

SECTOR IN-DEPTH

10 June 2022



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ESG – Global

Social risk heat map: Updates to risk assessments for certain sectors

This report updates our [social risk heat map](#) to reflect changes in our assessment of the credit materiality of social risks for the sectors listed below following periodic reviews.

- » **Surface transportation and logistics' overall social risk moves to moderate from low**, as inherent exposure to demographic and societal trends risk moves to moderate from low. The sector faces growing societal pressure to reduce greenhouse gas emissions by investing in the electrification of trucking fleets and studying the use of alternative fuels for railroad locomotives.
- » **Homebuilding and property development's overall social risk moves to moderate from low**, as inherent exposure to customer relations, human capital and responsible production risk moves to moderate from low. Homebuilders possess a large amount of sensitive customer data, which exposes them to data security and privacy considerations. Land procurement and land use permitting leave homebuilders exposed to bribery and corruption issues.
- » **Trading companies' overall social risk moves to moderate from low**, as inherent exposure to health and safety, responsible production and demographic and societal trends risk moves to moderate from low. Trading companies rely on complex supply chains in transporting goods from exporting countries to importing countries. The sector faces growing exposure to product tracing requirements from consumers and customer goods companies.
- » **Education and not-for-profits' inherent exposure to demographic and societal trends risk moves to high from very high**. Declining numbers of high school/secondary school graduates in some regions and the changing profiles of students are pressuring higher education institutions to innovate and adapt. A growing focus on affordability is challenging resource-limited institutions to remain competitive. Changing consumer preferences are driving changes in business models and introducing new competition.

- » **Healthcare services - acute care and specialty services' inherent exposure to human capital risk moves to high from moderate, while inherent exposure to demographic and societal trends moves to high from very high.** The cost of employing proficient medical and healthcare specialists, physicians and nurses is relatively high and can be volatile. The ability to attract and retain healthcare workers is an important credit consideration because hospitals and nursing homes are highly labor intensive. While an aging population and an increase in chronic ailments drive greater demand for healthcare services, rising costs and lack of health insurance have become a more significant pain point for consumers.
- » **Technology services and software's inherent exposure to customer relations and human capital risk moves to moderate from high, while inherent exposure to demographic and societal trends moves to low from moderate.** Companies in the sector mitigate their exposure to customer relations risk with significant investments to bolster information security. While tech companies rely heavily on highly skilled engineers, their high operating profitability enables them to offer competitive compensation to attract technical talent. Tech companies also benefit from secular growth driven by the increasing adoption of information technology by enterprises and consumers.
- » **Business and consumer services' inherent exposure to customer relations risk moves to moderate from high, while inherent exposure to human capital risk moves to low from moderate.** Companies in the sector can mitigate exposure to customer relations risk by investing in sustained service quality and marketing and data protection tools. Issuers can pass through the cost of higher wages to customers. A tight labor market can support more outsourcing of noncore functions, which can boost demand for business and consumer services companies.
- » **Chemicals' inherent exposure to customer relations risk moves to low from moderate exposure.** Customer relations are largely business-to-business interactions. Many commodity chemicals are sold directly to downstream customers through pipelines or via tankers to ensure uninterrupted supplies. Chemical companies have stable – sometimes decades long – relationships with their customers.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on <https://ratings.moody.com> for the most updated credit rating action information and rating history.

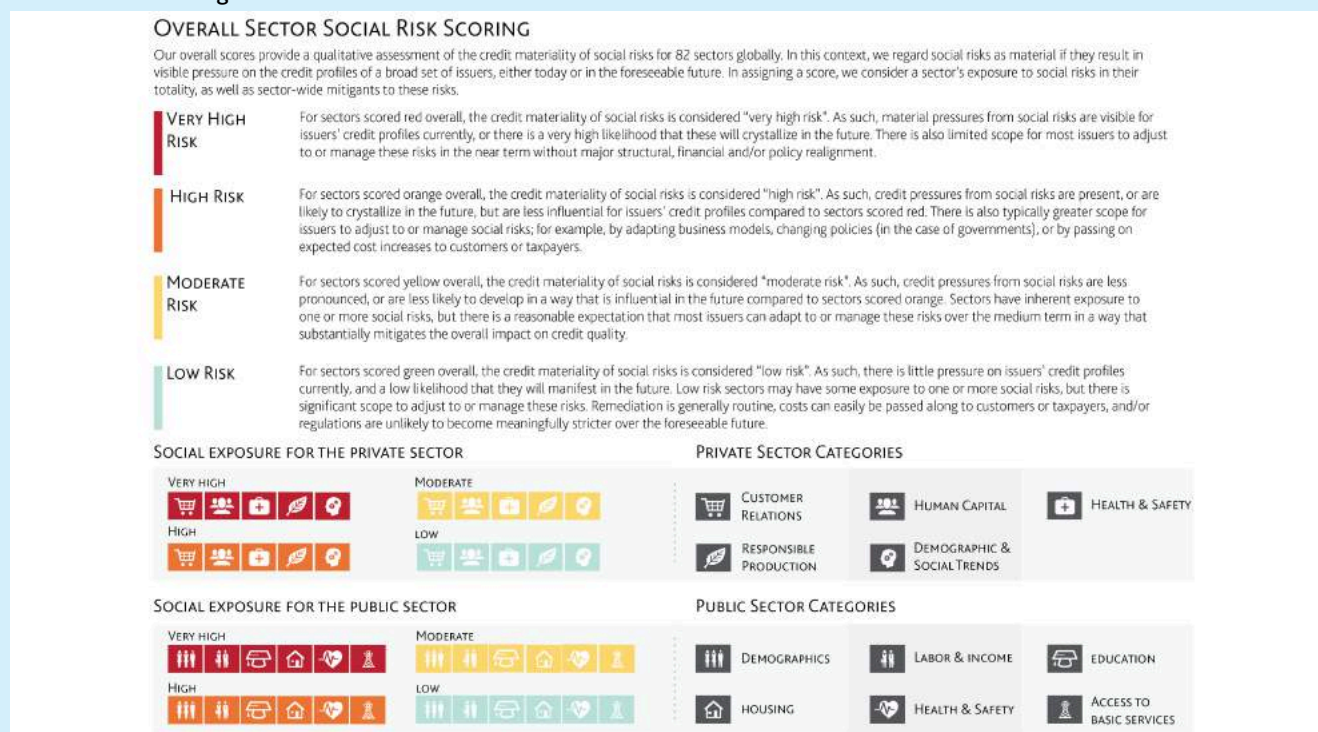
Assessing sector exposure to social risks: our approach

Our social risk heat map was developed by Moody's analytical teams and reviewed independently by our Credit Strategy and Standards and Environmental, Social and Governance groups. Our heat map provides a qualitative assessment of the overall credit materiality of social risks for each sector globally. We regard social risks as material if they result in visible pressure on the credit profiles of a broad set of issuers, either today or in the foreseeable future. In assigning an overall score, we considered a sector's exposure to social risks in their totality, as well as industrywide mitigants to these risks. Sector classifications are based on our rating methodologies and reflect only Moody's rated entities within a given sector.

To assess a sector's social credit risk, we first considered each sector's inherent (unmitigated) exposure to different categories of social risk and assigned a category score of very high, high, moderate or low to describe the sector's exposure to each risk category. We then took these category scores and any applicable sectorwide mitigating factors into consideration to assign an overall social risk credit score to each sector: very high risk, high risk, moderate risk or low risk (see Exhibit 1).

Exhibit 1

Our social risk scoring definitions



Source: Moody's Investors Service

The debt amounts reported in this publication represent the total face amount of debt publicly rated by Moody's in each sector as of June 2020. They include amounts for both long-term obligations and commercial paper. We allocate debt instruments to sectors on the basis of the primary methodology/methodologies used in the rating process. For debt rated under multiple methodologies that fall within different sectors, we evenly distribute the face amount to each sector accordingly.

Our social risk classifications for private and public sectors

Exhibit 2

Social considerations most relevant to private-sector issuers



Note: Subcategories are representative and not exhaustive. We use the private-sector social categories for business-like governmental entities, such as municipal utilities and mass transit enterprises.

Source: Moody's Investors Service

Exhibit 3

Social considerations most relevant to government issuers



Note: Subcategories are representative and not exhaustive. We use the private-sector social categories for business-like governmental entities, such as municipal utilities and mass transit enterprises.

