

ESG Industry Report Card: Capital Goods

June 3, 2019

(Editor's Note: Our ESG Industry Report Cards include an analysis of ESG factors for a selection of companies. We intend to expand our ESG Industry Report cards to include more companies throughout the year.)

Key Takeaways

- Key environmental factors for capital goods companies include managing energy efficiency and carbon emissions of products and processes. Automation has helped these companies be energy efficient and less reliant on skilled labor.
- Environmental remediation is a key factor for some companies where they have legacy liabilities or have inherited them through past acquisitions.
- Social risks are generally limited but are related to the scarcity of skilled labor and safety. Safety has improved somewhat as a result of automation, as fewer skilled workers are needed, thus preventing accidents.

The ESG Risk Atlas

To calibrate the relative ranking of sectors, we use our environmental, social, and governance (ESG) Risk Atlas (see "The ESG Risk Atlas: Sector And Regional Rationales And Scores," published May 13, 2019). The Risk Atlas provides a relative ranking of industries in terms of exposure to environmental and social risks (and opportunities). The sector risk atlas charts (shown below) combine each sector's exposure to environmental and social risks, scoring it on a scale of 1 to 6. A score closer to 1 represents a relatively low exposure, while 6 indicates a high sectorwide exposure to environmental and social risk factors (for details see the Appendix). This report card expands further on the Risk Atlas sector analysis by focusing on the credit-specific impacts, which in turn forms the basis for analyzing the exposures and opportunities of individual companies in the sector.

Environmental Exposure (Risk Atlas: 3)

The biggest environmental risks considered for the capital goods sector are carbon emissions reduction in some of its main end markets and resource management. Changing regulation and market dynamics (such as tighter energy and carbon regulations and growing use of renewable technologies) are shaping demand for industrial equipment and services.

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ESG Industry Report Card: Capital Goods

As companies in the capital goods sector produce their end products, they typically need to develop processes and incur compliance costs that meet with required environmental standards and mitigate possible costs/fines to remediate or address environmental matters such as emissions, water use, and waste disposal. Historically, incidents of environmental claims, such as asbestos or pollution related liabilities, have resulted in meaningful fines or financial obligations, though in many cases these were largely manageable and absorbed by the issuer's balance sheet capacity or cash flow generation. Examples include several lawsuits against 3M alleging that its use and disposal of perfluorochemicals led to the contamination of drinking water in multiple locales throughout the U.S. and Emerson Electric's litigation relating to a variety of asbestos-related personal injury claims.

