ESG Industry Report Card: Consumer Products And Agribusiness

May 21, 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.)*

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Key Takeaways

- We consider environmental and social risks to be overall modest from a credit perspective and evenly balanced in the branded consumer non-durables industry. Concerns include environmentally unfriendly plastic packaging and waste treatment.
- Consumer focus on health and wellness is causing important shifts and loss of market share for goods such as carbonated nonalcoholic beverages, beer, and cereals. The global tobacco industry is also subject to health-related risks, resulting in significant regulation.
- In agribusiness, environmental risks factor more heavily than social risks, particularly weather-related volatility and disease outbreaks.
- Governance has factored more heavily in recent rating actions in the agribusiness sector, mainly in Brazil, albeit more company-specific than as a broad sector trend.

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.

Branded Consumer Non-Durables, Durables, And Tobacco

This industry includes the following subsectors: apparel, accessory stores, and related products (footwear and accessories); beverages (nonalcoholic and alcoholic), including spirits and soft drink bottlers; food (including packaged and branded) and kindred products; personal care and cosmetics; and household products.

Environmental exposure (Risk Atlas: 3)

The global anti-plastic movement is an outcome of inherent environmental risks, which have so far not translated into far-reaching or quantifiable government policy actions. Still, we believe it is subject to the evolution of policy-making across the world. Over the medium to long term, it is possible that sudden regulatory action on waste management will make the industry bear the cost of switching to more environmentally friendly packaging solutions or pay for the treatment of product waste before such costs can be passed on to end consumers. However, many companies are already taking strategic actions that and may help improve operational efficiency ahead of such a transition, including developing smaller, more automated manufacturing bases, as well as improving productivity in warehousing, logistics, and shared services and reducing, reusing, and reinventing packaging. Another environmental risk is tiny plastic particles from synthetic clothing, which make their way into water when washed.

We believe the consumer durables sector has a modestly higher environmental risk than the non-durable sector because consumer durables can significantly contribute to hazardous and non-hazardous solid waste generation and energy use. Refrigerators, for example, can release harmful chemicals when thrown out, so there is growing importance around solid waste management and materials recovery. In addition, energy-using durables such as kitchen appliances and electronic equipment can contribute significantly to environmental degradation as they are one of the fastest-growing sources of residential energy use.

Social exposure (Risk Atlas: 3)

Social risks surround consumer behavior, human and safety management, social diversity in the workplace, and demographics. Consumers are increasingly focused on health and wellness, which has resulted in a loss of market share for some categories of goods such as carbonated nonalcoholic beverages, beer, and cereal. This is partly due to the additives, preservatives, sugar content, and chemicals in products being linked to consumer health issues, as well as consumers' busy lives. Rising obesity rates--now considered a worldwide public health crisis--have also been linked to greater consumption of the additives and preservatives found in many processed foods and beverages.

Governments have developed or are developing ways to stem the obesity rate because of its impact on healthcare resources and increasing healthcare costs. To encourage consumers to make healthier choices, governments are providing educational programs and food guidelines, as well as implementing mandatory labeling and in some regions taxes (i.e. on sugary drinks). Governments are also stepping up efforts to reduce alcohol consumption because of its impact on consumer health and injuries.

Packaged foods have been particularly hit because consumers have switched buying patterns to store peripheries, where fresh products are, and away from the center-of-store area where shelf-stable products are sold. Consumer products companies are thus investing more in innovation, reformulating products, increasing transparency on labels, and engaging in ongoing merger and acquisition activity to find ways to accelerate sales growth and keep pace with consumers.

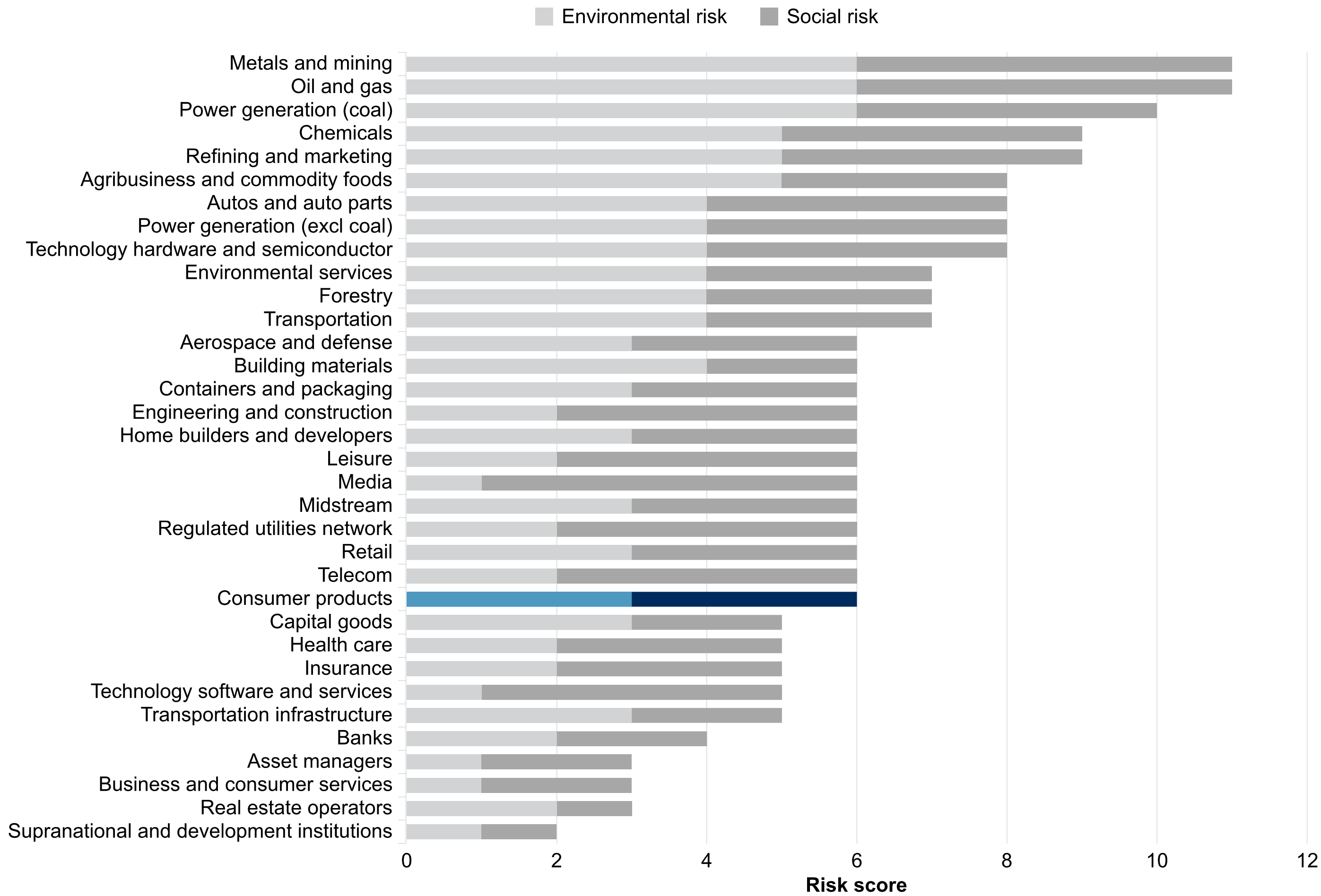
Other risks in the industry include social media marketing, which we consider an area of potential social risk due to emerging data privacy laws and because of growing consumer sensitivities around factual accuracy and respectful attitudes to different social groups. Safety management is also a relevant factor for the industry given the risks to reputation and profitability from product recalls. This risk is partly offset by regulatory requirements, corporate focus on preserving brand equity, and by the relatively small volume impact from any product batch entering the market.