Source: Moody's Investors Service

Heat map sector index

Exhibit 4

Sectors listed alphabetically with overall social risk score and commentary page number

KEY: ● Very High Risk ● High Risk ● Moderate Risk ● Low Risk

Sectors	Overall Social Risk Score	Page	Sectors	Overall Social Risk Score	Page
Airlines	●	17	Medical Products and Devices	●	25
Airports	●	36	Mining - Metals and Other Materials, excluding Coal	●	11
Asset Backed Securities - Aircraft	●	17	Mortgage Insurance	●	40
Asset Backed Securities - Auto Loans, Auto Leases, Floorplan, Car & Truck Rental	●	37	Multilateral Development Banks	●	41
Asset Backed Securities - Credit Cards	●	37	Not for Profit Hospitals	●	12
Asset Backed Securities - Equipment Leases and Loans	●	37	Oil & Gas - Independent Exploration & Production	●	13
Asset Backed Securities - Personal Loans	●	18	Oil & Gas - Integrated Oil Companies	●	13
Asset Backed Securities - Small and Medium Enterprises	●	18	Oil & Gas - Midstream Energy	●	26
Asset Backed Securities - Student Loans	●	7	Oil & Gas - Oilfield Services	●	26
Asset Backed Securities - Tobacco Settlement	●	6	Oil & Gas - Refining & Marketing	●	14
Asset Backed Securities - Utility Cost Recovery Charges	●	38	Packaging Manufacturers: Metal, Glass, and Plastics	●	27
Asset Backed Securities - Wireless Towers	●	38	Paper and Forest Products	●	27
Asset Managers	●	18	Passenger Railways	●	28
Asset-Backed Commercial Paper	●	38	Pension Funds	●	28
Automobile Manufacturers	●	8	Pharmaceuticals	●	14
Automotive Suppliers	●	19	Ports	●	29
Banks	●	19	Power Generation Projects	●	29
Beverage Industry	●	20	Privately Financed Public Infrastructure Projects (PPPs)	●	41
Building Materials	●	20	Property, Casualty and Reinsurance	●	30
Business and Consumer Services	●	21	Protein and Agriculture	●	30
Chemicals	●	8	Public Sector Housing	●	31
Coal Mining and Coal Terminals	●	6	Publishing	●	15
Collateralised Debt and Loan Obligations - Project Finance and Infrastructure Assets	●	21	Real Estate Trusts & Other Commercial Property Firms	●	41
Collateralised Loan and Bond Obligations	●	39	Regional and Local Governments - Advanced Economies	●	31
Commercial Mortgage Backed Securities	●	39	Regional and Local Governments - Emerging Markets	●	15
Construction	●	9	Regulated and Self-Regulated Utilities with Generation	●	32
Consumer Goods	●	22	Residential Mortgage Backed Securities	●	42
Covered Bonds	●	22	Restaurants	●	32
Distribution and Supply Chain Services	●	39	Retail and Apparel	●	33
Education and Not-for-Profits	●	9	Securities Firms and Market Infrastructure Providers	●	42
Electric and Gas Transmission and Distribution	●	22	Semiconductors & Technology Hardware	●	42
Environmental Services and Waste Management	●	23	Shipping	●	33
Equipment and Transportation Rentals	●	40	Sovereigns - Advanced Economies	●	33
Finance Companies	●	23	Sovereigns - Emerging Markets	●	16
Gaming and Gambling Industry	●	10	Steel	●	34
Health Insurance Companies	●	10	Surface Transportation and Logistics	●	34
Healthcare Services - Acute Care and Specialty Services	●	11	Technology Services and Software	●	35
Homebuilding and Property Development	●	24	Telecommunications	●	35
Insurance Brokers and Service Companies	●	40	Title and Trade Credit Insurance	●	43
Life Insurance	●	24	Tobacco	●	7
Manufacturing	●	24	Toll Roads	●	43
Mass Transit	●	25	Trading Companies	●	36
Media & Entertainment	●	25	Unregulated Utilities and Power Companies	●	16
			Water and Wastewater Utilities	●	43

Source: Moody's Investors Service

Detailed heat map

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



HEALTH AND SAFETY



DEMOGRAPHIC & SOCIETAL TRENDS



CUSTOMER RELATIONS



HUMAN CAPITAL

PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Very High Risk

Asset Backed Securities - Tobacco Settlement



Key Issue:

Continued shifts in attitudes towards smoking, as well as further regulation, pose very high risks for tobacco settlement ABS

Tobacco settlement ABS are exposed to social risks that decrease cigarette consumption, reducing the revenue available to repay tobacco bonds. Further demographic changes and shifts in social attitudes toward smoking could accelerate such declines and may give rise to further regulations restricting tobacco use. The marketing of new products that are currently less regulated could also expose tobacco companies, who are the obligors in the transactions, to litigation risk. The April 2021 initiative by the FDA to work toward developing a regulation that could potentially ban menthol cigarettes within the next year puts added pressure on future cigarette consumption. A menthol ban would likely accelerate the cigarette consumption rate of decline, decreasing revenues available to the transactions.

Total Debt:

\$7 billion

Very High Risk

Coal Mining and Coal Terminals



Key Issue:

The sector faces very high health and safety risks, and is highly exposed to political agendas.

Social risk for the global coal industry is "Very High". Most issuers have limited scope to manage these risks without major structural and financial realignment because decarbonisation is a broader issue for global policymakers and access to capital for many coal-related issuers is already limited. Social risk is materially higher in certain geographies (such as the US), certain coal types (such as thermal coal) and grades (for example, lower quality coals that will fall out of favour more quickly in the coming years with greater vulnerability to policy actions). Health and safety risk is "Very High", driven by safety-related issues that are endemic to mining, such as mine collapses, and health issues specific to coal mining such as black lung disease, which attract significant attention even though some other industries have higher measured injury and fatality rates. Human capital risk is "High", reflecting ageing workforces and union disputes in certain geographies, though much of the industry is not unionised. Demographic and societal trends risk is also "High", mostly because of the sector's exposure to the socially driven policy agenda with regard to climate change and decarbonisation. The socially driven policy agenda is immediate and affecting demand for thermal coal in a substantial way in certain geographies, such as the US and Western Europe. It is more of an emerging risk in other geographies, such as Asia-Pacific, where demand is still growing, and a longer-term risk in respect of metallurgical coal. Responsible production risk is "High". A coal mine is often the most significant local employer, providing higher-paying jobs than local alternatives, while waste disposal can be an issue for coal mining operations. However, product quality and supply chain risks are less significant. Customer relations risk is low because the sector faces no material issues relating to data security, customer privacy, labelling or distribution/marketing that would be present in more consumer-facing industries.

Total Debt:

\$10 billion

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



HEALTH AND SAFETY



DEMOGRAPHIC & SOCIETAL TRENDS



CUSTOMER RELATIONS



HUMAN CAPITAL

PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Very High Risk

Tobacco



Key Issue:

The sector faces very high social risks relating to the association of the use of its traditional combustible products with health conditions including cancer.

Regulators have yet to recognise tobacco manufacturing companies' claims that a new generation of tobacco products, including heated tobacco and e-vapor, has reduced-risk effects on human health. Regulatory changes that could favourably impact the sector's social risk profile relate to its ability to market potentially reduced-risk products as a safer alternative to traditional cigarettes and benefit from different and potentially less punitive tax regimes, or at least regimes that create a more level playing field. Tobacco regulations to date have been confined to increasing health warnings (ultimately leading to plain packaging) and raising taxes. However, the US Food and Drug Administration has established a framework that increasingly recognises these differences, as has the European Union, whose Tobacco Product Directive identifies Novel Smokeless Tobacco Products as a separate product category from conventional tobacco products.

Total Debt:
\$184 billion

The FDA said in April 2021 that it will work toward developing a regulation banning menthol cigarettes and flavoured cigars within the next year. The agency's plan to ban menthol cigarettes and flavoured cigars is credit negative for the tobacco industry because, if enacted, the initiative would accelerate cigarette volume declines and hurt profitability. Tobacco companies that sell menthol cigarettes in the US would be negatively affected, although smokers will likely migrate to non-menthol cigarettes, thus limiting the impact of such measures on consumption. In addition, given their strong financial metrics, companies would likely be able to absorb any decline in performance without a major deterioration in their debt metrics. We expect tobacco companies would seek to strike down such a ban through the courts, with the result that implementation could be years away. Any ban would need to be science-based or it would not withstand judicial review.

High Risk

Asset Backed Securities - Student Loans



Key Issue:

Significant levels of interest in the student loan burdens of Americans among US and state policymakers will likely continue, resulting in continuing uncertainty for student loan ABS

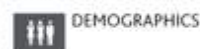
The debt burden of student loans and the affordability of education in the US have become material social issues. Significant levels of interest in the student loan burdens of Americans among US and state policymakers will likely continue, resulting in continuing uncertainty for student loan ABS. The high exposure of student loan ABS to a socially driven policy agenda relating to the debt burden of student loans and the affordability of education is currently mitigated because the credit implications of specific regulatory or legislative actions could be positive, negative or both. Customer relationship risks associated with the disclosure of servicing policies, gainful employment and other demographic trends have high implications for the sector.