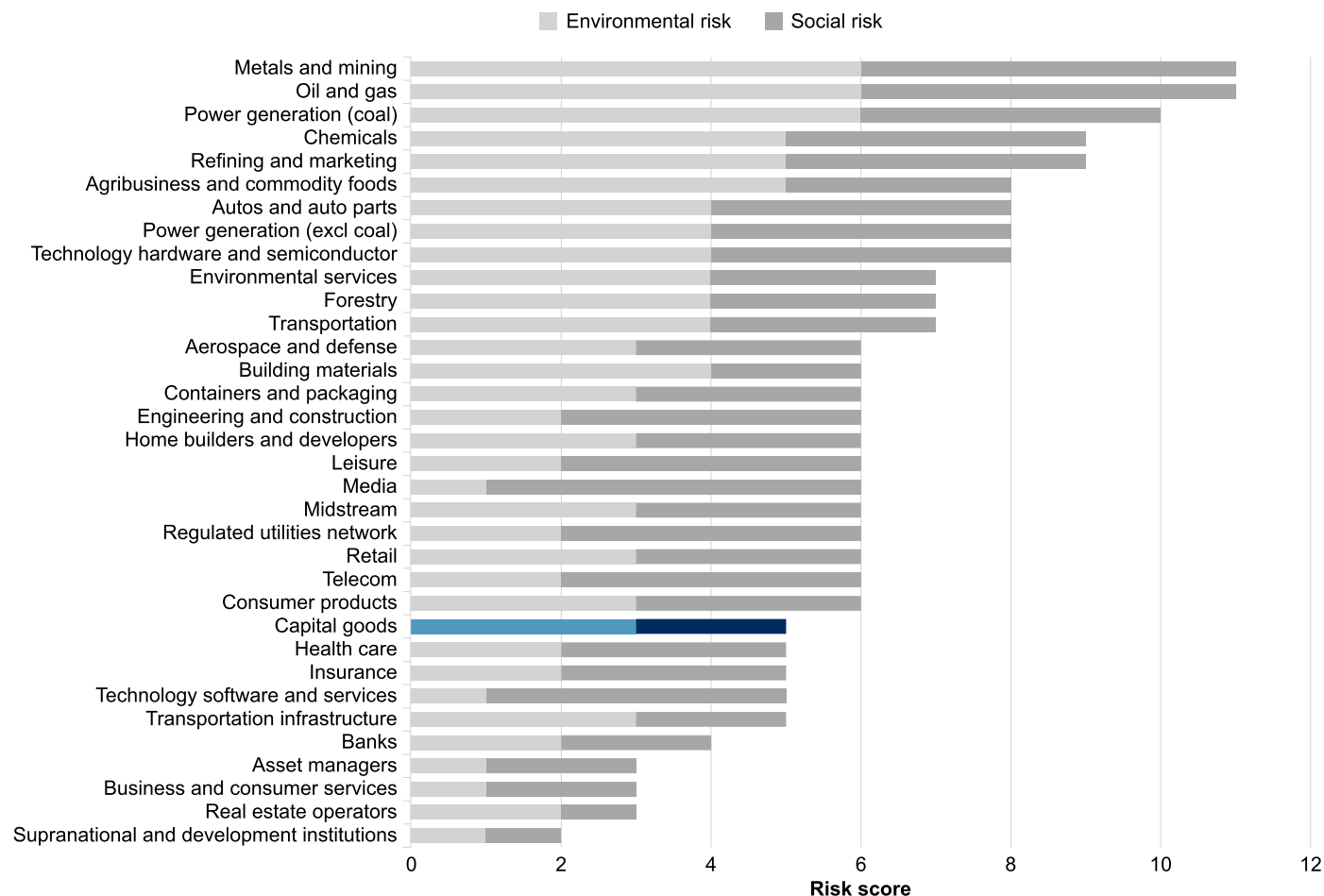
Social Exposure (Risk Atlas: 2)

In considering social risk, we focused on the sector's exposure to changing consumer behavior and human capital management. Changing consumer behavior is driving increased automation at production plants and shifts in the skillset of its labor force to meet targeted operating efficiency strategies. Automation, digitalization, and robotics are global trends in the capital goods industry and create new opportunities for improved growth and profitability, both for providers and users of technology. However, at the same time they will fundamentally change the work environment for employees in the manufacturing industry. Safety management and customer engagement are also important factors in an issuer's competitive advantage, supported by strong brand name recognition, through product quality and technical leadership.

Governance

Governance factors are generally neutral to the ratings in the capital goods sector, though we note the majority of the ratings are speculative grade and many are under private equity ownership.

ESG Sector Risk Atlas



Source: S&P Global Ratings.
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ESG Risks In Capital Goods

Table 1

Company/Issuer Credit Rating/Comments	Country	Analyst
3M Co. (AA-/Negative/A-1+)	U.S.	Trevor Martin

3M is exposed to environmental risks, including GHG emissions, energy and water usage, and waste disposal. While these risks are not material to the ratings, 3M has incurred sizable payments related to environmental matters and is currently the defendant in several lawsuits alleging that its use and disposal of perfluorochemicals contaminated drinking water supplied in multiple U.S. locations. In response to one lawsuit, 3M issued an \$850 million grant to the state of Minnesota. The company also recently announced additional reserves, which were also partially attributable to disposal of perfluorochemicals. The reserves and the grant, although significant on a standalone basis, have had minimal impact on 3M's credit measures given its strong cash flow generation. Still, 3M could be exposed to reputational risk if highly-publicized environmental matters continue. 3M has publicly declared a series of sustainability goals with a 2025 target year, including improving energy efficiency by 30% and achieving "zero landfill" status in 30% of its manufacturing plants. 3M also publicly stated its commitment to sustainable and ethical raw materials sourcing. These actions help to partially mitigate risk, in our view. Social risks are low, as product recalls and associated legal actions of significant size and scale have been rare. We view management and governance as strong based on its strong track record of operational performance and senior leaderships'

