</td>
<td>France</td>
<td>Data Privacy and Security</td>
<td>Up</td>
<td>Low Risk</td>
<td>✓</td>
<td>-24%</td>
</tr>
<tr>
<td>H&amp;M</td>
<td>Retail Apparel</td>
<td>Sweden</td>
<td>Human Rights - Supply Chain</td>
<td>Up</td>
<td>Low Risk</td>
<td>✓</td>
<td>-25%</td>
</tr>
<tr>
<td>Embraer SA</td>
<td>Aerospace and Defence</td>
<td>Brazil</td>
<td>Bribery and Corruption</td>
<td>Down</td>
<td>Low Risk</td>
<td>✗</td>
<td>6%</td>
</tr>
<tr>
<td>Coca-Cola Co</td>
<td>Soft Drinks</td>
<td>US</td>
<td>E&amp;S Impact of Products and Services</td>
<td>Down</td>
<td>Low Risk</td>
<td>✗</td>
<td>4%</td>
</tr>
<tr>
<td>Alphabet Inc</td>
<td>Internet Software and Services</td>
<td>US</td>
<td>Business Ethics</td>
<td>Down</td>
<td>High Risk</td>
<td>✓</td>
<td>-3%</td>
</tr>
<tr>
<td>The Chemours Co</td>
<td>Diversified Chemicals</td>
<td>US</td>
<td>Emissions, Effluents and Waste</td>
<td>Down</td>
<td>Severe Risk</td>
<td>✓</td>
<td>-45%</td>
</tr>
</tbody>
</table>

*We denote agreement (✓) when our ESG outlook on company was positive and its MEI unmanaged risk is low-negligible, or when our ESG outlook on company was negative and its MEI unmanaged risk is high-severe; neutral agreement (–) when a company’s MEI unmanaged risk is medium; and disagreement (✗) otherwise.

Source: Sustainalytics, Bloomberg

Most positive outlook firms have low unmanaged risk

While our ESG outlooks were developed outside the ESG Risk Ratings framework, there is generally strong agreement between our positive outlooks and
companies’ current MEI performance. Of the six companies that received a positive outlook back in January of last year, four – TSMC, Stockland, AXA and H&M – are currently assessed as having a low level of unmanaged risk on the MEI in question (i.e. absolute unmanaged risk scores between 2-4). The other two, Royal Dutch Shell and Antofagasta, fall into the medium risk category.

Carried over to the ESG Risk Ratings

TSMC serves as an illustrative example. In January 2018, we argued the company was well-positioned to compete in Taiwan’s semiconductor industry and manage the challenges associated with energy supply shortages and tightening emissions regulations. This assessment has largely carried over to the ESG Risk Ratings: the company faces low unmanaged risk on the MEI of Carbon – Own Operation and is a top performer on several underlying management indicators, including GHG reduction programmes.

We expected some companies to struggle

Negative outlooks

We gave a negative outlook to four companies profiled in 10 for 2018: Embraer, Coca-Cola, Alphabet and Chemours Co. These outlooks were based on our view that the companies would struggle over the course of 2018 to manage the MEI in question (for instance, Bribery and Corruption in the case of Embraer).

Two of these firms, Alphabet and Chemours Co, are currently assessed as having high or severe levels of unmanaged risk on their respective MEIs. In the cases of Embraer and Coca-Cola, we took a negative outlook but these firms are currently assessed as having low levels of unmanaged risk on their respective MEIs.

Coca-Cola continues to face risk

This disagreement is primarily one of methodology. For instance, in January 2018 we cautioned investors that Coca-Cola was likely to face increased scrutiny over the sugar content of its beverages and highlighted the company’s poor performance on a product health risk management indicator. In fact, not much has changed: the company has strong but not exceptional performance on the various management indicators that fall under the E&S Impact of Products and Services MEI and, like other soft drink companies, it continues to face long-term risk from regulations that seek to reduce the sugar content of beverages. The company’s low level of unmanaged risk on the MEI reflects a much broader assessment than that offered in our outlook; while our outlook focused on sugar-related product risks, our MEI analysis considers a wider range of factors, and includes the concepts of exposure, manageable risk factors and other new methodological components introduced in the ESG Risk Ratings.

Financial performance

With global equities returning -12% in 2018 as proxied by the FTSE All-World index, four of our six positive outlook firms trailed the broader equity market. On the other side of the ledger, three of our four negative outlook firms outperformed the market (Embraer, Coca-Cola and Alphabet). We include these numbers largely for illustrative purposes, as further analysis is required to determine the extent to which these returns may have been influenced by companies’ MEI performance.
Conclusion

Risk and opportunity

This year’s 10 for report, the fifth in the series, analyzes 10 material ESG issues that could pose both financial and reputational risks for investors in 2019. The 10 issues fall under four themes: (1) the human side of commodities, (2) front lines of the transition economy, (3) high stakes in the digital world and (4) chemistry of the future. This year’s report is the first to take advantage of Sustainalytics’ ESG Risk Ratings, which were launched in the third quarter of 2018. Our new flagship ratings product offers several innovations in ESG research and analysis, including the concept of unmanaged risk. We look forward to harnessing the ESG Risk Ratings in further iterations of our 10 for series.