Total Debt:
\$222 billion

PRIVATE SECTOR CATEGORIES



PUBLIC SECTOR CATEGORIES



Icon color key:

Very high

High

Moderate

Low

High Risk

Automobile Manufacturers



Key Issue:

Product recalls and supplier network disruptions are significant issues, while high demographic and societal risks reflect environmental regulation and the emergence of "Auto 2.0"

Demographic and social risks are high because of environmental regulation and the emergence of "Auto 2.0" (i.e. the road ahead to autonomous vehicles and ride sharing). Consumer preferences and demographics, which drive income levels, are important factors determining sales, and demographic trends drive sales growth in each market. Increased social awareness and a focus on low or zero emissions provide a backdrop for tightening regulation. Human capital risk is high because experienced engineers and trained factory workers are important to research and development, while a considerable risk relates to product recalls and supplier network disruptions. Product quality issues can weaken brand strength, particularly in relation to emissions/fuel efficiency and safety, and along with negative consumer sentiment can damage the reputation of a company's products or prompt boycotts. In addition, the supply chain depends heavily on parts suppliers. Health and safety risks exist in the manufacturing process and are moderate because the industry provides a relatively safe environment for workers. Although labelling is important, for example in relation to fuel economy, emissions and horsepower, examples of a negative credit impact because of labelling, are rare. Tightening emissions regulations that increase the focus on products' fuel-efficiency could generate a moderate level of risk, as illustrated by the "diesel-gate" scandal in Europe, though even the emissions scandal surrounding Volkswagen has not weakened the company's market position.

Total Debt:

\$555 billion

High Risk

Chemicals



Key Issue:

Overall social risk is high due to high health & safety and responsible production risks that includes the handling of hazardous materials and air and water emissions into the surrounding area.

Customer relations are largely business-to-business interactions. Many commodity chemicals are sold through pipelines or via tankers directly to downstream customers to ensure uninterrupted supplies. Force majeure are not uncommon due to process and distribution complexities but do not strain customer relations. Chemical companies have stable relationships with their customers, sometimes decades-long. Only a relatively small portion of chemical products is sold directly to end customers such as architectural paint, adhesives and construction chemicals. The warning labelling is well-established and internationally recognised. Regulators may impose further warnings on products. Health and safety risk is high because of the handling of hazardous materials during the production process and transportation, given their potential impact on human health. Some products or waste that is generated are toxic and carcinogenic, like formaldehyde and benzene. These can have detrimental health effects during the production process, post production after sites have been closed or through the actual use of the product. Operational incidents causing serious injury or death occasionally occur, but less frequently and to a lesser extent in developed economies. However, despite the risks inherent in operating large-scale and complex production facilities and transporting chemicals, major participants in developed economies have a track record of responsible behavior and adhering to strict regulations, and tend to react quickly to media or social pressure. For the chemical industry certain product categories could face social risks if problems with products, either real or perceived, result in product categories being eliminated as a result of regulation or social pressure. Products that currently fall into this category include single-use plastics such as packaging or other end-uses. Although environmental campaigns pose a threat to growth in demand for plastics used in consumer applications, the light-weighting trend in the automotive industry in particular supports continued industrial demand growth for these same products. Negative sentiment towards certain chemicals can result in production being suspended or projects being delayed or cancelled. Additionally, in the US, the risk of tort lawsuits from the use of certain chemicals in consumer or industrial applications is significant. PFAS chemicals are the latest example of how a family of chemicals used in a limited number of downstream industrial applications can create widespread groundwater contamination and result in a large number of private and public lawsuits. Government regulations are also stringent compared with other manufacturing industries because of chemicals' significant impact on the environment and public health.

Total Debt:

\$536 billion

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



HEALTH AND SAFETY



DEMOGRAPHIC & SOCIETAL TRENDS



CUSTOMER RELATIONS



HUMAN CAPITAL

PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

High Risk

Construction



Key Issue:

The sector's high overall exposure to social risks reflects its heavy reliance on human capital and external supply chains, potential exposure to elevated health and safety risks, and challenges related to responsible production

Construction companies require a large labor force which includes a variety of highly specialized talent and also rely on subcontractors, both of which are critical to completing projects on time and under budget. Unionization, which varies by country, further exposes certain companies to higher labor relations risk, which could lead to loss of productivity and negatively impact earnings in the event of strikes, employee lawsuits, or fines related to labor regulations. Construction companies face potentially high health and safety risk requiring continual investment to monitor and mitigate the risk of on-the-job accidents and to assure compliance with regulatory requirements. Construction companies are also exposed to responsible production challenges around supply chain management, product quality assurance, waste and pollution and non-systemic but occasional bribery and corruption issues, the prevalence of which have been observed to vary by country. If handled improperly, these construction sector hazards can result in high regulatory, legal and reputational risks.

Total Debt:

\$43 billion

High Risk

Education and Not-for-Profits



Key Issue:

Customer relations, human capital and demographic and societal trends pose the greatest social risks in the higher education and not-for-profit sectors

For higher education, declining numbers of high school/secondary school graduates in some regions along with the changing profiles of students are putting pressure on higher education institutions to innovate and adapt, with some universities facing material enrollment declines and stagnation or even reduction in student derived revenues. A growing focus on affordability and the "value proposition" of higher education is challenging resource-limited institutions to remain competitive, while governments are increasingly aligning funding to specific policy goals. Changing consumer preferences, including increasing demand for hybrid on line and in person experiences along with alternative forms of credentialing are driving changes to business models and introducing new competition. Human capital risk is high because tenure and unionization complicate programmatic and financial changes, and pension costs for some squeeze budgets. The higher education sector in particular has multiple customers, including students and their families, governments, donors and other funders which can complicate customer relations. A shared governance model and the need to incorporate the occasionally competing interests of multiple constituents increase social risks and governance challenges. Institutions are also exposed to demands for diversity and inclusion, as well as sexual harassment and abuse concerns. Levels of student activism are high, but rarely have a credit impact. Nonprofit organizations similarly confront changing demographics of their varied constituents, shifting consumer preferences particularly in the cultural arena, and heightened demand for social services.

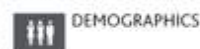
Total Debt:

\$320 billion

PRIVATE SECTOR CATEGORIES



PUBLIC SECTOR CATEGORIES



Icon color key:

Very high

High

Moderate

Low

High Risk

Gaming and Gambling Industry



Key Issue:

The sector is exposed to high customer relations and responsible production risks

In some markets, demographic and consumer preferences have and will continue to move in a direction that does not favour traditional casino gaming, because the younger generations will not spend as much time playing casino-style games as their predecessors and online gambling activities are gaining traction. As such, companies will need to invest to support growth in iGaming and sports betting, as well as attract the necessary talent to support content creation.

The gambling industry is also exposed to customer relation and responsible production risks because it is deemed to be attractive to criminals for money laundering activities and it is often associated to the cause of problem gambling.

Total Debt:

\$98 billion

Online gambling poses greater risks because money-laundering activities and problem gambling are harder to detect. Failings have occurred even where companies adopted robust preventative measures.

Nonetheless, gaming is a highly regulated industry, and compliance with regulations, including customers relations around anti-money laundering and know your customer initiatives, is paramount to maintain compliance and good licensing status. In addition, gaming is a popular but discretionary source of entertainment.

Negative rating actions on European gaming companies have reflected social responsibility pressures, and tighter regulation is likely to persist. Federal and regional governments have placed restrictions on betting amounts and gambling locations in response to pressure from lobby groups, causing sector revenue to fall, while increased compliance costs are pressuring companies' margins. Some governments are increasing taxes to compensate for reduced tax income, further limiting profitability.

High Risk

Health Insurance Companies



Key Issue:

Health insurers face elevated social risks relating to their position on the front line for most people in terms of managing health care costs

Health insurers in the US occupy a central position in one of the most politically sensitive economic sectors. Healthcare costs have risen at a faster rate than inflation for decades, and unaffordable medical bills are meaningful concern for many Americans. National healthcare expenditure in the US totaled \$3.5 trillion, or around 17.9% of GDP, in 2017, and this share is only likely to grow as the population ages. While the Affordable Care Act helped reduce the number of uninsured individuals, almost 30 million US citizens remain uninsured. As a result, politicians are unsurprisingly seeking to reduce healthcare costs and expand coverage.

Heightened attention on healthcare in the run-up to the 2020 US elections is increasing risks for insurers. Several presidential candidates have endorsed a single-payer proposal that would largely eliminate private health insurance in favor of government-run health insurance. Advocates of such proposals do not believe that health insurers play a vital role in managing the health of their members, rather viewing them as middle-men making unwarranted returns on their investment.