ESG Industry Report Card: Capital Goods

depth of experience.

ABB Ltd. (A/Stable/A-1)

Switzerland

**Tuomas E.
Ekholm, CFA**

We don't expect environmental, social, and governance related factors to materially influence ABB's credit quality. Emissions reduction, management of resources from environmental prospective and human capital management from the social point of view does not pose a risk for the group. ABB has established nine sustainability objectives demonstrating how it addresses issues identified as material for the group's development and actively reports progress. These include increasing the share of eco-friendly products, reducing waste and emissions, and responsible relationships with employees. ABB is one of the global players pioneering technologies that are changing the manufacturing industry (automation, digitization, and robotics). We believe ABB is well-managed with high disclosure standards typical for a large, international, publicly listed group. The strategic direction of the group has lately been strongly influenced by the group's activist shareholder base, which triggered significant structural changes at the end of 2018.

Atlas Copco AB (A+/Stable/A-1)

Sweden

Mikaela Hillman

The ESG factors are relevant to our credit analysis of Atlas, but we don't expect factors to materially influence credit quality. The company's products are designed to be sustainable and the continued success of their highly energy and resource efficient solutions are important in maintaining its strong profitability ratios (operating margin stood at 22.2% in 2018). General managers are responsible for curbing energy use in products. We believe minimizing the environmental impact is well integrated within the group's operations. We don't expect any near-term negative effect on investment levels, profits, or reported free cash flow generation (forecasted at above €1.5 bil. per year), as this been an ongoing theme for Atlas Copco for many years. Atlas also faces a number of production-related environmental risks, but none of which are currently a material rating driver. The company strives to make production more efficient, and in 2018, as much as 94% of all waste was recycled, reused, or recovered. The company's products are designed to be sustainable and the continued success of their highly energy and resource efficient solutions are important in maintaining its strong profitability ratios (operating margin stood at 22.2% in 2018). General managers are responsible for curbing energy use in products. We believe minimizing the environmental impact is well integrated within the group's operations. Despite this, we don't expect any near-term negative effect on investment levels, profits, or reported free cash flow generation over coming years (forecasted at above €1.5 bil. per year), as this been an ongoing investment for many years. Atlas Copco also faces a number of production-related environmental risks, but none of which are currently a material rating driver. The company strives to make production more efficient, and in 2018, as much as 94% of all waste was recycled, reused, or recovered.

CNH Industrial N.V. (BBB/Stable/A-2)

Netherlands

**Tobias Buechler,
CFA**

Agricultural equipment manufacturer, CNH Industrial N.V. faces environmental risks due to the weather-dependent nature of its agricultural end markets, where extreme weather can affect a farmer's income and ultimately investment sentiment for new equipment. CNHI offers products/services to optimize harvest results. As a manufacturer of trucks, engines, and light and heavy construction equipment, CNHI is exposed to increasingly stringent regulation regarding greenhouse gas emissions, fuel efficiency, and NOx emission. CNHI is well positioned in our view, due to significant R&D investments and capital expenditures necessary to maintain compliance with environmental standards, and by continuously improving the energy efficiency of its products. For example, its newest LNG trucks reduce particulate matter by 99%, CO2 by 99% (when using biomethane), and NOx by 30% compared with diesel engine trucks. CNHI plans to roll out alternative-fuel tractors in 2022. CNHI is also increasing its environmental standards and aims to use fewer resources in its processes. For example, in 2018, the company reduced its CO2 emission per production unit by more than 34% compared with 2014 and it derived more than 70% of its total electricity consumption from renewable sources. Social factors do not play a major role in our credit assessment but potential risks are product liability issues and health and safety in its own manufacturing operations, which we view as well managed.