We believe that the tobacco sector has the highest social risk given the widespread awareness of the adverse health effects of smoking and its impact on healthcare costs and resources. The sector has stringent regulatory requirements including restrictions on the promotion, marketing, packaging, labelling, and usage of tobacco products. The secular decline of combustible cigarette usage is accelerating because of a combination of health concerns, increasing regulations in developed markets, and greater availability of reduced-risk products. The decline could accelerate further because the U.S. Food and Drug Administration (FDA) is aiming to reduce the nicotine content of combustible cigarettes and ban menthol cigarettes. Several countries like France are steadily raising cigarette prices. Companies within the sector continue to perform well because they have been able to offset volume declines with prices, and in some cases are diversifying away from combustible cigarettes through new growth-oriented investments such as e-cigarettes and cannabis. Companies' operating performances and credit metrics could deteriorate if the decline in combustible cigarettes accelerates further and they cannot offset the impact with price increases or alternative tobacco-related products.

Governance

We see governance issues as idiosyncratic. In most cases, governance does not significantly affect ratings. Tobacco, alcoholic beverage, and cannabis companies require greater management oversight given their need to interact with regulators and public officials. Also, there are a number of companies that have significant family ownership or voting control. We do not believe that these companies' governance unduly benefits the families/trusts over other stakeholders.

ESG Sector Risk Atlas



Source: S&P Global Ratings.

Agribusiness

Environmental exposure (Risk Atlas: 5)

The agribusiness sector faces several environmental risks that are critical to its long-term growth prospects, such as land and water use and pollution control. These risks are typically well mitigated in the short term; for example, dedicated water sources for the world's key farming regions are largely expected to remain intact over the next several years, including in the U.S. and Brazil, which have dependable irrigation networks. In addition, improving harvest yields from better agronomic practices (such as more disease-resistant seeds and targeted use of fertilizers) continue to ensure relatively steady global crop production to supply the world's main consumer markets, although more frequent extreme weather conditions like hurricanes will likely have larger impacts on individual companies' production and/or supply chains in a particular region. Temporary weather-induced crop shortages, food supply contamination, and/or disease outbreaks tend to increase profit volatility and can hurt ratings. Recent key weather events affecting the sector include last year's drought in Argentina, which favorably altered the profit outlook for soybean crushing in many regions, but weighed heavily on the credit quality of producers whose output may have been destroyed or severely curtailed. Currently the livestock sector is dealing with swine fever hitting China's pork supply, but we believe production out of the Europe, South America, and even the U.S. (tariffs not withstanding) can replace some of China's anticipated shortfall. We don't anticipate any negative rating actions related to the swine fever outbreak because most rated issuers do not rely on exports to China.

Environmental risk is comparatively less relevant for processors than producers because the process and distribution business is only indirectly exposed to weather conditions and it's possible to source from multiple sites and regions.

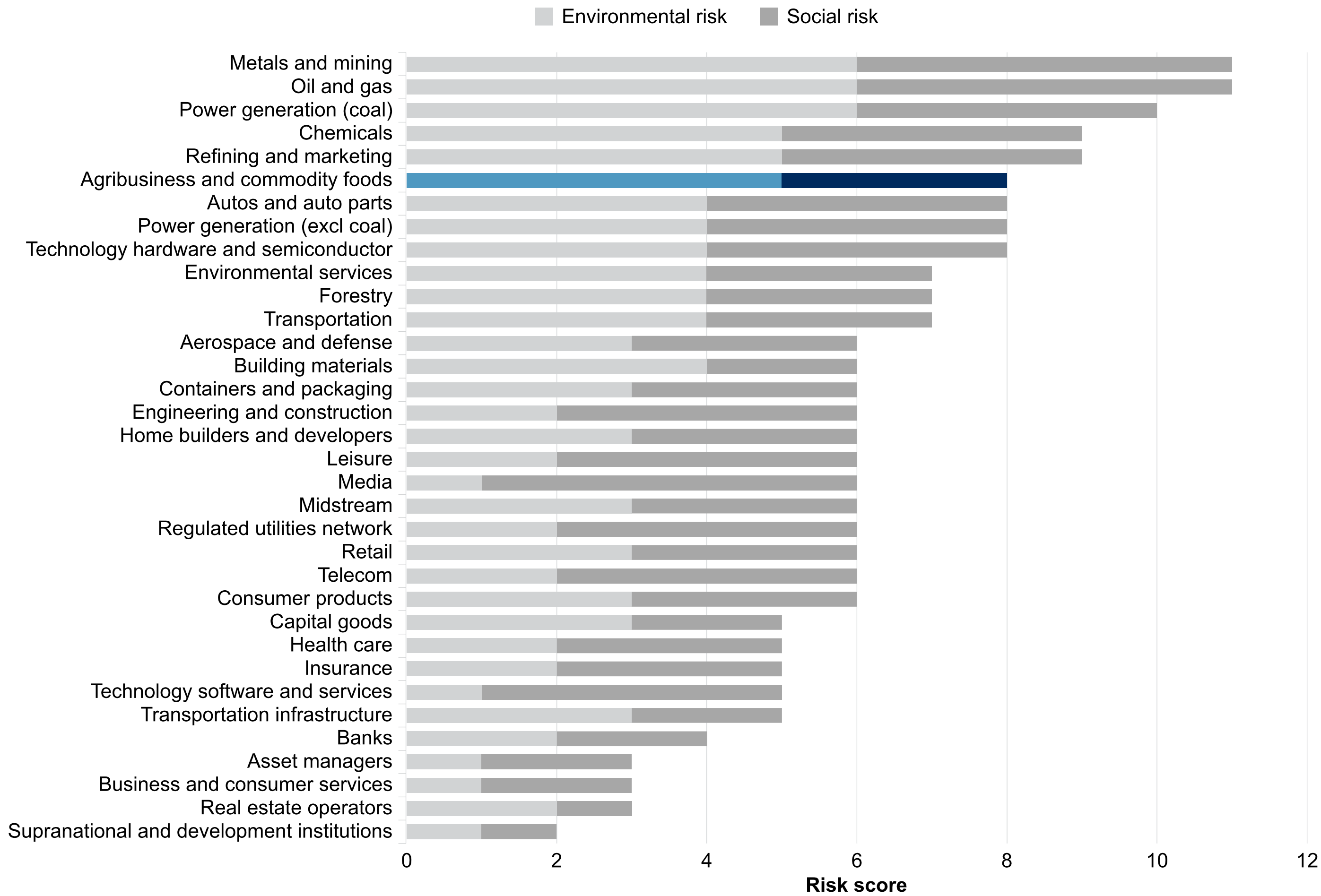
Social exposure (Risk Atlas: 3)

Although environmental risks are most relevant to agribusiness, we have seen more and more social ones factored into our recent rating actions. Key social factors include reputational risks related to food safety concerns and the sector's shift to more traceable, sustainably sourced food and ingredients pressured by changing consumer preferences. Some examples include several failed plant inspections affecting Brazil's livestock sector, expanding antibiotic and hormone-free livestock production, and acquisition-based expansion into more natural and healthy ingredients by key industrial food manufacturers. This is prompting companies to re-evaluate their existing portfolios and seek different growth avenues, possibly within a different financial policy framework.

Governance

Although more company-specific rather than a broad sectorwide issue, governance still factors heavily into many of our ratings. Several global agribusiness companies have or are facing pressure to change their strategies and/or governance structures, including JBS S.A. after the fallout from bribery allegations, BRF need to ensure chicken exports conform to Muslim standards in their key Mideast export market, or Bunge Ltd.'s recent agreement with its new activist board members to undertake a strategic review.

ESG Sector Risk Atlas



Source: S&P Global Ratings.