Total Debt:

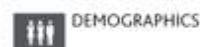
\$152 billion

More modest proposals would add a public option to compete against private insurance in the individual market and, under some proposals, the employer market as well. Under the more expansive public option proposals, health insurers would be pressured by new government competition. An expansive government option could destabilize the employer-sponsored market.

PRIVATE SECTOR CATEGORIES



PUBLIC SECTOR CATEGORIES



Icon color key:

Very high

High

Moderate

Low

High Risk

Healthcare Services - Acute Care and Specialty Services



Key Issue:

The sector is exposed to high social risks, given the highly regulated nature of the healthcare industry and the sensitivity to societal pressures related to the affordability of, access to and quality of healthcare services.

Demographic trends, including an ageing population and a rise in chronic ailments, drive increased demand for healthcare services. However, rising healthcare costs have become a more significant pain point for consumers, particularly as health insurers through plan design (rising co-pays, higher deductibles and more restrictive networks) place more financial responsibility on patients to meet their healthcare costs. This has resulted in consumers seeking healthcare services in the lowest-cost setting, ensuring that providers are in their insurance network, and deferring or foregoing care in certain circumstances. In addition, government and commercial payors pressure providers to reduce their prices. Companies providing healthcare services are exposed to regulation and reimbursement schemes in countries in which they operate, which are important drivers of their credit quality. In Europe, healthcare authorities and insurances often fix prices for services they reimburse and have historically lowered prices in some instances as a tool to control healthcare spending.

Technological advances are also enabling more procedures to be performed in a lower-cost, alternative care settings. These factors inevitably create sales and earnings headwinds for healthcare services providers. Human capital is also an important social consideration. Labor cost for proficient medical and healthcare specialists, hospitalists and nurses is relatively high and can be volatile. Companies' ability to attract and retain healthcare workers is an important credit consideration because sub-sectors such as hospitals and nursing homes are highly labor intensive. Any legislative measures, such as an increase in minimum wages or collective bargaining pressure to significantly increase wages could strain companies' margins. Reputational risks also represent a key credit consideration for healthcare services providers including exposure to litigation exposure to mismanagement of personal data as well as service quality.

Total Debt:

\$103 billion

High Risk

Mining - Metals and Other Materials, excluding Coal



Key Issue:

Health and safety and responsible production risks are the main social risks facing companies in the mining sector.

Social risk is "High" for the global metals and mining industry, with some scope for issuers to adjust or manage social risks by adapting their business models. Some mined products also benefit from social trends (for example, copper, cobalt and lithium are beneficiaries of the transition to battery electric vehicles). Health and safety risk is "Very High", driven by health and safety-related issues that are endemic to mining, such as workplace injuries and mine collapses, even though some other industries have higher measured injury and fatality rates, particularly in regions where occupational health and safety standards are well developed. Automation and remote-controlled equipment result in safer operations and greater productivity. However, while technology can offer clear safety and productivity benefits, greater reliance on digital solutions implies job losses, raising risks relating to mining companies' commitment to existing workforces and local communities. Responsible production risk is "Very High" because positive interaction with local communities and indigenous peoples is critical. Mining is land-intensive and frequently conducted in remote regions, often with environmental concerns such as water shortages. Companies often depend on the communities in which they operate for their workforce, and their engagement with those communities is therefore essential. The supply chain is also exposed to the risk of temporary disruption, though incidents are company- or region-specific (for example in the Democratic Republic of the Congo, where illegal mining practices and artisanal mining are subject to increased scrutiny). In addition, the London Metals Exchange has set standards for sourcing the metals traded on the exchange, based on OECD guidelines, with full engagement required by 2022 and full compliance by 2023. Human capital risk is "High" because of companies' dependence on a skilled labour force, challenges related to bargaining agreements with unions and the risk of strikes. Human capital risks tend to be company-specific, though some jurisdictions may have greater exposure to labour unrest. Demographic and societal trends risk is "Moderate" because such trends are unlikely to alter demand for metal. Some metals are non-substitutable inputs for a wide range of products across consumer and industrial applications, while mining operations are economically important in their surrounding regions. Some issuers could also benefit from societal trends such as the shift to electric vehicles. Customer relations risk is "Low" because the sector faces no material issues relating to data security, customer privacy, labelling or distribution/marketing that would be present in more consumer-facing industries.

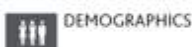
Total Debt:

\$253 billion

PRIVATE SECTOR CATEGORIES



PUBLIC SECTOR CATEGORIES



Icon color key:

Very high

High

Moderate

Low

High Risk

Not for Profit Hospitals



Key Issue:

The sector faces high social risks relating to an aging US population, a lack of a highly skilled workforce, and state and federal healthcare legislation.

Total Debt:

\$270 billion

The US' aging population is having a profound impact on healthcare. While demand for inpatient and outpatient services is increasing as people age, such services are reimbursed at Medicare rates that typically lag commercial insurance reimbursement. The Affordable Care Act's (ACA) provision for Medicaid expansion is adding to demand for healthcare services, requiring rated non for profit hospitals in the US to increase their number of clinical staff, specifically nurses. This is driving up compensation expense, which already accounts for around 50%-60% of a health system's annual expense base.

The supply of highly skilled clinical personnel is limited and staffing shortages exist throughout the US and were exacerbated by the pandemic; rural areas remain disproportionately impacted, but staffing shortages are present in nearly all markets. Threats of work stoppages are also more frequent as clinical staff demand better compensation and working conditions. Staffing shortages may reduce the ability to provide care, impacting top line revenue, may impact the quality of care, posing reputational, litigation and regulatory risks, while also increasing providers' reliance on contract labor and travelers. Staffing supply risks in the industry are somewhat mitigated by the continued desirability of medical professions as evidenced by applications to medical and nursing schools consistently exceed openings by a wide margin.

The rising cost of healthcare and reimbursements to hospitals from government sources are key policy issues at the state and federal levels, and will be a key issue in the 2020 US federal elections. A number of state legislatures are developing eligibility requirements for Medicaid, whether or not they have expanded. We expect the outcome of the 2020 elections to drive further debate around the ACA, including repeal.

Health systems provide essential services and are often among the largest employers in their communities. To streamline operations, some have closed facilities or consolidated services, requiring patients to travel longer distances for some services. While closing or consolidating lower-performing or redundant services may improve operating margins, such actions can also harm a system's reputation and prompt demonstrations against management decisions.

Systems' reliance on complex third-party equipment and machinery to perform medical procedures means that malfunctions of such equipment can expose them to reputational and litigation risk. In addition, because hospitals compile vast amounts of private personal information, the potential for theft or misuse of patient data may impair a health system's reputation, as well as subject it to regulatory penalties or litigation. These risks are partly mitigated by a strong regulatory and approval regime in the US that tests pharmaceuticals and devices before they are used on patients.

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



HEALTH AND SAFETY



DEMOGRAPHIC & SOCIETAL TRENDS



CUSTOMER RELATIONS



HUMAN CAPITAL

PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

High Risk

Oil & Gas - Independent Exploration & Production



Key Issue:

Social pressures over the use of fossil fuel have grown rapidly in recent years, driven by concerns over climate change.

Social pressures over the use of fossil fuel have grown rapidly in recent years, driven by concerns over climate change. There is also increasing regulatory pressure evident by recent legislation in the US state of Colorado that significantly tightened permitting, and an executive order in California that will ban fracking by 2024 and phase out oil production in that state altogether by 2045, as well as fracking bans in a number of areas, highlight the challenges the industry faces in certain locations. Restrictions on land use to protect water supplies, agriculture, wilderness and endangered wildlife, for example, can evolve over time and make land that is currently open to drilling off-limits. In general, however, the industry tends to navigate these risks satisfactorily. Jobs in the sector generally offer wages that are well-above average, and oil and gas-producing companies often generate a large share of the tax base in the jurisdictions in which they operate. In many producing areas, these benefits will engender a positive opinion of the industry and the regulatory framework will be moderate. Many producers, including most large companies, operate in several basins across multiple states and countries, limiting the impact of strict regulation in any one region. In many regions, such as the Permian Basin in West Texas or the Arctic, populations are sparse (and in the case of deep-water offshore locations non-existent) and community relations issues are immaterial for independent exploration and production companies. However, communities in several regions have sought to limit the industry's access to lands and place restrictions on nuisances that accompany the drilling of wells, such as noise, vibration, dust creation, vehicular movement, emissions and air quality, as well as the strain on local infrastructure. National commitments made under the Paris Agreement may result in more stringent regulation and fiscal regimes, while consumer demand for cleaner power could accelerate more rapidly than forecast. Growing social awareness, rising political pressure over climate change and technological progress could accelerate the energy transition, though the pace is currently limited by the lack of widespread availability of alternative clean fuels, particularly for petroleum.