Caterpillar Inc. (A/Stable/A-1)

U.S.

**Svetlana Olsha,
CFA**

Caterpillar manufactures construction and mining equipment, diesel and natural gas engines, industrial gas turbines, and diesel-electric locomotives, and is therefore exposed to regulations regarding exhaust emissions and environmental sustainability. The company's end markets, particularly mining, also face increasingly stringent environmental standards globally. We believe Caterpillar is mitigating these risks by funding significant R&D and capital expenditures to improve the energy efficiency of its products and reduce the environmental impact of its manufacturing plants. On the positive side, we believe an increase in infrastructure projects aimed at confronting climate change could boost the demand for Caterpillar's equipment. Caterpillar contends with occupational health and safety risks stemming from the labor-intensive nature of its manufacturing operations and the construction and mining industries. Consequently, the company engineers its products and processes to reduce the occurrence of injuries in its facilities and on job sites. We assess Caterpillar's management and governance as satisfactory and neutral to our rating. The company is currently the subject of a federal investigation related to, among other items, tax matters involving transactions with its Swiss subsidiary Caterpillar SARL. We are uncertain how this federal probe will affect Caterpillar and will continue to monitor all developments related to the investigation.

CRRC Corp. Ltd. (A+/Stable/--)

China

Chloe Wang

Environmental and social factors are material to our credit analysis of CRRC but not key rating drivers, while governance factor

ESG Industry Report Card: Capital Goods

has less of an impact. Under the “Blue Sky Protection Plan”, the Chinese government vows to move some commodity transportation from highway to railway and increase railway freight transportation volume by 30% in 2018-2020 (equivalent to 9% CAGR), which would lead to a rebound in demand of locomotives and freight wagons. This could benefit CRRC and drive revenue and profit growth in the next two years. CRRC is also actively investing in new energy, new materials and environmental protection related technologies to reduce energy consumption and increase efficiency of its traditional rolling stock products as well as expand its business scope to new areas, such as new energy vehicle, environmental protection equipment, polymer composite material, etc. We expect CRRC’s Research & Development expenditure to remain largely stable at around 5-6% of its revenue in the next two to three years. As a railway equipment provider, CRRC is exposed to potential reputation damage and costs arising from warranty and product liability claims for quality deficiencies. The company makes c.RMB3billion additional warranty provisions per year, which should be largely sufficient to cover normal repairs and returns. However, any high-profile fatal railway accidents could have a severe negative impact on sector demand and CRRC’s credit. Though these accidents are very rare and may not be the fault of CRRC, the company still bears a lot of the social, operational, and reputational risks of these events.

Deere & Co. (A/Stable/A-1)

U.S.

**Svetlana Olsha,
CFA**

The company faces environmental risk because its agricultural end markets are weather-dependent, and we incorporate the potential for cash flow and leverage volatility that results from farm cycles into our rating. Poor or unusual weather can delay seeding efforts, stunt crop growth, and disturb harvesting activity, all of which could lower farmers’ incomes and willingness to purchase new equipment. Still, Deere designs its products for efficiency, which supports ongoing replacement demand. As an engine manufacturer, Deere also faces increasing engine emissions regulations globally. We believe Deere will continue to incur substantial R&D costs to comply with emissions standards in the countries it operates. On the social front, population growth and increasing equipment mechanization in developing countries help give Deere a competitive advantage. Still, we view the shortage of skilled labor as a growing risk for equipment manufacturers, especially in the U.S, due to an aging workforce. We view the company’s management and governance as strong (though neutral to the rating), reflecting a solid track record of strategic and operational execution and its highly experienced management. We believe the company’s management and board of directors appropriately balance the interests of its various stakeholders.

Emerson Electric Co. (A/Stable/A-1)

U.S.