ESG Risks In Consumer Products

Table 1

Company/Rating/Comments	Country	Analyst
Anheuser-Busch InBev S.A. (A-/Watch Neg/--)	**Belgium**	**Barbara Castellano**
Environmental and social risks don't directly affect our rating on ABI. Potential risks to the group's brands come from issues related to alcohol abuse, so we consider the company's clear commitment to responsible drinking especially important. Under the "smart drinking" program, ABI promotes projects and actions to raise awareness and to reduce alcohol abuse. In some emerging economies, the group is proposing entry-level products that use local raw materials instead of traditional and more expensive ingredients like malt. This benefits sales by adding customers who couldn't afford the traditional products. This is often also supported by local governments because these products help reduce illegal alcohol consumption. We do not see any governance risks. ABI has an articulated ownership structure derived from past mergers, which often have been concluded partially through share exchanges. There are clear governance rules that define the board's composition and protect minority shareholders' interests.		
Altria Group Inc. (BBB/Stable/A-2+)	**U.S.**	**Brennan Clark**
Widespread public awareness of smoking's adverse health effects has been a key contributor to the secular decline in combustible cigarette consumption in the U.S., and to a lesser extent tobacco manufacturers' profitability. Manufacturers have been further hindered by punitive regulatory and legal actions in response to these health effects. Altria has proved resilient, offsetting volume declines with price increases and generating significant profits and cash flows. There is a risk that declines could accelerate further due to the FDA's proposed reduction of nicotine content in combustible cigarettes and ban on menthol cigarettes. Altria has responded to these risks by strategically diversifying away from its core tobacco business through new growth-oriented investments, including e-cigarette provider JUUL Labs Inc. E-cigarettes have generally been viewed as a way to transition smokers off of combustible cigarettes and also as less harmful than combustibles. However, flavored e-cigarettes, particularly JUUL, have been under significant scrutiny because they have been tied to a rapid rise in youth usage. The FDA has expressed serious concerns over flavored e-cigarettes and may push to ban them. JUUL and Altria plan to address this, but the FDA has questioned their commitment. Our rating incorporates the social and regulatory risks associated with Altria's core tobacco business and JUUL. Given its extensive regulatory experience, we believe Altria can support JUUL's efforts to meet regulatory requirements.		
Coca-Cola European Partners (BBB+/Stable/A-2)	**U.K.**	**Maxime Puget**
CCEP, similar to other bottlers, has moderate exposure to environmental risks related to plastic packaging waste, water scarcity, and health concerns. Governments are increasingly enforcing more stringent recycling rules, which could mean higher operating costs for CCEP if it has to pay to collect and recycle plastic waste. That said, CCEP has been positioning itself more favorably. All of its glass bottles, cans, and polyethylene terephthalate (PET) bottles are already recyclable, and it aims to have at least 50% (versus 28% in 2018) of the PET it uses by 2025 from recycled materials. As a beverage bottler, CCEP could also face rising operating costs to source water and tensions with local communities as natural resources become more scarce. Today, CCEP aims to be more efficient and uses 1.61 liters of water for every 1 liter of beverage (-11% since 2010). Changing consumer tastes and stricter health regulations on sugar content in drinks are risks for its large sparkling beverages business. However, CCEP anticipated this, and 45% of its products are low or no calorie. We view CCEP's management and governance as satisfactory, reflecting management's ability to grow the business profitably and a balanced board composition.		
Coca-Cola Femsa S.A.B. de C.V. (A-/Negative/--)	**Mexico**	**Alexandre Michel**
KOF, like most beverage bottlers, faces long-term social risks, notably changes in consumer tastes toward low or no-sugar products and categories because of health concerns. Moreover, in some markets like Mexico in 2014, KOF faced structural reforms, higher taxes, and excise tax-driven prices on most soft drinks, which affected industry volumes. We believe KOF is on track to meet new consumption trends and regulatory environments as it diversifies its product offering toward low or no sugar beverages (35% of the brands in its total portfolio in 2018), while reformulating its products, reducing packaging size, and increasing prices without affecting long-term earnings. Moreover, KOF invests in promoting nutrition and healthy habits, reaching 5 million people across its markets. Due to KOF's products and supply chain, environmental factors such as water scarcity, waste management, and carbon emissions can be risks if regulations increase. KOF is reducing its exposure to these risks: between 2010 and 2018, it increased its water use efficiency by 19%. In 2018, it generated savings of about $14.6 million through its efficient resource management and packaging optimization, and increased its energy efficiency by 10% (compared to last year), resulting in cost savings of $5.62 million. Overall, we do not expect credit implications from social and environmental factors over the medium term because KOF's initiatives don't require a significant increase in capital investments. We assess KOF's management and governance as strong, based on its solid operating track record, effective strategic planning, robust sustainability agenda, and positive corporate culture.		

Constellation Brands Inc. (BBB/Stable/A-2) The company benefits from favorable demographic trends for U.S. imported beer consumption, which underpins its above-average sales growth. It's also positioning its portfolio to benefit from changing consumer tastes away from beer to other forms of alcohol and to legally accepted forms of recreational consumption like cannabis. Social factors currently weigh more heavily on our rating on Constellation, particularly over the near term. The company recently leveraged its balance sheet to buy a near 40% stake in cannabis producer and marketer Canopy Growth Corp. Favorable growth trends for its flagship beer brands will be critical to deleveraging; however, growth is showing early signs of slowly moderating as overall U.S. beer consumption is losing share to wine and spirits. Moreover, U.S. alcohol consumption overall is moderating as younger generations opt for coffee houses or cannabis. We believe these shifting social trends drove Constellation's strategic decision to invest in Cannabis. We also consider Constellation's governance in our rating analysis. Constellation continues to be controlled by members of the Sands family. Despite the family's high level of control, we don't believe Constellations' governance unduly benefits them over other stakeholders. Underpinning this opinion is the company's successful operating track record and its demonstrated history of adhering to its financial policy targets while executing its M&A-driven growth strategy.	**U.S.**	**Chris Johnson**
Danone S.A. (BBB+/Stable/A-2) We don't believe ESG factors materially influence Danone's credit quality. Still, given the nature of its products, Danone is exposed to global risks like human health and resource sustainability. We believe that the most relevant environment risk from a credit prospective could come from sudden regulatory actions on the usage of PET that make the industry bear the cost of switching to more environmental solutions. In line with the rest of the industry, Danone relies largely on PET for water. However, in 2017 Danone and Nestlé started a partnership called NaturALL Bottle Alliance to develop 100% bio-based bottles using biomass feedstocks, such as previously used cardboard and sawdust, so it doesn't divert resources or land from food production for human or animal consumption. In 2018, Danone formalized its commitment to a circular economy of packaging via a new packaging policy that aims to use 100% reusable, recyclable, or compostable packaging by 2025. We don't believe social risks are significant for the rating. Among potentials, we consider that reputational damage linked to product quality could seriously hurt a segment like infant nutrition. However, Danone has a solid track record and no history of relevant claims in this respect. We assess Danone's management and governance as strong, reflecting the consistency between targets and strategy execution, as well as board independence.	**France**	**Barbara Castellano**
Diageo PLC (A-/Stable/A-2) We believe Diageo faces social risks, for example from regulatory changes where the government takes a more stringent approach to limiting alcohol consumption (restricting sales and marketing practices, higher taxes, etc.) considering the potential negative effects on consumers' health. This scenario (although unlikely in the short term, in our view) can be a game changer for the whole alcohol industry, like what is currently happening in the tobacco sector. In this regard, the company is focused on three key areas: industry collaboration and providing consumers with the information and tools they need to make informed choices about drinking, delivering impactful and responsible drinking programs, and training materials championing responsible drinking aimed at reaching one million adults. To promote responsible drinking and tackle underage consumption, Diageo has several initiatives; for example, ongoing educational programs and an internal marketing code of conduct that includes a directive to "place marketing in communications media and events only where 70% or more of the audience can reasonably be expected to be older than the legal purchase age." Looking at advertising practices, we believe social media is a possible challenge that the company needs to carefully manage to comply with evolving regulations and internal marketing codes, especially regarding underage consumption. So far this risk has not affected the rating on the company. We view Diageo's management and governance as solid, reflecting management's track record of strong strategy execution, as well as board independence.	**U.K.**	**Rocco Semerano**
Fufeng Group Ltd. (BBB-/Stable/--) The Chinese government has strengthened regulations to reduce the environmental impact from exhaust, sewage, hazardous waste, and smoke from manufacturing companies. Corn-processing companies are subject to increasingly stringent regulation when it comes to carbon and waste-water emissions. Fufeng meets the disposal standard of sewage, exhaust, and solid waste discharge and disposal. We estimate less than 5% of production volume losses in 2018 were driven by an industrywide production halt and inspection by the government. We believe Fufeng has stronger compliance with environmental regulation than peers. Our base case forecasts capital expenditures (capex) of RMB400 million for exhaust treatment facilities and other production facility upgrades in 2019, out of our total capex forecast of RMB1.3 billion–RMB 1.5 billion. Free operating cash flow will remain slightly positive in this case. Although unlikely, if environmental regulations tighten materially beyond our base case, it might interrupt Fufeng's production and hurt its cash flow and access to credit markets. We assess Fufeng's management and governance as fair, reflecting management's expertise, depth, and breadth and its good strategic positioning, which offsets somewhat weaker board effectiveness following the recent departures of independent directors. Social factors do not play a major role in our rating on Fufeng.	**China**	**Polly Ng**
General Mills Inc. (BBB/Stable/A-2) We don't currently believe ESG factors materially influence General Mill's credit quality. To meet changes in consumer	**U.S.**	**Amanda O'Neill**