Total Debt:

\$365 billion

High Risk

Oil & Gas - Integrated Oil Companies



Key Issue:

Integrated oil and gas companies face a range of community relations and host country issues, as well as growing social pressures against the use of fossil fuel, resulting in growing regulations and diversion of investor capital.

National commitments made under the Paris Agreement will result in more stringent regulation and fiscal regimes, while consumer demand for cleaner power is accelerating. Growing social awareness, rising political pressure over climate change and technological progress could accelerate the energy transition, though the pace is currently limited by the lack of widespread availability of alternative clean fuels, particularly for petroleum. While integrated oil and gas companies are the industry participants best placed to adapt their business models and successfully transition to the low-carbon economy, they are also the most scrutinised and most vulnerable to societal pressure, as many are household names that serve millions of customers in their marketing operations. Integrated companies have a moderate exposure to workplace health and safety regulation due to the high priority they give to health and safety considerations. Despite some high-profile accidents, the industry has a better than average track record on serious accidents and fatalities compared with other heavy industries. Displacement of local populations due to development, particularly in less developed countries, can require compensation and investment in education, and workforce programmes to aid development.

Total Debt:

\$799 billion

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



HEALTH AND SAFETY



DEMOGRAPHIC & SOCIETAL TRENDS



CUSTOMER RELATIONS



HUMAN CAPITAL

PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

High Risk

Oil & Gas - Refining & Marketing



Key Issue:

The overall High score for social risk is driven by demographic and societal risks and health and safety. Social pressures relating to the use of fossil fuel have grown rapidly in recent years, driven by concerns over climate change. Petroleum refiners can affect the communities in which they operate in the form of air and water pollution and reduced property values, among other factors.

Growing social awareness and political pressure over climate change could accelerate the energy transition, reducing demand for transportation fuels in the longer term. Strong social activism is forcing governments and lawmakers to introduce new regulations and driving institutional investors to divert capital away from refining investments. Concerns over and efforts to combat climate change will lead to actions that will ultimately reduce demand for refined products. Refineries can place a burden on the communities in which they operate in the form of emissions, air and water quality, reduced land values and strain on local roads and infrastructure. Labour issues are prominent for refiners. Many refineries have unionised work forces, which adds a layer of complexity to negotiating wages and workplace conditions. Employee health and safety considerations are significant given the presence of combustible materials and the nature of the processes used to refine petroleum. However, refineries also provide a significant amount of relatively well paying jobs and are often major contributors to the local tax base in which they operate. These positive attributes tend to help mitigate the adverse effects a refinery can have on a community and provide the basis for a satisfactory relationship with local residents.

Total Debt:
\$68 billion

High Risk

Pharmaceuticals



Key Issue:

The sector faces rising social risks related to the pricing of its products, many of which are funded from government sources

Social risks are high for pharmaceutical companies and wholesale distributors. High and rising costs have caused companies to step up their efforts to reduce drug expenditure. Several proposed regulations that would alter the reimbursement system for pharmaceuticals remain pending in the US, including allowing imports of prescription drugs from other countries and adopting an international pricing model for some products. Outside the US, direct government involvement in pricing reductions will continue, most notably in Japan. The overhang of these potential changes is dampening the industry's long-term growth prospects, contributing to M&A event risk. Responsible production considerations include product safety risk, which generates continuing litigation exposures for the pharmaceutical industry. The assertion that product labeling was inadequate and failed to warn consumers of the risks of the products has been at the heart of some litigation, and previous industry exposures (such as Wyeth's diet drugs and Merck's Vioxx) have been sizable. A number of companies face smaller but nevertheless continuing exposure, while others are the subject of opioid-related lawsuits. A number of branded and generic companies face the risk that plant inspections could result in warning letters and/or disruption to production.

Total Debt:
\$782 billion

PRIVATE SECTOR CATEGORIES

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HOUSING

LABOR & INCOME

ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

High Risk

Publishing



Key Issue:

Evolving demographic and societal trends is the key social risks facing the publishing sector

The publishing sector faces high social credit risks overall. The demographic and societal trends factor carries the most weight given the risk of revenue decline in non-digital segments and the factor's negative impact on credit despite low exposure to the human capital, health & safety, customer relations and responsible production. Technological advances including continually improving communications technologies have favoured changes in consumer preferences, particularly the way people consume content, both in terms of news media and from an educational standpoint. Various social media content distribution and advertising platforms (such as Facebook, Twitter and Google) have also changed the way in which people seek and obtain information.

Total Debt:

\$15 billion

The ability to digitally self-publish has effectively devalued created content, challenging the traditional publisher content distribution model. A migration toward digital learning in the education sector has been both a response to the changes in the way students choose to study and a strategy to protect copyrighted content and ensure distribution only to authorized users. However, it is still subject to competition from pure-digital new entrants to the education publishing market. Education and news publishers are under increasing pressure to ensure accuracy in respect of sourcing, as well as accommodate the interests of their readership or the educational community. As their online readership grows, news publishers are seeking to monetize their investments in online platforms through subscriptions and/or online advertisements or designing digital advertising campaigns on behalf of community business partners.

High Risk

Regional and Local Governments - Emerging Markets



Key Issue:

Social risks are high for some emerging market regional and local governments and may have a material impact on credit in the medium term

Depending on the division of responsibilities across governments, central and/or regional governments can play a significant role in mitigating the credit impacts of social risks on sub-sovereigns, at least in the short to medium term. However, social risks are vulnerabilities and may have a material credit impact in the medium term. Labor and income and access to basic services are the most significant social risks. Relatively high unemployment and high levels of income inequality in some developing sub-sovereigns weaken economic growth and pressure revenue and spending. Some developing sub-sovereigns also have large informal economies, depressing formal labor participation and constraining taxation revenue to meet social spending. Many also have significant unaddressed infrastructure needs that require significant investment, though national governments would share some of the burden.

Total Debt:

\$31 billion

Developing sub-sovereigns face moderate demographic risks in the form of aging populations or migration, which affect the labor force, taxation revenue and spending. Housing supply and affordability, particularly for low-income segments and an increasingly urbanized population, is putting moderate pressure on public finances. Although education levels vary across developing sub-sovereigns, access to and the availability of education are generally moderate risks. Health and safety risk varies across developing sub-sovereigns. Some regions have high levels of insecurity, putting pressure on policing and public service expenditure. Access to health care can also vary significantly across regions and localities, while demand to broaden healthcare coverage can contribute to fiscal pressures.

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



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DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

High Risk

Sovereigns - Emerging Markets



Key Issue:
Emerging market sovereigns' vulnerability to social risks is high overall, though exposure can vary significantly across regions and countries

Access to basic services is the main social risk emerging market sovereigns face, while infrastructure needs are a key constraint on growth for many developing nations. A lack of adequate infrastructure limits productivity growth, reduces private investment, and constrains export and international trade, all of which are relevant factors for ensuring sustainable growth.

Labor and income, education and health and safety are other important social risks. Inequality and low wages are common in most developing nations, while low education levels limit economic growth. High levels of violence, as in many Central American countries, reduce investment and pressure public finances. Unlike developed economies, the demographics of developing sovereigns pose limited credit risks. Most have younger populations and their demographic structures are more supportive of future growth as the labor force expands.

Total Debt:
\$3,108 billion

High Risk

Unregulated Utilities and Power Companies



Key Issue:
Social risks for unregulated utilities and power companies generally stem from the same sources, primarily responsible production and demographic and societal trends

The continuous ability to source fuel, supply and demand changes, and markets' adaptation to technological shifts are ongoing pressures. Socially driven policy agendas and observable changing consumer preferences based on increased environmental awareness will continue to affect the sector's credit quality in the medium term.

Community relations and engagement are particularly important in respect of obtaining permits for new developments. Permits and licenses are typically renewed and have to meet particular requirements such as emissions levels and water discharge. Supply chain logistics such as transmission lines, gas pipelines and other fuel transportation, which community opposition and regulations can also significantly affect.

In addition to health and safety risks associated with maintaining heavy equipment and machinery, the sector is also prone to event risks with social risk repercussions, such as major nuclear and hydropower disasters. Significant health and safety regulations and inspections are in place to ensure that standards are met.

Social risks associated with longevity of the workforce, recruitment and retention are moderate overall, but can be higher in locations where there is a shortage of specialized labor for solar photo-voltaic maintenance, offshore wind or a need for expatriate labor in the initial stages. Certain specialized labor associated with nuclear generation is also limited given aging fleets and nuclear energy's lower share in the overall global energy mix.

In some countries or regions with unionized workers, or where utilities may employ a large percentage of the workforce, there may be political pressure to maintain the operations of certain assets given the potential risk of job losses. However, this can delay but not deter some inevitable sector transitions.