Michael Tsai

Emerson is exposed to environmental regulations, which vary by region. Regulations of refrigerant gases have been enacted in the U.S. and E.U., primarily concerning the use of hydrofluorocarbons (HFCs), a type of refrigerant that has been shown to have a global warming effect that is significantly larger than CO2. The regulations ban most new and imported equipment that utilize HFCs by 2020 in the U.S. and 2030 in the E.U.. Though Emerson continues to offer products that use HFCs, it also manufactures refrigeration systems that can use either legacy HFC refrigerants or environmentally-friendly substitutes. This could benefit the company as customers modify refrigeration systems to comply with government standards and mitigate environmental impact. Still, we expect any potential benefit will be limited the company’s financial performance in the near term. Litigation relating to a variety of asbestos-related personal injury claims is a social risk. These litigations have had limited ratings impact so far, but they could expose the company to similar asbestos-related litigation in the future. Nonetheless, we do not expect future litigations to be of a size or scale that would be impactful to the rating.

General Electric Co. (BBB+/Stable/A-2)

U.S.

Ana Lai, CFA

Environmental and governance are the most important factors in light of the current challenges in the power segment. Performance in its power business collapsed over the last year, triggering two downgrades. Still, GE remains an important player in the global energy market and has a large installed base of power generation equipment (and related service businesses), which generates about one-third of the electricity on the planet. While GE remains a strong market leader, excess capacity (in light of a shift toward renewable energy in the market) and service business execution issues have affected consolidated profitability and cash flow. Our view of GE’s governance reflects recent operational missteps in power and C-Suite management turnover, while acknowledging current management is taking a range of actions to address these challenges. We believe the new management team has a creditor-focused financial policy as evidenced by the dividend cut and sizable asset divestitures to bolster liquidity.

Hitachi Ltd. (A/Stable/A-1)

Japan

**Makiko
Yoshimura**

Hitachi’s power and energy business, which is core for the company, is potentially exposed to environmental risks. However, it accounts for as little as 5% of consolidated operating income, so we think the impact on Hitachi’s credit would be limited. Amid the drive to reduce carbon emissions, many thermal power generation businesses have faced pressure on earnings and profits. But Hitachi spun off its thermal power business into a joint venture, so the revenue contribution from this field is relatively small. In January 2019, Hitachi announced it was suspending work on a nuclear power generation project in the U.K. that was at risk of ballooning construction costs because of environmental and safety measures. We believe this should significantly reduce onerous cash outlays related to this project. Regarding social factors, Hitachi faces risks related to recruitment and staffing, because the company has employees around the world, mainly IT services and manufacturing departments. However, the company has a record of steadily managing these issues and businesses, so we think the impact of these risks will remain manageable. Governance related risks are neutral for the rating

ESG Industry Report Card: Capital Goods

Honeywell International Inc. (A/Stable/A-1)

U.S.

**James Siahhaan,
CFA**

Honeywell is exposed to a moderate level of environmental risk, mainly through its performance materials & technologies (PMT) division. The PMT segment (26% of 2018 sales) is involved in supplying catalysts, adsorbents, refrigerants, and other chemicals and additives to customers in the oil and gas, industrial process, and manufacturing industries. The company is subject to environmental remediation liabilities, much of which stem from businesses that Honeywell has since closed or sold. It spun off its AdvanSix business (makes nylon 6 resin, chemical intermediates, and ammonium sulfate fertilizer) in 2016. In 2018, the company spun off its turbocharger and residential building businesses; as part of those transactions, Honeywell will be partially indemnified from legacy asbestos and environmental liabilities through reimbursement arrangements with the spun companies. In many cases, the company has repurposed these remediated sites into viable commercial, residential, and open space assets for the surrounding communities. Like many well capitalized companies, Honeywell has stated performance goals related to energy efficiency, greenhouse gas reduction, and water conservation. It has increased its energy efficiency by about 70% (2004 to 2018), improved its greenhouse gas intensity by more than 10% from 2013, and saved more 127 million gallons of water via enacting over 150 conservation projects. Regarding social factors, it is important to recognize Honeywell's status as a defense contractor, which may not align with the concept of socially responsible investing. The defense and space end markets account for roughly 13% of the company's sales. The company offers avionics, propulsion, satellite communications, instrumentation, software, and other products and services to militaries worldwide. Honeywell is in compliance with all applicable U.S. and foreign laws and regulations.