tastes and preferences related to health concerns, the company has reduced the sugar content in its cereals, offering gluten-free products and eliminating high fructose corn syrup. Additionally, General Mills has successfully acquired organic brands such as Annie's to offer consumers healthier products made with real ingredients. The company continues to focus on making portfolio changes toward healthier products, which we believe helps its competitive position.

Grupo Bimbo S.A.B. de C.V. (BBB/Negative/--)	**Mexico**	**Juan Camilo Alvarez**

Bimbo has been increasingly aware that investing in innovation can yield competitive advantages and increase its operating margins, as well as improve its reputation and branding. The company aims to reduce its carbon, water, and waste footprints. In addition, Bimbo has been continuously incorporating new technologies into its operations to better use energy resources worldwide. For example, the company developed the Piedra Larga Wind Farm, one of the largest wind farms in the global food industry, which supplies clean energy to most of its operations in Mexico, lowering carbon dioxide emissions and strengthening the company's profitability and credit metrics. Social factors are also an ongoing risk because of growing health concerns around products with high levels of sugar or sweeteners. Bimbo is constantly improving its portfolio's nutritional profile given shifting trends toward dieting and healthier eating, which gives it competitive advantages against smaller players in the industry and propels its top-line growth. We assess Bimbo's management as fair, reflecting solid experience integrating acquisitions worldwide and a strong commitment to deleveraging following large transactions.

Heineken N.V. (BBB+/Stable/A-2)	**Netherlands**	**Barbara Castellano**

Environmental and social factors are embedded in our analysis but aren't currently material rating drivers. We see social factors as more relevant given the exposure to risks from alcohol abuse. Heineken maintains a clear commitment to support, through various projects in different countries, responsible beer consumption and road safety and to fight underage drinking. Heineken is also promoting the Heineken 0.0 zero alcohol beer as a safe alternative to traditional beer Heineken invests 10% of the Heineken brand media budget in dedicated responsible consumption campaigns in all its markets. We view Heineken's management and governance as solid, reflecting the consistency between the targets and the executed strategies, the clear rules on governance and board independence.

Herbalife Nutrition Ltd. (B+/Positive/--)	**U.S.**	**Gerald Phelan**

Social and governance factors are material credit considerations for direct marketers like Herbalife. Reputational risks can arise primarily from allegations that the direct seller operates a pyramid scheme, or that it targets certain lower income demographic groups, including through distributor statements pertaining to income potential. Herbalife has faced several allegations and investigations, including pyramid scheme allegations by a hedge fund manager, an unresolved uncertified 2017 Florida class action suit, potential violations of the Foreign Corrupt Practices Act, and an investigation by the Department of Justice and Securities and Exchange Commission (particularly with respect to China), and a Federal Trade Commission investigation resulting in a $200 million settlement and Herbalife agreeing to implement changes to its business in the U.S., which an independent compliance auditor is monitoring until 2023. We believe risks from controversies like these still exist, but have declined since the 2012–2017 period. Separately, Herbalife's Belgian subsidiary prevailed in pyramid-related litigation in 2013. With respect to its international business practices, Herbalife's CEO voluntarily resigned in January 2019 due to comments he made before becoming CEO that were inconsistent with the company's expense policies and business practices. These comments could heighten scrutiny by government authorities and risks, especially if a pattern of abuse is uncovered in foreign countries.

Japan Tobacco Inc. (AA-/Negative/A-1+)	**Japan**	**Machiko Amano**

We believe social factors are significant credit considerations for JT given the widespread awareness of smoking's adverse health effects and the impact on healthcare costs and resources globally, as well as concerns over illicit trade. Greater health consciousness among consumers and more regulatory requirements could lessen demand for tobacco products, which may hurt JT's operating results. Illegal trade harms both consumers and the brand image of genuine products because uncontrolled products circumvent regulations and quality. JT tries to address social concerns by increasing reduced-risk products (RRP). In 2018, RRP contributed to 3% of JT's revenues, and we expect them to reach 7% in 2020. However, we don't necessarily believe that a larger mix of RRP would lower social risks because no regulator publicly corroborates RRP's modified risk profile since there isn't enough empirical data to support it. JT's anti-illicit trade team has been trying to combat illicit trade. Notified seizures of counterfeit products in the EU have increased 82% over the past four years, while notified seizures of JT's genuine products in the EU decreased 57%. In 2018, the team advised 1,329 law enforcement officers on counterfeit recognition, with over 2.775 billion illegal cigarettes seized. Exposures to environmental factors are less relevant for JT. JT takes measures toward effective waste management and disposal of electronic products contained in T-vapor and e-cigarettes.

Kellogg Co. (BBB/Stable/A-2)	**U.S.**	**Amanda O'Neill**

We don't currently believe ESG factors materially influence Kellogg's credit quality. To meet changes in consumer tastes and preferences around health concerns, the company has rebalanced its legacy breakfast cereal, toaster pastries, and frozen waffle portfolio since demand has declined for highly processed and high sugar content foods. Kellogg has tried to lower the ingredient lists in its products and acquire products that are considered healthier. The company's recent acquisition of RXBAR® and its further expansion into kids' bars is favorable as they have higher revenue growth potential than some legacy Kellogg's products. Kellogg's governance is relevant to our analysis because nearly 20% of the company is owned by the W.K. Kellogg Foundation Trust and two of the 12 board of directors are members of the W.K Kellogg Foundation Board of Trustees. However, no specific governance risks affect our ratings on Kellogg because the company's financial policy has consistently maintained leverage in the 3.5x-4.0x range. There have also not been signs of misalignment among the company and foundation's strategic and financial goals.

L'Oreal S.A. (--/--/A-1+)	**France**	**Nicolas Baudouin/Rocco Semerano**

We believe that environmental and social risks are relatively modest for L'Oréal from a credit standpoint. Still, given the nature of L'Oréal's products and its large and global presence, the company is exposed to global concerns including resource sustainability, general environmental practices, and diversity and inclusion in the workplace. One of the most significant long-term social risks comes from potential reputational damage, for example if consumers become concerned about the health risks of certain products (especially for products with direct contact to skin, such as makeup and skincare products, which represented about 58% of company sales 2018). So far the group hasn't reported any significant reputational incidents and the company is very cognizant of these concerns. L'Oréal spends about 3.4% of its annual sales in research and development (R&D) and it's now investing in the dermocosmetics segment (in 2017 the company acquired U.S. brand CeraVe for $1.3 billion), which emphasizes both health and beauty. We view L'Oréal's management and governance as solid, reflecting management's track record of strong strategy execution and board independence.