Total Debt:
\$542 billion

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



HEALTH AND SAFETY



DEMOGRAPHIC & SOCIETAL TRENDS



CUSTOMER RELATIONS



HUMAN CAPITAL

PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Moderate Risk

Airlines



Key Issue:
Stringent regulatory standards and robust growth prospects mitigate the airline industry's broad exposures to social risks

Airlines' smooth operations rely heavily on interconnected technological platforms functioning properly. Secure access to all systems is paramount, as is the security of customer and company information. Data/operating system interruptions are infrequent, as are releases of confidential information.

Unionization is the norm in the industry. Incidences of industrial action vary by continent, but unions in France and Germany are typically the most active. Strikes in the US are essentially illegal. Airlines' effective operations rely on the highly specialized role of pilots and mechanics, and sufficient supply is not assured in the near term. However, the industry is likely to incentivize more people to pursue such careers, alleviating concerns in the next five years and beyond.

Total Debt:
\$86 billion

The industry is highly regulated in respect of aircrafts' technical certification, operation and safety, and related maintenance functions and customer rights. Air travel, particularly in the developed world, has a strong safety record. Participation in local communities and contributing at times of need are core to most airlines' corporate cultures.

Population growth, higher disposable incomes, air travel's increased penetration in developing countries and younger generations placing a higher value on experiences compared with purchases of material goods bode well for growth in air travel. However, policies to limit carbon emissions from aircraft are a potential impediment to growth.

Moderate Risk

Asset Backed Securities - Aircraft



Key Issue:
Aircraft ABS exhibit moderate social risks overall, but socially driven policies and regulations could weaken the profitability of airlines that are lessees in the ABS

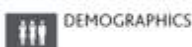
The continued expansion of the middle classes and growing per capita incomes, particularly in China and other Asian countries, have driven up passenger volumes, sustaining demand for aircraft. However, slowing growth in demand for air travel because of a global or regional economic slowdown or severe aviation event (such as terrorism) could reduce demand for aircraft in future. Socially driven policies and regulations such as a push for minimum legroom could reduce capacity, weakening the profitability of airlines that are the lessees in the ABS.

Total Debt:
\$4 billion

PRIVATE SECTOR CATEGORIES



PUBLIC SECTOR CATEGORIES



Icon color key:

Very high

High

Moderate

Low

Moderate Risk

Asset Backed Securities - Personal Loans



Key Issue:

Personal loans ABS have a high exposure to customer relations risk, but their exposure to social risks is moderate overall

Customer relations risk stems from product disclosures, high interest rates and the business models of new lenders, which can give rise to regulatory uncertainty and litigation risk. However, the sector is small and less visible than other types of loans such as credit cards, student loans and auto loans. Personal loans ABS are exposed to broad demographic and societal trends, particularly policy responses to high interest rates. Regulation may target borrowers with weak credit quality. In EMEA, social risks are lower overall for this sector due to more established lending practices.

Total Debt:

\$59 billion

Moderate Risk

Asset Backed Securities - Small and Medium Enterprises



Key Issue:

SME ABS are moderately exposed to health and safety, responsible production and demographic and societal trends risks

SMEs are significant employers and consequently exposed to social trends and risk factors that are broadly in line with their countries of operation. Small firms typically have fewer financial resources with which to respond to changing regulatory requirements in respect of health and safety or minimum wages, for example. The labor-intensive aspect of work in their main sectors reduces SMEs' ability to benefit from automation or artificial intelligence. However, risks are limited overall because SME securitizations benefit from diversification in their constituent industries and are structured to provide credit enhancement to the rated notes.

Total Debt:

\$92 billion

Moderate Risk

Asset Managers



Key Issue:

The socially driven policy agenda is positive for ESG-related investment products and services, but the sector's increasing reliance on technology increases data security risks

The industry's lack of diversity generates human capital risks in regions where disclosures on organizational diversity, gender pay and board composition are required. There are also emerging risks in customer relations as asset managers seek to move closer to end-investors and because of the sector's increasing reliance on technology, increasing cyber-security risks. Although demographic shifts are negative for the sector in countries with aging populations, the growing adoption of socially driven agendas is positive for investment products with ESG screens and stewardship services, particularly among younger investors. Declining retirement asset levels are coinciding with the retirement of members of the "baby boomer" generation, but wealth transfer presents an opportunity.

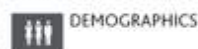
Total Debt:

\$75 billion

PRIVATE SECTOR CATEGORIES



PUBLIC SECTOR CATEGORIES



Icon color key:



Moderate Risk

Automotive Suppliers



Key Issue:

Insufficient data security or customer privacy of technical/manufacturing information could expose suppliers to pricing pressure from competitors who have learned to copy product specifications.

Products are highly negotiated and agreed on before production, meaning that disclosure and labelling is not a significant risk. Auto parts suppliers build to their original equipment manufacturer (OEM) customers' requirements, making their exposure indirect, while automobile reliability/quality is highly regulated. Quality issues caused by product recalls from OEMs due to parts failure of suppliers being liable for their parts are a risk, however, mitigated by warranty provisions booked on a constant basis. Responsible Production Risk therefore is low.

Although the sector is partly unionized, organized labour is localized. Retaining skilled manufacturing/assembly labour is an issue, typically in developing regions such as Mexico, South America, Eastern Europe and Asia. Newer workers often move to competitors for better wages once trained. Although the automotive assembly industry has a history of issues in respect of worker safety, these have largely been remedied over time, and high levels of plant rules, regulations and certifications are now in place for employees. In some instances, toxic chemicals are used in smaller distinct products such as lead acid batteries.

Total Debt:

\$119 billion

Quality requirements are mandated by the specifications of OEM customers. Inability to adhere to these requirements generates significant excess costs relating to scrappage, excess labour, excess shipping charges and rework time. Although an aging population can reduce demand for manually driven cars, it can also increase demand for autonomous driving vehicles and technology. Fuel economy standards have implications for auto parts.

Moderate Risk

Banks



Key Issue:

Customer relations is the most relevant social risk for banks, particularly in the areas of mis-selling and of data security and customer privacy.

Banks face moderate social risks, stemming principally from customer relations and, to a less extent, from demographics and societal trends. Data security and customer privacy are critical for banks because they access large amounts of personal data, and are becoming increasingly important as their online businesses expand and regulatory standards tighten. Risks are higher for banks engaging in retail activities, a business which is typically more regulated and subject to regulatory fines. Sizable investments in technology and banks' long track record of handling sensitive client data partly mitigate the associated credit risk.

Fines and reputational damage as a result of product mis-selling, misrepresentation and other types of misconduct are also key social risks in the customer relations category. Banks have greater exposure to these risks in developed countries, where such behaviour is closely scrutinized by regulators and subject to public opinion. Cases of bank misconduct are frequent and the credit implications (loss of customers or regulatory sanctions) are at times sufficiently significant to move ratings.

Shifting customer preferences toward digital banking are increasing information technology costs, while the entrance of digital, nonbanking competitors is affecting sector revenue. Aging population is a credit concern in many countries, reflecting the link between age and borrowing and savings habits. Socially driven policy agendas may translate into regulation (such as subsidized lending and consumer protection rules) affecting banks' revenue base. Less frequent, although highly impactful, is an exposure to social upheavals that lead to severe and prolonged capital flight and a marked weakening of market confidence.

We generally expect societal trends to have a modest impact on banks' credit quality. Banks benefit from financial and operational flexibility, and over time have proved capable of adjusting to emerging social issues. Social considerations may also unlock opportunities for banks. For example, greater financial inclusion and access to banking services in emerging markets support economic development by facilitating access to credit and the allocation of financial resources, supporting the sector's growth.

PRIVATE SECTOR CATEGORIES

RESPONSIBLE
PRODUCTIONHEALTH AND
SAFETYDEMOGRAPHIC &
SOCIAL TRENDSCUSTOMER
RELATIONSHUMAN
CAPITAL

PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS

HEALTH AND
SAFETY

EDUCATION



HOUSING

LABOR &
INCOMEACCESS TO
BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Moderate Risk

Beverage Industry



Key Issue:

Key social risks include customers' health concerns, misdirected marketing policies and/or boycott campaigns, and changing consumer preferences

While health and safety risks in the beverage industry are low and the sector is a leader in terms of diversity and inclusion, the sector is also exposed to the impact of customers' health concerns. For example, sugar taxes will also remain a headwind, although the profit impact so far has been short-term and/or relatively modest. The fact that beverages are fast-moving consumer goods means that product recall risk is low, while the supply chain is relatively simple, though changing demographics and consumer tastes could affect the underlying business. Innovation and premiumization in both mature and emerging markets offset lower volumes, and support operating profit growth. The beverage industry is high-margin and able to offset higher labor costs.