The vignettes identify risk, but also opportunity

While the subtitle of this year’s report, systemic risks loom large, may suggest a negative outlook, risk and opportunity are in fact two sides of the same coin, an insight that we frequently reference and draw upon in our thematic research papers at Sustainalytics. Thus while the 10 vignettes presented in this report naturally call attention to risk factors for investors to consider in the year ahead, they also carefully sketch upside possibilities. For instance, all of the chapters profile a company that is particularly well-positioned relative to its subindustry peers on the risks we identify and analyze.

Long-term trends

The four overarching themes we pick up in this report are long term in nature. While they may generate specific investment risks or opportunities in 2019, they transcend a one-year investment horizon. The global equity markets took a battering in 2018, but they are up 5.2% so far into 2019, as proxied by the FTSE All-World index. Irrespective of whether this initial enthusiasm continues into 2019, the trends we decompose in this report are likely to remain.

Continuing the series

Our four previous 10 for reports covered a wide range of topics – from quantitative easing policies and slumping oil prices (10 for 2015) to the financial upshots of the Paris Agreement (10 for 2016), uncertainties associated with dramatic advances in technology and shifting geopolitical conditions (10 for 2017) and corporate risks linked to water management, climate change, consumer protection and stakeholder governance (10 for 2018). With 10 for 2019, we underscore the importance of addressing systemic ESG risks in long-term investment decision making.

We hope that the readers of 10 for 2019 find value in this year’s instalment, and we look forward to continuing the series again next year.
Appendix: Unmanaged Risk

A brief overview of the concept of unmanaged risk will be informative to readers who are new to the Sustainalytics ESG Ratings methodology. The ESG Risk Ratings bring together the dimensions of Exposure and Management to arrive at a single measure of risk, which we refer to as Unmanaged Risk. Unmanaged risk has two components: unmanageable risk, which cannot be addressed by company initiatives, and the management gap, which represents risks that could be managed by a company through suitable initiatives, but for whatever reason, are not yet being managed. How unmanaged risk relates to exposure and to other types of risk that play a role in our model is best understood by looking at what we call the “risk decomposition,” shown in the diagram below.

**ESG risk decomposition**

<table>
<thead>
<tr>
<th>Exposed</th>
<th>Manageable Risk</th>
<th>Unmanageable Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managed Risk</td>
<td>Management Gap</td>
<td>Unmanaged Risk</td>
</tr>
</tbody>
</table>

In the ESG Risk Ratings methodology, this risk decomposition framework applies to individual MEIs and a company’s overall ratings. In both cases, we express the extent of ESG risk facing companies with an “Unmanaged Risk Score,” which is in the range of 0-100, with 0 indicating no unmanaged ESG risk and 100 indicating the highest level of risk management. A company’s Unmanaged Risk Score is calculated as the difference between its Exposure Score and its Managed Risk Score. For further information we invite readers to consult our ESG Risk Ratings white paper series, available at: https://www.sustainalytics.com.
Endnotes


5 ICCM (2017), op. cit.


12 Sibanye’s unmanaged risk score on this MEI is not available on Sustainalytics platforms; it was calculated specifically for this report for comparison purposes.


FAO (2018), op. cit.

FAO (2018), op. cit.


In another case, seven Cambodian workers are pursuing legal action against two Thai food companies that export to the US and two major seafood importers based in California, on claims of human trafficking, forced labour, indentured servitude and peonage. France-Agence, P. (01.03.2016), "Myanmar migrant workers win $1.3m from Thai tuna firm," The Guardian, accessed (18.02.2019) at: https://www.theguardian.com/global-development/2016/mar/01/myanmar-migrant-workers-win-13m-compensation-thailand-tuna-firm.


37 Climate Action 100, About Us, organization website, accessed (18.02.2019) at: https://climateaction100.wordpress.com/about-us/.


41 IPCC (2014), op. cit.


47 Special Report (16.03.2017), "Denmark’s Dong Energy shifts from fossil fuels to renewables," Financial Times, accessed (18.02.2019) at: https://www.ft.com/content/99150262-d368-11e6-b06b-680c49b4b4c0.

48 All company data is sourced from its 2017 Annual Report.


Tilt B. and Drew Gerkey (28.11.2015) a


IHA (2018), op. cit.


Aon Benfield (2018), op. cit.

Aon Benfield (2018), op. cit.


86 Suncorp (2018), op. cit.


89 The other two industries being Textiles & Apparel and Household Products.


82 WEF (2017), op. cit., data estimates based on Figure 16, p. 34.


We expect similar laws to come into force in the near term. For example, in June 2018, California passed the California Consumer Privacy Act (CCPA) a comprehensive, GDPR-like privacy law which is intended to give California consumers more control over how businesses collect and use their data. The law will enter into force in January 2020. The CCPA also provides for penalties in data breach cases to USD 750 per consumer per incident. In proceedings instituted by the Attorney General, entities that are found to have intentionally violated the law can face penalties of up to USD 7,500 per violation. The law applies to any company that does business in California, covering majority of the world’s major technology companies. It is likely that other states may adopt similar legislation. Data Protection Report, accessed (15.01.2019) at: https://www.dataprotectionreport.com/2018/06/california-passes-major-privacy-legislation-expanding-consumer-privacy-rights/.


Software companies can only ensure privacy protections at the software level. Technology hardware companies, like Apple, that have control over the entire product engineering process, can embed privacy and security protections at both the software and hardware levels.


Sinha, B. (2017), op. cit.


Statista (2018), op. cit.


Bloomberg.

Bloomberg, Jan 2 to Jan 22.