McCormick & Co. Inc. (BBB/Stable/A-2)	**U.S.**	**Amanda O'Neill**

McCormick, like most packaged goods companies, is adapting to changing consumer tastes and preferences around health. Millennials and younger generations are increasingly focused on where food products are sourced from, their environmental impact, and the company's philanthropic values. Smaller, challenger brands have gained popularity by differentiating themselves through sustainable product sourcing and how they give back to communities to connect with these demographics. This has caused McCormick and larger consumer product companies to face top-line pressures as they lose share to these smaller brands. McCormick has responded by diversifying its portfolio. The company purchased Reckitt Benckiser Group PLC's food division to bolster its market position in the sauces category and improve its operating margins. The acquisition also increased financial risk as it substantially increased debt leverage. Management has prioritized debt repayment and brought leverage down, and we believe the company will continue to restore its balance sheet. The company is also launching a new marketing campaign in 2019 that directly links its products to sustainable practices.

Nestlé S.A. (AA-/Stable/A-1+)	**Switzerland**	**Maxime Puget**

Nestlé has moderate exposure to ESG factors like plastic packaging waste, water scarcity, and food safety. Food safety issues can have an immediate, high impact on a particular brand and regional market. Demand for a product/brand could drop sharply if consumers no longer trust product quality, while traceability is becoming an increasingly important factor in consumer purchases. In April 2015, a government laboratory in India said it had detected lead levels above permissible limits, as well as MSG in a sample of Nestlé's Maggi noodles. Nestlé India and other independent accredited laboratories subsequently performed several tests showing the product was safe. Given growing consumer confusion, Nestlé India temporarily stopped selling Maggi noodles in June 2015 until the situation was resolved. In November 2015, Maggi noodles returned to shelves, and Nestlé avoided long-term reputational damage.For packaging waste, governments could enforce more stringent recycling rules, which would mean higher operating costs if Nestlé has to pay to collect and recycle waste. To tackle this, Nestlé committed to make 100% of its plastic packaging recyclable or reusable by 2025. It also plans to eliminate nonrecyclable plastics. Nestlé utilizes large quantities of water to bottle beverages and water. Given greater water scarcity in many regions, Nestlé could have higher operating costs to source water. We view Nestlé's management and governance as strong, reflecting management's ability to grow profitably and the board's balanced composition. Gender diversity is also a focus for Nestlé; women hold about 43% of management roles. The company aims for women to hold 30% of the top 200 senior management roles by 2022, versus 20% currently.

Newell Brands Inc. (BBB-/Negative/A-3)	**U.S.**	**Mariola Borysiak**

Governance is an important near-term rating factor for Newell because of strategy shifts and management turnover. Over the past few years, Newell has pursued acquisitions to accelerate growth. In 2016, it significantly levered up its balance sheet to merge with Jarden Corp. While the acquisition was supposed to complement Newell's existing brand portfolio and help expand its global reach, it led to overly complex and inefficient operations. As a result, Newell announced in 2018 that it plans to exit non-strategic assets in order to simplify its operations and focus on consume-branded and more profitable segments. The company's management team and the board have been committed to an investment-grade rating and repaid about $3.5 billion of debt in fiscal 2018 using most of the proceeds from the asset sale. However, after replacing its chief financial officer in 2018, the company recently announced that its CEO will retire mid-2019. This creates uncertainty whether new leadership will maintain its commitment to deleveraging. Our rating on the company heavily relies on asset sale proceeds to reduce outstanding debt and bring leverage below 4x.

PepsiCo Inc. (A+/Stable/A-1)	**U.S.**	**Chris Johnson**

PepsiCo is adapting to changing consumer tastes in its beverage business away from traditional carbonated soft drinks and managing its products' sugar, salt, and saturated fat content as governments seek to curb sugar and fatty food consumption to combat obesity and heart disease. PepsiCo's overall portfolio exposure to the ongoing decline in developed market demand for carbonated soft drinks is less pronounced than other beverage peers primarily because of its large snack business, but also because it was ahead of its competitors in diversifying its beverage business. PepsiCo's portfolio includes products with high sugar content, saturated fats, and salt, which can be hit by targeted taxation to dissuade supposed unhealthy consumption. So far, sugary products have been targeted more than salty snacks, and overall these taxes do modestly curb total consumption. Pepsi has been reducing these less healthy ingredients with clearly defined targets. A key environmental factor in the rating is Pepsi's efforts to reduce carbon by increasing the recycled content of its packaging. Pepsi's packaging primarily consists of aluminum and plastics. To combat pollution and greenhouse gas emissions it is converting to fully recyclable or biodegradable packaging. These goals are part of its long-term capex plans, which together with ongoing cost efficiency initiatives should ensure that EBITDA margins remain in the 20% range.

Philip Morris International (A/Stable/A-1) | **U.S.** | **Barbara Castellano**

PMI is exposed to significant social risk factors that can hurt the rating, largely related to traditional tobacco products' harmful health effects. Cigarette sales have consistently declined in the past several years thanks to increased awareness of potential risks, more stringent regulations on tobacco sales, and the availability of e-cigarettes and heated tobacco products. So far, this has not significantly affected PMI's credit profile as lower volume is fully offset by prices increases. To cope with this negative trend and to address the adverse effects on public health, PMI has redefined its business strategy and proposed replacing cigarettes with smoke-free products, which we see as an ambitious target. The group has heavily invested in "heat not burn" technology, able to precisely control temperatures and avoid combustion. By avoiding combustion, it reduces or eliminates the formation of harmful and potentially harmful constituents, which public health authorities have classified as the likely causes of smoking-related diseases. There is general agreement that non-combustible products are less damaging than traditional combustible cigarettes; however, so far no regulator has officially validated this perception due to the lack of sufficient evidence. Among the tobacco producers, PMI has invested the most in smoke-free products, with sales of about 13.8% of 2018 total net revenues (net of excise taxes), while BAT, the second-largest player, achieved 4%. Due to adverse health effects, PMI and other tobacco companies are facing numerous litigations in different countries and the definition of these processes might affect ratings. Environmental factors pose few risks, in our view. Tobacco is a natural product and protecting the supply chain and maintaining high quality standards are important.

Reckitt Benckiser PLC (A-/Stable/A-2) | **U.K.** | **Barbara Castellano**

We don't see environmental risks as specific drivers for the rating on Reckitt Benckiser because we believe it's modestly in line with the other hygiene and personal care companies, but it has faced social risks due to a serious accident. Between 1996 and 2011, in South Korea Reckitt Benckiser sold humidifier sanitizers that had negative effects on lungs that were, according to local courts, ultimately responsible for about 100 deaths. In 2016, Reckitt Benckiser took responsibility and publicly apologized. Although the costs associated with this incident have not threatened the rating, we believe that it has had a very serious reputational effect that hurt the group's sales and activities in South Korea. We believe that today Reckitt Benckiser has a more solid framework to prevent similar accidents from happening. We view Reckitt Benckiser's management and governance as solid. A change in CEO was recently announced and a new CEO will be appointed shortly, which we believe is part of the normal cycle of management renewal. Board composition is balanced and there are clear governance rules.

ServiceMaster Global Holdings Inc. (BB-/Stable/--) | **U.S.** | **Suyun Qu**

The company is exposed to environmental and legal risks in its operations. The company sprays pesticides around household premises to control for pests, and the chemicals could be harmful to the environment or public health. The company's use of pesticides is governed by various international, federal, and local environmental and public health agencies, so it could be affected if regional or global regulations change. In addition, incidents related to chemicals can affect the company's reputation. The company had two civil litigations in 2016 with sizable monetary fines, which resulted from harming residents surrounding a job site. The company had enough liquidity to handle the situations proactively, with no material impact on its operations or credit metrics, and because the cases were local, they didn't hurt overall sales. However, to prevent such events from occurring again, the company has implemented a companywide health and safety initiative to support its operations.