Johnson Controls International plc (BBB+/Stable/A-2)

Ireland/U.S.

**James Siahhaan,
CFA**

ESG risks are relevant to our analysis, but aren't currently material rating drivers. The company has a good track record of identifying and mitigating these risks. As a producer of HVAC products, the company is cognizant of the effect that HFCs have on the environment. It supports the Kigali Amendment to the Montreal Protocol which calls for a global phase-down of HFC use. JCI introduced a highly efficient line of centrifugal chillers and is investing in testing of refrigerants with lower potential for ozone depletion. This supports the company's competitive advantage by providing a differentiated product aligned with end-market demand trends, as JCI's customers' value environmental stewardship in their supply chains. The company has set various environmental-related goals to achieve by 2025: reduce energy intensity and greenhouse gas emissions intensity by 25%; to reduce water consumption by 10% at its high-risk plants; and to ensure that 25% of its manufacturing locations are certified landfill-free. The company recently sold its battery manufacturing business to Brookfield Business Partners; the absence of that industrial process-intensive business will lower the company's water and energy consumption. Regarding social risks, JCI takes steps to ensure its supplier base abides by sustainable practices and that the suppliers are diverse. The company has made good progress on its goal of formalizing the sustainability governance process by 2025, as the Executive Committee now reviews the goals and performance, and in the future will disclose climate-related risks in financial reporting. JCI's sustainability council (representatives from various departments) meets every month and reports to the executive team quarterly.

Komatsu Ltd. (A/Stable/A-1)

Japan

Roko Izawa

We believe Komatsu can continue to manage ESG risks that are inherent to its industry, proven by its long history of engaging in environmental and social activities in a more proactive manner than its sector peers. Regulations require the company to address CO2 emission over time, especially in mining projects in resource-rich countries. Nonetheless, we view Komatsu to be more advanced in its energy-efficiency technology in reducing CO2 emission in manufacturing and machine use than other players in the sector, thus the company is well positioned for reducing environmental risk and managing risk of downward pressure on profits. We believe Komatsu's exposure to social risk is relatively low and continues to improve safety at its customers' job sites and meeting changes in their behavior. For example, Komatsu has developed products that reduce the need for dangerous manned-hours, achieving complete unmanned operation at mining sites and ICT intensive. We view Komatsu's management and governance as strong reflecting its management's strategic competence, expertise, experience, and the depth of human resources in its management team.

Mitsubishi Heavy Industries Ltd. (A-/Negative/---)

Japan

**Makiko
Yoshimura**

The environmental risk, especially greenhouse emission, among other factors, has put Mitsubishi Heavy Industries' earnings and cash flow under moderate pressure, in our view. This pressure led to an outlook revision to negative from stable in 2017. Nonetheless, we believe MHI's diversified product portfolio, in which MHI maintains competitive in reducing CO2 emissions, and its disciplined financial management, help mitigate the impact on the ratings. MHI's Power Systems unit, especially in its thermal power generation business, is facing headwinds due to a shift away from carbon-emitting activities. We believe MHI will maintain its technological advantage especially in Asia, where the demand for thermal power generation plants remain strong, and it has competitiveness in less-carbon dioxide-producing gas-powered generation systems. Nonetheless, we expect orders for thermal power generation business globally to continue falling. We also see a global energy shift away from the heavily regulated nuclear power generation sector. We include these trends, which have a negative impact on the company's earnings, in our base-case forecast. On the other hand we project increasing demand for MHI's advanced turbochargers, which reduce CO2 emissions through engine downsizing & low-environmental impact refrigerants. Therefore overall, we believe the company will likely manage the impact of the shift away from fossil fuel technologies. We do not see any material rating impact from governance risks.