Total Debt:

\$400 billion

Moderate Risk

Building Materials



Key Issue:

Health and safety is the main social risk facing companies in the building materials sector

The sector faces a low risk of customer activism or boycotts and has a relatively limited history of collective bargaining, pay disputes and industrial action. However, it has a sizable exposure to emerging markets where labor laws are less developed, while levels of diversity and inclusion are very low. Although the sector's mining-related activities have a better safety track record (open pit operations and more stringent safety standards), work in the field is strenuous and involves handling heavy machinery and bulk materials with heavy weights. Overall, we view Health and Safety related risks to be similar to other manufacturing industries. The commoditized nature of end-products limits the sector's exposure to product recalls, but a risk remains for more engineered products in the light side part of the industry. The sector's reliance on external supply chains is limited because issuers are vertically integrated and self-reliant. Community relations are an important consideration and may influence the granting of extraction permits for rocks, sand and gravels, while a move toward more environmentally friendly housing could prompt a shift in product demand or give rise to technical innovations. However, the sector has traditionally been slow-moving and substitution risk is relatively low, particularly on the industry's heavy side, given the low price of products compared with their chemical/physical properties. Aging populations could reduce demand in developed economies, but infrastructure spending mitigates this risk. Demographic growth is a source of additional demand in emerging markets.

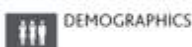
Total Debt:

\$90 billion

PRIVATE SECTOR CATEGORIES



PUBLIC SECTOR CATEGORIES



Icon color key:



Moderate Risk

Business and Consumer Services



Key Issue:
Business and consumer services issuers can be exposed to data security and customer privacy risks, given they can transact sensitive information for their clients

Business and consumer services issuers can be exposed to data security and customer privacy risks, given they can transact sensitive information for their clients, such as credit card numbers, personal information, or other confidential records. Leakage of sensitive data could also lead to legal or regulatory issues. Exposure will vary depending on the type of records processed or stored. Consumer services providers rely on social perceptions of their service quality and brand image to drive demand, which heightens the relevance of good customer relations. Reputational issues pose a risk given their direct relationship with end consumers. Social perception that a provider offers poor quality or mismanages confidential information could result in loss of business. These risks can be mitigated at the expense of higher operational costs by reinvesting in sustained service quality and marketing; and investing in data protection tools, secure processes, and defenses against cyberattacks. Increasing regulatory requirements in connection with data privacy and confidential information management, such as GDPR in Europe or CCPA in California, could result in higher operational costs but also establish a more robust process framework that can mitigate risks.

Total Debt:
\$364 billion

Companies that rely on available talent to deliver their services are exposed to human resources risk. During economic expansions, companies may have difficulty hiring or retaining the necessary workforce, which could lead to wage pressure and growth constraints. However, many issuers can pass on higher wages to customers or are large enough to manage unutilized capacity, which can mitigate the risk. Moreover, a tight labor market can also support more outsourcing of non-core functions, which can boost demand for issuers in this cohort. Lastly, the variable nature of labor costs mitigates cyclical demand headwinds during economic contractions, as providers can adjust their employee base and tend to have modest fixed labor costs.

Society has embraced technological evolution and customers increasingly demand digital ways to interact with services providers. This demographic trend creates risks for companies that are slow to adopt technological advancement and could lead to material customer losses. Services providers will need to stay ahead of evolving consumer and business trends, and invest in technology to remain competitive.

Moderate Risk

Collateralised Debt and Loan Obligations - Project Finance and Infrastructure Assets



Key Issue:
While concentration increases the sector's risk exposure, risk levels vary depending on the industry composition of the portfolios

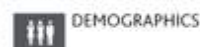
The sector's overall score reflects the weighted blend of the underlying collateral in existing project finance CDOs. Its significant exposure to project finance and infrastructure linked to higher-risk sectors such as power generation projects, regulated water and regulated utilities and networks poses a greater risk, mirroring underlying social concerns in these sectors. Transactions with a higher exposure to public private partnerships represent a lower risk because key project risks are typically identified and allocated upfront. The moderately concentrated nature of PF CDOs means such deals are more exposed to social risks than other types of CDOs.

Total Debt:
\$6 billion

PRIVATE SECTOR CATEGORIES



PUBLIC SECTOR CATEGORIES



Icon color key:

Very high

High

Moderate

Low

Moderate Risk

Consumer Goods



Key Issue:
The most frequent transmission channel for social risks is reputational and mostly externally driven

The main social risks that companies in the sector face relate to potential consumer activism and boycotts; a reliance on external supply chains (raw materials) that could be exposed to "responsible production" issues; and changing consumer preferences. Increasing efforts to collect customer information also expose companies to data security and customer privacy risks, though the data collected are usually not sensitive. Product disclosure and labelling may be relevant for food and over-the-counter (OTC) pharmaceutical producers. Human capital is not a significant risk, though large companies can face scrutiny over their diversity and inclusion policies. Health and safety risk is low or moderate across the sector. Product quality is sometimes a primary consideration, particularly in segments such as OTC products and infant nutrition/health products. There is also a focus on product sustainability and the sustainability of supply chain sources. Aging populations and changing consumer preferences drive changing demand in some segments, but companies can manage this risk by introducing new products that better reflect evolving consumer tastes.

Total Debt:
\$704 billion

Moderate Risk

Covered Bonds



Key Issue:
Covered bonds have a moderate overall exposure to social risks

Bank credit quality is the primary ratings driver for covered bonds, which are direct obligations of financial institutions and benefit from collateral in the form of a cover pool of loans, mostly residential mortgages. For banks, misconduct, poor handling of data security and customer privacy breaches are the most significant social risks, though banks' financial and operational flexibility and track record of adjusting to social issues limits the credit impact. Some social issues affecting a bank, such as the mis-selling of financial products linked to mortgage loans, could affect loans in the cover pool, and demographic trends could affect property values. Borrower protection legislation may affect underwriting and servicing in an economic downturn.

Total Debt:
\$2,399 billion

Moderate Risk

Electric and Gas Transmission and Distribution



Key Issue:
Overall social risk is moderate, but customer relations risk is high

Risks related to product disclosure and labeling are low, with the exception of green electricity. There is a moderate risk of boycotts and customer activism in the form of objections to pipelines and transmission lines, as well as social implications as a result of rate increases. Human capital risk is moderate, as is labor relations risk. Although the sector is heavily unionized, this has not been an issue for utility companies. Labor retention risk is moderate because utility skills are generally not difficult to acquire, though nuclear plants require specialized skills and the workforce is aging. In common with other sectors, white males dominate management, though the sector has largely avoided lawsuits or controversies to date.

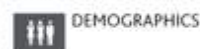
Total Debt:
\$518 billion

Working with gas and electricity can be dangerous, and there have been regular injuries and fatalities. Ongoing health issues are moderate because exposure to an industrial environment can have affect human health over time. Government regulations in respect of worker health and safety are extensive, while the safety and reliability of utility services are very important to customers. Supply chain risk is moderate because companies depend on fuel supplies and natural resources, as well as suppliers of equipment such as transformers. Maintaining good customer relationships is important to utilities because this affects how the public perceive them, as well as the regulatory treatment they receive. Demand for distributed generation and renewable energy is increasing, while the younger generation is more attuned to demand response technology and clean energy. Social policy agenda risk is moderate because energy policy initiatives are often implemented through utility operations.

PRIVATE SECTOR CATEGORIES



PUBLIC SECTOR CATEGORIES



Icon color key:

Very high

High

Moderate

Low

Moderate Risk

Environmental Services and Waste Management



Key Issue:

Social risks facing the environmental services and waste management industry are moderate overall

Workforce management is becoming increasingly important as driver shortages affect the availability of waste-collection drivers. As companies convert to and maintain a higher percentage of automated trucks and trucks with compressed natural gas engines, the need for higher skilled mechanics has rapidly increased. Employees face the risk of exposure to harmful and/or hazardous waste, but incidents are infrequent and mostly one-off, and there are strict external and internal controls and regulations in place to detect and avoid hazardous waste material. Although falling steadily, workers' compensation insurance/premiums will remain an integral aspect of risk management. While unionized labor can make up a meaningful percentage of the workforce, labor relations have historically been positive.

Total Debt:

\$84 billion

Companies use surety bonds, letters of credit and insurance policies to protect against potential environmental and financial damage, but reputational risk can be meaningful. Good community relations are critical, particularly relating to landfills. Waste generation/volumes correlate to population growth, and trends indicate no material changes in the amount of waste generated per person. Zero-waste initiatives could gain more traction and focus, reducing overall waste volumes, but this trend is likely to be slow-moving, giving companies sufficient time to adjust to industry conditions.