Shandong Ruyi Technology Group Co. Ltd (B/Stable/-) | **China** | **Sophie Lin**

We consider environmental factors as ongoing moderate risks for Ruyi. China's textile industry has been one of the largest polluters in terms of water pollution and carbon emissions. The Chinese government has strengthened regulations to reduce the environmental impact from waste that is discharged by manufacturing companies. Tighter environmental regulations may increase textile manufacturers' production costs, constrain production volume, and increase capital spending on technology upgrades. That said, as one of the largest textile manufacturers in China, Ruyi is in a relatively better position to manage these risks given its more advanced technology and earlier adoption of higher emissions standards compared to smaller textile companies. Downward rating pressure could arise if more events indicate deficiencies in Ruyi's management and governance. In our view, the company lacks sufficient disclosure and transparency regarding communication with investors, and it doesn't have a comprehensive risk management framework.

Sigma Alimentos S.A. de C.V. (BBB/Stable/--) We believe social factors such as food processing safety methods and a strategy shift toward a value-added nutritional portfolio are key in our rating analysis for Sigma. Sigma continues to invest heavily in R&D to anticipate long-term market trends. Since 2010, it has improved over 410 products' nutritional profiles (reducing sodium, sugar, and fat content), adapting to new consumer trends. In 2017, Sigma invested more than $20.2 million dollars in R&D, including health and nutritional initiatives (about 10% of total capex). Food products are prone to disease outbreaks. Sigma has had limited product recalls and disease issues in its food supply because it has strict standards that guarantee product quality and safety. International certifications include the U.S. Department of Agriculture (USDA) and the Global Food Safety Initiative. Over the medium term, we do not expect that environmental factors will affect Sigma's credit quality. Sigma continues to reduce its fossil fuels and carbon-based electricity consumption by shifting to cleaner energy such as cogeneration and wind power. It reduced 20,800 tons of carbon dioxide in 2017 compared to 2016, despite increasing production by 1%. Moreover, approximately 81% of the electricity required at its Mexican plants comes from cleaner energy sources, including wind power, cogeneration and combined cycle. We assess Sigma's management and governance as satisfactory, reflecting management's expertise in the industry and a growth strategy consistent with the company's capabilities.	**Mexico**	**Alexandre Michel**
Suntory Holdings (BBB/Stable/-) ESG risks are currently not major rating drivers for Suntory. Regarding social risks, Suntory's operations are somewhat susceptible to rapidly changing consumer tastes. Some are arising from demographic changes; for example, Japan's beer market by volume has shrank 14 years in a row due to changing consumer preference and rising health awareness amid an aging population. Despite these challenges, Suntory has demonstrated steady earnings over time by expanding its market shares in both domestic soft and alcohol drinks markets. We believe management has mitigated these risk factors with appropriate product development and marketing initiatives. Environmental risks are less relevant, in our view. There are direct and indirect long-term risks such as water availability, agricultural production, and the global anti-plastic movement. The group has increased its usage of recycled PET bottles and preservation of forests with more than 20 natural water sanctuaries, creating a sustainable supply of its beverage products such as mineral water.	**Japan**	**Ryohei Yoshida**
The Coca-Cola Co. (BBB/Stable/--) Changing consumer tastes away from traditional carbonated soft drinks and efforts to reduce the sugar content of beverages as governments seek to combat obesity has reduced demand for sugary soft drinks. In response to these social changes, Coke continues to invest heavily in diversifying its portfolio to offset declining demand in the U.S. and Western Europe away from carbonated soft drink consumption to categories like premium water, sports, energy and coffee. This strategy has yielded better-than-industry-average organic sales growth and improved its portfolio mix toward faster-growing, more socially acceptable offerings. Coke so far has not been materially affected by government efforts to curb sugar consumption via taxation. These efforts tend to only temporarily reduce sales and consumption by large amounts, which typically rebound closer to historical levels once the full-year impact of the tax gets lapped. For example, Mexico enacted a sugar tax in 2014 and consumption did fall the next year, but stabilized thereafter. The most recent government to levy a sugar tax was the U.K. last year. Coke's ongoing strategy of lowering sugar content via product diversification while reducing serving sizes and increasing prices more than offset this impact. The global anti-plastic movement is an inherent environmental risk. Coke is focusing on fully using recycled products to manufacture its packaging to reduce its carbon footprint and energy usage. The modest capex requirements and cost savings of increasing recycled inputs should not compromise Coke's strong free cash flow generation.	**U.S.**	**Chris Johnson**
The Scotts Miracle-Gro Co. (BB/Negative/--) Scotts' business includes processing and marketing pesticides and fertilizers, which contain chemicals that may have or be perceived to have environment or public health effects. Scotts is Monsanto Co.'s exclusive agent for marketing and distributing its consumer Roundup non-selective weed killer products, primarily in the U.S. We believe consumer demand for Roundup (about 15% of Scotts' EBITDA) could decline due to litigation against Monsanto alleging primarily that glyphosate (the active ingredient in Roundup) causes cancer. To provide customers with more options, Scotts has introduced Ortho GroundClear, a non-selective weed killer certified for use in organic gardens. Our rating on Scotts assumes it will remain free of direct litigation pertaining to Roundup. The company's strategy has included expanding, primarily through acquisitions, into hydroponic gardening, including manufacturing and selling nutrients, growing media, advanced indoor garden, lighting, and ventilation systems. While Scotts does not sell cannabis, its products can be used to grow cannabis. We continue to believe that a measured investment in this potentially large category makes sense given favorable social and regulatory trends (including increased state and county regulatory acceptance). However, growing cannabis is still prohibited under U.S. law and in certain states, regulations in jurisdictions where cannabis has been approved for medicinal and/or recreational use vary, and demand is likely to be inconsistent over the near to medium term, as recently seen in California.	**U.S.**	**Gerald Phelan**
Unilever PLC (A+/Stable/A-1) We don't currently believe environmental and social factors have a material impact on the rating on Unilever. It's exposed to several factors including resource sustainability, health, pollution, and waste management. We believe that among	**U.K.**	**Barbara Castellano**

the environmental risks, widespread usage of plastic packaging exposes Unilever to sudden regulatory pressure that means it and the broader industry bear the cost of moving to more sustainable solutions. In 2017, Unilever committed that, by 2025, all its plastic packaging will be reusable, recyclable, or compostable and at least 25% of it will come from recycled plastic content. Unilever also launched its Sustainable Living Plan in 2010 indicating very clear sustainability targets. In the social area, Unilever faces issues of increasing obesity in mature countries and still insufficient caloric intake in some emerging markets, sustainable and reducing the environmental impact of raw materials. Reputational damage from quality problems on a specific product is the most relevant risk for credit metrics, but the company's track record is solid and there have been no major incidents. We view Unilever's management and governance as solid, reflecting management's experience and expertise, favorable planning processes, and board independence.		
Wolverine World Wide Inc. (BB+/Stable/--)	**U.S.**	**Suyun Qu**
Footwear and apparel manufacturer Wolverine World Wide is exposed to modest environmental and regulatory risk in its operations. It currently has multiple litigation cases open relating to the use of 3M's Scotchgard at its former U.S. leather tannery, which is alleged to have affected nearby groundwater. We do not assume further material expenses as the tannery is closed and management estimates the current reserve should be sufficient to cover remediation. However, the litigation processes are often uncertain, and any significant increase in its remediation or settlement expenses could pressure the company's credit metrics and cash reserves. Environmental concerns in this industry are also often long term, as evidenced by the remediation efforts around the tannery activities that occurred from the late 1950s to 2002.		