ESG Industry Report Card: Capital Goods

Schneider Electric S.E. (A-/Stable/A-2)

France

Tuomas E.
Ekholm

We do not see environmental, social, and governance related factors as risks that could affect the credit quality of Schneider Electric. Sustainability is one of the core values of the group, and it has an excellent track record and commits to managing resources from an environmental perspective as well as human capital management from the social point of view. Schneider Electric aligns with the United Nation's Sustainable Development Goals (SDGs), and since 2005 has measured the group's sustainable development progress. The group has a strong public commitment to promoting respect for the natural environment, and provides systems and products to help people use electricity safely, efficiently, and in ways that conserve energy and other natural resources. Progress toward reaching its sustainability goals is measured, audited, and presented together with the group's financial information, and top management is held accountable for managing the group to reach the set sustainability targets. We see no issues related to governance, and view the group as well-managed and committed to a long-term strategy, of which sustainability is an integral part, with high disclosure standard typical for a large international publicly listed group.

Siemens Aktiengesellschaft (A+/Stable/A-1+)

Germany

Tuomas Ekholm

ESG factors are embedded into our assessment of Siemens' credit but do not present a material rating driver. Emissions reduction, management of resources from environmental perspective, and human capital management from the social point of view are the biggest factors for the capital goods industry. Siemens has demonstrated a stainless record in respect of managing these risks. Sustainability is one of the Siemens' core organizational values. The company has aligned its internal targets with UN Sustainable Development Goals 2030. Siemens pledges to become carbon neutral by 2030, by reducing in-house CO2 emissions. Siemens invests heavily in its technological base and product development to be able to offer its clients environmentally efficient products and solutions and is the world leader industrial digitalization. Furthermore, Siemens can provide relevant training and qualifications to employees to prepare them for the changes in the working environment resulting from increasing automation and digitalization, and thereby preserve human capital. From the governance standpoint, Siemens adheres to the highest standard of disclosure, in line with large international players. Management committed is to a long-term strategy, supporting stable organic growth, profitability gain, and clear organizational goals and values.

Toshiba Corp. (BB/Positive/B)

Japan

Makiko
Yoshimura

We believe greenhouse emission, and other operating factors, will likely put Toshiba's earnings and cash flow under moderate pressure, especially in its energy system solution business (including thermal power plant business), which is one of Toshiba's core businesses. We believe the global trend of decarbonisation will have a negative effect. The company is addressing profitability through restructuring (especially its thermal power plant business) and revitalizing the business by shifting its focus on service and solution. Nonetheless the market position of these businesses is not as robust as competitors and even after the restructuring, we expect the profitability to be lower than Toshiba's other core businesses, such as infrastructure or device business. Toshiba is exposed to some social risk related to human capital management in its IT service business (the company's strategic focus area) but we do not believe this is a major rating driver over the next couple of years. We expect the business to account for only less than 10% of total consolidated EBITDA. Still within the space, it is critical for Toshiba as well as other IT service providers to secure and maintain talent who are capable in AI and data analytics. Talent acquisition is becoming more competitive. Governance issues at Toshiba has affected our credit rating with multiple downgrades since the widespread accounting improprieties it was mired in 2015. In addition, in late 2016 Toshiba management said it would recognize massive losses related to its U.S. nuclear power business. These developments demonstrated its flawed ability to execute its business plan and manage risks. We will continue to monitor and review its risk management practices.

thyssenkrupp AG (BB/Developing/B)

Germany

Tuomas Ekholm

ESG factors do not affect our rating on thyssenkrupp. The group in our view has demonstrated ability to deal with the most meaningful factors for the sector, which are management of resources from environmental perspective and human capital management from the social point of view, despite the ongoing significant shifts in the group structure. thyssenkrupp has set a target to have implement an ISO 14001 environmental management system by fiscal year 2019/2020, covering all relevant environmental aspects such as reducing wastewater, emissions, and the environmental impact of products through to disposal. The most important environmental factor for thyssenkrupp is the use of energy. The group's energy consumption came to more than 70 terawatt hours in the 2017/2018 fiscal year. The vast majority of this is consumed by the group's steel operations. The remaining operations accounted for 6 TWh. thyssenkrupp adheres to a high disclosure standards in line with other large international publicly listed groups. Over the past two years, there have been significant changes in the group's strategy initiated by its activist shareholders, leading to the ongoing unwinding of the group's conglomerate structure.