ESG Risks In Agribusiness

Table 2

Company/Rating/Comments	Country	Analyst
Archer Daniels Midland Co. (A/Stable/A-1)	**U.S.**	**Chris Johnson**
Weather is an ongoing environmental factor for ADM that affects profits. Weather disruptions, particularly droughts, appear to be more frequent due to global warming and can lead to wide swings in profits (at times favorably). We assess grain processors like ADM's financial metrics more conservatively to account for this volatility. ADM also has a larger biofuel exposure. Its earnings had, for several years, benefited from the USDA's renewable fuels standards, which promoted biofuel production. However, margins are under pressure because U.S. ethanol production now exceeds domestic demand, partly because production mandates are too high. Moreover, lower oil prices and recent regulatory waivers granted to producers that don't comply with production mandates have squeezed margins. We believe these factors will continue to pressure U.S. ethanol margins, and view ADM's large biofuels footprint as a drag on the strength of its otherwise well-diversified business. A less relevant, but important social factor for ADM is its ongoing commitment to build out its Nutrition segment as consumers and societies become more health conscious. We continue to view ADM's food and ingredients exposure as modest compared to its overall portfolio, representing about 15% of consolidated segment earnings in 2018, up from less than 5% five years ago. Although still modest, these investments have largely offset underperformance in its ethanol business. We have a satisfactory view of ADM's governance, including its balanced approach to managing shareholder returns and growth investments while keeping leverage modest, including debt to EBITDA under 2x during normal earnings cycles.		
BRF (BB-/Stable/--)	**Brazil**	**Victor Nomiyama**
Governance issues have hit BRF's operating performance heavily following allegations of bribery and food safety breaches at its meat processing plants, which are under investigation. This led to some of its plants being shut down temporarily and more export restrictions. The company also faced other management and governance deficiencies, including a lack of strategic focus given substantial shareholder disputes and significant senior management turnover. We lowered our management and government assessment to fair following those events. Although the weaker governance assessment didn't directly lead to a downgrade, several environmental and social factors have hurt the rating, including higher feed input costs after a weak corn harvest in 2016 and 2018, and several investigation-related costs such as export bans from key regions, higher legal costs, and a damaged reputation. In 2017 and 2018, BRF suffered about R$1.2 billion (roughly 35% of our 2019 forecast EBITDA) in incremental expenses and losses related to food safety investigations, export restrictions, and a national truck driver strike in Brazil. The higher volatility and escalating leverage caused by these social and environmental factors led us to lower the rating by four notches over the past two years. We now see a stronger alignment between shareholders and management and a more conservative financial strategy to quickly deleverage. However, future investigations over operational safety or additional export restrictions could cause divergence from deleveraging plans and possibly pressure on the rating.		
Bright Food (Group) Co. Ltd. (BBB/Stable/--)	**China**	**Polly Ng**
The key social factors in our rating analysis for Bright Food are its food safety control measures given its position as one of China's largest dairy product and commodity food manufacturers. Dairy products, livestock, and packaged meat products are prone to disease outbreaks (e.g., avian flu in poultry or foot-and-mouth disease in cattle). Contaminated products can disrupt a company's food production and lead to material earnings decline and litigation risk, such as the melamine milk powder crisis in 2008. Since		

then, Bright Food Group has implemented stringent controls on product safety by establishing daily plant sanitization, cow immunization and quarantine, and daily fresh milk quality inspections. As such, the company has not suffered any product recalls that materially affected its earnings or hurt its reputation over the past five years. Tighter environmental regulation in China prompted the company to close 17 subscale dairy farms by 2016. Its remaining 32 dairy farms strictly adhere to high international standards. Given dairy farming's small revenue contribution (about 2% of total revenue), we believe the closures won't materially affect the company's cash flows or credit measures. Governance factors are neutral for Bright Food because it's 100% owned by the Shanghai government and closely supervised by Shanghai's State-Owned Assets Supervision and Administration Commission of the State Council. Despite that, the company's managers have strong industry expertise. We attributes the company's less than optimal operating efficiency partly to policy constraints.

Bunge Ltd. (BBB/Negative)	**U.S.**	**Chris Johnson**

Governance is an important near-term rating factor for Bunge. The company is undergoing a strategic review following a cooperation agreement signed in October 2018 with activist investor Continental Grain Corp. So far, the company has appointed four new board members and formed a strategic review committee. These developments provide uncertainty over the company's future direction and suggest additional change is likely in the near term. Weather is an ongoing environmental factor for Bunge and its peers that regularly affects near-term profit prospects. Weather disruptions, particularly droughts, appear to be more frequent due to global warming, and can lead to wide swings in profitability. We assess Bunge's financial metrics more conservatively to account for this volatility. Other long-term environmental factors include land preservation and reducing water use, for which Bunge has established prudent long-term goals to ensure sustainability. These include reducing water consumption in industrial activities by 10% by 2026 and increasing supply chain traceability to farms that do not contribute to deforestation. Although less relevant, a social factor for Bunge is its drive to expand into more value-added ingredient offerings in response to consumers and societies becoming more health conscious. Although last year's acquisition of Loders Croklaan expanded Bunge's offerings into value-added palm-based oils and fat offerings in bakery, confectionary, and infant nutrition, Bunge's food and ingredient business remains concentrated in more commodity business-like edible oils (which get consumed less as societies become wealthier) and wheat milling, which is less health-conscious.

Cargill Inc. (A/Stable/A-1)	**U.S.**	**Chris Johnson**

Increasingly important environmental factors for Cargill include reducing water use and land scarcity to ensure sustainability. To this end, Cargill has long-term goals to no longer source crops from farms that contribute to deforestation. Still, near-term environmental factors factor more heavily on the rating, particularly the impact of weather on earnings volatility. We assess Cargill's financial metrics more conservatively to account for this volatility. The most recent weather-related earnings shortfall that pressured the rating was back-to-back droughts in Texas in 2012 and 2013, which reduced cattle supplies and depressed Cargill's EBITDA by nearly 20%. We believe this level of volatility will continue to affect Cargill's earnings, but its overall geographic and product diversification adequately mitigates this risk. Although less relevant, an important social factor for Cargill is the need to further develop healthier food ingredients as consumers and societies become more health conscious. Cargill's food and ingredients segment is well positioned to benefit given its strong relationships with food companies, but is facing more competition. Rivals like ADM have made several acquisitions in this space, while Cargill has taken a more measured approach by emphasizing growth across multiple areas of its much broader portfolio. Although competition has increased, we continue to view Cargill's business favorably compared with its peers given its broader diversification. Cargill is a family-owned company controlled by the Cargill and MacMillan families. Given the company's low appetite for debt leverage and modest dividend policy, we view Cargill's governance as satisfactory.

Fonterra Co-operative Group Ltd. (A-/Stable/A-2)	**New Zealand**	**Graeme Ferguson**

We believe that Fonterra successfully leverages New Zealand's "clean-green" image and manages environmental risks and increasingly stringent regulations inherent within the agriculture and commodity foods industry. Fonterra has a significant environmental footprint amid increasing scrutiny around greenhouse gas emissions generated by cows, health and biodiversity of land and waterways, farming efficiencies, and sustainability, as well as managing waste discharge. Failure to maintain strict safety and operational measures can harm consumers and result in significant damages and reputational consequences. Underscoring the importance of this was the WPC80 botulism scare in 2013 that resulted in mass precautionary product recalls by Fonterra and affected customers, claims from affected customers, and the payment of significant damages to Danone per an arbitration decision on Danone's claims against Fonterra. Animal health and biosecurity are treated seriously, as highlighted by the company's response to "mycoplasma bovis" bacteria detected in the Canterbury region in 2017. We believe that Fonterra is working with shareholder farmers to proactively address environmental factors. Many of the measures require significant capital outlay that may financially pressure the cooperative and its shareholder farmers. In our view, upstream environmental factors weigh on volume growth, which affect the throughput and operating efficiency of downstream processing plants. In our opinion, Fonterra recognizes the business' social responsibility to the wider dairy farming community. In addition, the Dairy Industry Restructuring Act (DIRA) seeks to appropriately balance the interests of various stakeholders in New Zealand's dairy industry. A comprehensive review of DIRA is underway. Fonterra's cooperative structure introduces an additional layer of complexity to its governance and its management faces close scrutiny over its performance.

Gruma S.A.B. de C.V. (BBB/Stable--)	**Mexico**	**Juan Camilo Alvarez**

Environmental considerations factor more heavily for Gruma. The company actively seeks and obtains various certifications that credit it as an environmentally responsible company, proving its commitment to sustainability within the communities where it operates and to the environment. The company continues to invest in more carbon-efficient manufacturing equipment and in developing processes to improve production. In addition it's committed to reducing water use and waste management. Although somewhat less impactful to the rating, Gruma is very active with its social activities. Gruma supports Mexican communities in need, promoting the involvement of human capital through education and investment in professional development to achieve better employment while meeting its production needs. To this end, Gruma supports competitiveness in the value chain by investing in local Mexican suppliers, by fostering continued collaboration with Mexican farmers in special projects (hybrid corn, for example), and by managing post-harvest marketing initiatives with farmers including investing together in storage capabilities and other projects. Based on these initiatives, we believe Gruma is well positioned to continue developing a skilled workforce more effectively than most of its competitors. We view Gruma's management and governance as satisfactory, reflecting management's experience and expertise and favorable planning processes that have resulted in strong financial and operational performance.

JBS S.A. (BB-/Positive/--) **Brazil** **Luisa Vilhena**

Governance continues to weigh on the rating on JBS. A corruption scandal implicating JBS' then-Chairman Joesley Batista and CEO Wesley Batista that unfolded in May 2017 exposed JBS' inability to deploy good risk tolerance and controls to prevent wrongdoing and protect outside stakeholders from decisions that benefitted the Batista brothers and their companies. Weak governance also led to significant refinancing risks, which JBS eventually shored up last year. With the Batista brothers no longer at the helm, JBS has implemented several compliance policies and initiatives to improve governance and transparency. Although its governance track record is still too limited to determine the effectiveness of these initiatives, its declining leverage supports a positive outlook. Food safety and the traceability of livestock supplies are key social and environmental considerations that JBS has been addressing following several food safety investigations in its core Brazilian market, which implicated some of its plants and staff. To address these missteps, the company has appointed a global quality and food safety director and is focused on improving safety compliance standards with the intent of becoming a global reference for food quality and safety. Limiting disease-related supply disruptions is another important environmental consideration for JBS. As a global leader in the protein industry, JBS has a well-diversified asset base, with several plants across all continents that mitigate the risk of disease-related supply disruptions. For instance, when the last avian flu hit several local producers, JBS was able to export its production from countries that were free from the disease.

Marfrig Global Foods S.A. (BB-/Stable/--) **Brazil** **Victor Nomiyama**

Environmental risks are important rating factors for beef processor Marfrig. The company is susceptible to animal disease outbreaks and food contamination (e.g. foot-and-mouth disease for cattle), which can substantially impair earnings due to export restrictions, product recalls, penalties, and reputational risks. Marfrig continue to effectively mitigate these risks by having its units audited by regulatory agencies, by having all of its production cycle traceable, and by spreading its slaughtering operations across four different regions. Marfrig's operations are in both the U.S. and South America. JBS has the highest diversification in the sector, with operations on all continents, Minerva's capacity is distributed across five countries in South America, and BRF and Tyson Foods are more concentrated in a single region, Brazil and the U.S., respectively. As a result, Marfrig has not suffered any recent material effects from social and environmental risks. Social and governance factors have also been more pronounced for meat processors in Brazil due to federal policy investigations since March 2017 on safety evasion practices and regulatory breaches. Unlike some peers, Marfrig was not severely affected by those investigations as its name was not directly mentioned in any of the purported safety breaches. Therefore, we view Marfrig's governance comparably to other peers that were caught up in the scandal.

Minerva S.A. (BB-/Stable/--) **Brazil** **Victor Nomiyama**

Social and governance risk both factor heavily in the Brazilian protein sector following a federal police investigation started in March 2017 on bribery accusations and charges of illegal food safety evasion practices. The scandal has resulted in export bans to certain markets and operating underperformance for some players in the past two years. However, Minerva has remained fairly isolated from any fallout because its senior management was not directly involved in those investigations and the company was able to reroute a portion of its production to units outside Brazil, reducing the impact from the temporary embargoes. Livestock producer and protein processor Minerva also remains exposed to key environmental risks such as disease and food contamination, which can lead to severe and prolonged losses stemming from export restrictions, litigation, and reputational risks. To mitigate these risks all of Minerva's units are inspected by the federal regulatory agency and 100% of its production is traceable. Moreover, Minerva's slaughtering operations are spread across five different countries in South America and across 25 plants, which contain the risk of any disease outbreak while partially offsetting its still-heavy concentration in Brazil, where just under 40% of its production capacity is located across seven states and 11 plants.

Raizen (BBB-/Stable/--) **Brazil** **Victor Nomiyama**

Weather is crucial for the ethanol and sugar sector because it directly affects crop productivity. In fiscal 2019 (ended in March 2019), because of the dry weather conditions in Brazil's Center-South region, Raízen's crushing level reached 60 million tons versus our initial expectation of 64 million, hurting revenues and profitability. Global weather conditions also play a larger role in sugar price volatility, as seen in the 2016-17 season when India's output fell by 20%, pushing prices up by up to 30%, and then in the following year, prices plummeted by 30%, mainly due to record production also in India. Raizen managed this by focusing on agricultural yields, pushing its production mix toward ethanol, and by an assertive hedging strategy, both of the international prices as the foreign exchange rates. Raízen's business is diversified in the fuel distribution industry, mitigating its exposure to the more volatile ethanol and sugar segment. Nonetheless, fuel prices are socially sensitive in Brazil, as public transportation isn't quite developed in large cities so commuting is typically by car. On top of that, goods are mostly transported by trucks and diesel price hikes hurt truck drivers' profitability. In June 2018, a 10-day truck driver strike occurred across the country against rising diesel prices. Because of it, in the first quarter of the 2019 fiscal year, Raizen's EBITDA per cubic meter dropped 25% from the previous quarter and total fuel demand in Brazil fell 4%, reflecting weaker economic activity. Nonetheless, due to its solid operating efficiency, recovering margins in the following quarters, and low leverage, we did not see an impact on the rating.

Tyson (BBB/Positive/--)	**U.S.**	**Chris Johnson**
Environmental factors are an important element of the rating on Tyson. Livestock production is prone to disease outbreaks, which can disrupt food production (including large product recalls) and possibly cause material earnings declines, litigation, and other penalties for not meeting regulatory standards. Tyson has historically minimized the effects of disease on in its food supply. In fact, it has not suffered any product recalls that materially affected its earnings or hurt its reputation because of its stringent on-farm raising standards, daily plant sanitization, and ongoing site inspections. Tyson has updated its business practices to meet changing consumer tastes and preferences. Animal raising practices, in particular nutrition and health monitoring practices, are critical as consumers gravitate toward antibiotic-free products. Today, the company raises more than 95% of its flock without antibiotics and complies with all regulatory limits on the use of hormones and steroids in its hog and cattle production. We also consider Tyson's governance in our rating analysis. Tyson continues to be controlled by members of the Tyson family, who have 71% control of the voting power of the company's outstanding voting stock. Despite this high level of control, we do not believe Tyson's governance unduly benefits the Tyson family over other stakeholders. Underpinning this opinion is the company's successful operating track record under mostly non-family professional management and its demonstrated history of adhering to its financial policy targets while executing its M&A-driven growth strategy.		

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 (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

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.

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.

This report does not constitute a rating action.

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