United Rentals Inc. (BB/Stable/--)

U.S.

Olya Naumova

We view United Rental's exposure to environmental risk to be minimal. In our opinion, the most significant environmental risk is the disposal of the engine oil and harsh chemicals used to maintain its fleet. The company is committed to properly disposing of chemicals of at all of its branch locations. Specifically, it utilizes water recycling systems in its wash bays and its water withdrawals are not made from sensitive water sources. Regarding emissions, fuel-efficiency, and other environmental standards, United Rentals' exposure is much lower compared with equipment manufacturers given the focus on rental rather than manufacturing. Should one of the company's suppliers fail to comply with environmental regulations, we anticipate

United Rentals' liability to any subsequent fines or regulatory action would be minimal. We believe United Rentals curates a fleet of equipment from OEMs and therefore has some ability to control the sustainability of its fleet by selectively choosing equipment that meets its broader environmental goals. On the social front, United Rentals is primarily exposed to risks associated with occupational safety of its workforce. The company, like others in the heavy equipment space, has identified occupational safety as a key area of potential improvement. The company has instituted policies that reinforce workplace safety among its employees, including daily safety trainings and on-site safety managers at each branch. These efforts resulted in a 7% reduction in the company's total recordable incident rate between 2016 and 2017.

Appendix: Components In The Sector ES Risk Atlas

Here is a list of examples of factors we consider in evaluating sector-specific environmental exposure. For example, we examine to what extent each sector is relatively exposed to:

Greenhouse gas emissions (GHG): actual or potential regulations such as carbon taxes, emissions trading schemes, and other direct or indirect costs. The GHG emissions under the Kyoto climate change agreement are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

Sensitivity to extreme weather events: incremental costs or the potential physical impact on assets associated with recurring (for example, hurricanes) or infrequent (droughts) severe weather events.

Sensitivity to water scarcity: potential costs related to the need for extracting or sourcing large quantities of water, or requiring on-site water treatment, in comparison to other water users of the same water basins or utilities.

Waste, pollution, and toxicity: potential fines or rising costs associated with prevention and treatment of waste and pollution, including hazardous waste and air pollution.

Land use and biodiversity: asset retirement obligations, developing natural land or potential operating constraints, or increased costs associated with protecting plant and animal life.

The following is a list of examples of factors we consider in evaluating sector-specific social exposure. For example, we analyze to what extent each sector is relatively exposed to:

Human capital management: a sector's capacity to develop a long-lasting productive workforce while reducing potential operational disruptions from workforce mismanagement; diversity and inclusion attributes; exposure to strikes and the sector's general exposure to dealing with emerging skills scarcity or surplus labor.

Changing consumer or user preferences: We recognize that changes in consumer behavior are often the result of complex dynamics, such as changes in technology or fashion or other disruptive business trends. Therefore, we treat a change in consumer preferences as a social factor related to sustainability, health, safety, the environment, privacy, financial mis-selling, or community and human rights, particularly when an entity has triggered the change.

Demographic changes: potential costs or opportunities related to population growth and composition, such as an aging population, urbanization, changing living standards, or a growing middle class.

Safety management: potential direct or indirect costs resulting from problems related to the safety of a sector's production processes and final customer products.

ESG Industry Report Card: Capital Goods

Social cohesion: potential or actual costs in direct operations or in the supply chain resulting from geopolitical or community-related events such as conflicts, community unrest, and terror attacks.

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