Waste services companies have made significant progress in transitioning to providing recycling services, rather than taking on commodity price risk selling recyclable materials post-collection and sorting. In waste-to-energy, companies will continue to collect and deliver these volumes, and in the case of some larger industry participants even have their own waste-to-energy facilities.

Moderate Risk

Finance Companies



Key Issue:

Finance companies have moderate exposure to social risks

In general, finance companies have moderate exposure to social risks, although as a heterogeneous group, the level of social risk exposure varies across companies depending on the nature of its business.

Customer privacy and data security are highly relevant, particularly for finance companies whose businesses cater primarily to consumers, and therefore necessitate the handling of large amounts of sensitive customer data. On the other hand, customer privacy and data security are less acute for those finance companies that are not consumer-oriented, including aircraft lessors, leasing companies, project finance companies, commercial real estate lenders and US business development companies.

Finance companies have invested significant resources to improve their technological capabilities, including their underwriting and risk monitoring practices, and to improve customer relations.

While most finance companies operate in niche fields with a low degree of regulatory scrutiny compared to other financial sectors, certain finance companies are exposed to a high degree of risk stemming from policy-driven agendas, such as subprime consumer lenders and distressed asset management companies whose products and business models are subject to extensive regulatory oversight. For these firms particularly, but for all finance companies more broadly, fines and reputational damage due to product mis-selling or other types of misconduct may also be important considerations.

Companies in the sector do not produce tangible physical products that could give rise to responsible production issues or employee health and safety risks. They also tend to employ relatively higher-skilled personnel, and there are no significant labour-relations issues.

We expect demographic and societal trends to have a moderate impact on finance companies' core businesses and credit quality as consumers and companies adapt their spending habits and changes in their behavior. Examples include consumer transportation preferences for aircraft leasing firms, gradual adoption of electric vehicles for auto finance, and trends in homeownership in residential mortgages. Smaller and less regulated than other financial institutions, finance companies have shown the operational flexibility to adapt to emerging social issues. Some types of finance companies have also emerged in response to more regulated financial institutions exiting certain business activities due to regulatory pressures. Some finance companies also have higher flexibility to capitalize on some societal trends such as the digitization of traditional banking services.

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



HEALTH AND SAFETY



DEMOGRAPHIC & SOCIETAL TRENDS



CUSTOMER RELATIONS



HUMAN CAPITAL

PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Moderate Risk

Homebuilding and Property Development



Key Issue:

The sector faces moderate social risks overall

Population growth, demographic changes, societal trends and affordability are important factors driving demand, and changes in these areas will affect earnings of property developers. Developers are further exposed to customer relations risk, which could impact brand reputation given customer satisfaction is closely linked to the quality of delivered property units. Furthermore, cyber security risk associated with the collection of sensitive customer data is a key concern as well as the associated cost to ensure an appropriate protection process is in place. Human capital risk is moderate given the labor-intensive nature of the construction process and a shortage of skilled labor will constrain supply, particularly in developed markets such as the US and Europe. Property developers are also exposed to responsible production challenges around the less transparent land procurement process, which could be potentially associated with bribery and corruptions issues in some emerging markets. Developers' exposure to accident and safety issues at construction sites is limited because most construction work is outsourced to third-party contractors who bear the liability associated with any workers compensation claim.

Total Debt:

\$186 billion

Moderate Risk

Life Insurance



Key Issue:

Life insurers' primary exposure to social risks stems from their underwriting and distribution of insurance products

Life insurance companies are highly regulated and provide the majority of their products through diverse distribution channels. Customer relations are important because of the sector's reliance on handling of customer data and privacy. Human capital risks are potentially significant, primarily in respect of recruiting and retaining key employees. Demographic and societal trends, including longer lifespans and aging populations, will affect retirement and estate planning products, as well as the pricing of life and health risks as insurers manage mortality, longevity and morbidity risks. Societal trends could also limit insurers' ability to share adverse experience through higher premiums for holders of life and long-term care insurance policies. Digital innovations are disrupting distribution patterns for life insurers. Effects range from the underwriting process itself to how life insurance and retirement products are purchased.

Total Debt:

\$407 billion

Moderate Risk

Manufacturing



Key Issue:

The manufacturing sector faces moderate social risks overall

While workers in certain hazardous industries face considerable potential health and safety risks, companies are seeking to reduce such risks in mature and, increasingly, emerging market production areas. A trend, particularly among larger and more visible companies, toward systems and engineering activities aims to reduce their exposure to labor availability, the vagaries of wage or benefit demands and/or legal issues associated with large workforces. A shrinking pool for more highly skilled workers such as engineers and welders is a concern for companies as they seek to keep pace with technological change. Most companies are business-to-business rather than consumer-facing, but remain exposed to reputational and potential operational risks associated with their products. If products have to be recalled or redesigned, the greatest risk typically lies in how the recall or redesign affects the industrial supply chain.

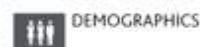
Total Debt:

\$1,201 billion

PRIVATE SECTOR CATEGORIES



PUBLIC SECTOR CATEGORIES



Icon color key:



Moderate Risk

Mass Transit



Key Issue:
Mass transit enterprises' exposure to social risks is moderate overall

Deteriorating service levels can expose mass transit enterprises to customer relations risk, potentially driving passengers away and reducing fare revenue to the extent that passengers have other mobility options. The risk can be alleviated by capital and operational investments that improve service quality. Transits are labor-intensive operations and have growing pension and retiree healthcare liabilities that will increasingly pressure the balance sheets of some companies and compete with capital reinvestment. The scope, complexity and labor-intensiveness of mass transit operations, which include maintaining subway tunnels and platforms, rail yards and buses running on city streets, give rise to high health and safety risks that can drive labor and capital costs. Most companies are heavily subsidized by tax revenue that either explicitly backs their debt or supplements their operating revenue. Employment, wealth and population trends heavily influence companies' bottom lines.

Total Debt:
\$95 billion

Moderate Risk

Media & Entertainment



Key Issue:
Changing consumer content aggregation and distribution preferences are the main social risk facing media and entertainment companies

Evolving demographic and societal trends are the key risk facing many companies in the media and entertainment sector. An evolving ecosystem with newer disruptive television content aggregation and distribution platforms is changing consumer behaviour trends. Some companies are benefiting or managing the transition well, while many others remain exposed to these risks. The improved wireless communications speeds and capacity capabilities and lower data pricing for such devices such as smartphones and tablets are also driving changes and influencing consumer behaviour and are resulting in highly targeted advertising with greater ROI than traditional advertising. Over-the-top (OTT, internet streaming services) channels have broken television broadcasters' and cable networks' stronghold on distributing content, while digital targeted advertising budgets now make up the majority of advertising budgets. Traditional networks and broadcast station owners are under pressure to consolidate and pivot to direct-to-consumer video-on-demand platform offerings to remain competitive in this changing landscape. They ultimately need to adapt their business models to their audience's new media consumption habits and improve their advertising offerings. The transition to new models, such as subscription-video-on-demand, is leading to competitive pressures to reach scale due to competitive spending on content, potential for high churn, and privacy concerns regarding data collection for more effective ad targeting. Human capital risks are generally limited in this sector, though some companies, particularly those more reliant on scarce technologically skilled talent, are more exposed.

Total Debt:
\$514 billion

Moderate Risk

Medical Products and Devices



Key Issue:
The global medical device sector is subject to moderate social risks.

Responsible production is a key risk for medical device manufacturers. Companies can be exposed to product safety, product recall and labeling risks when patients experience unanticipated adverse effects, particularly when they come into direct contact with products. Such situations can give rise to legal payments and adversely affect a company's reputation. Regulatory oversight of medical companies' manufacturing sites and processes can also result in lost revenue and additional cash costs. However, in most cases costs have been manageable for the companies involved and these risks have therefore been largely contained, carrying a limited credit impact. Demographic trends, including an ageing population and a rise in chronic ailments, drive increased demand for medical products and devices. However, this trend has been accompanied by increased costs for healthcare systems, such that government or commercial payors (depending on the product and market) pressure providers to reduce their prices. Consumers and patients typically do not directly purchase medical devices, which are generally part of a procedure, with the result that public scrutiny over prices is not as high as in other healthcare segments such as pharmaceuticals. Although prices are falling in some categories, trends have been very consistent and predictable, and we expect this to remain the case. In addition, concerted legislative or regulatory efforts resulting in material price pressures are unlikely, and we therefore view the risk associated with demographic and societal trends as moderate.

Total Debt:
\$300 billion

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



HEALTH AND SAFETY



DEMOGRAPHIC & SOCIETAL TRENDS



CUSTOMER RELATIONS



HUMAN CAPITAL

PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Moderate Risk

Oil & Gas - Midstream Energy



Key Issue:

Regulatory, political and public opposition to projects has significantly increased in the past decade and will likely continue to intensify as opposition to planned and existing projects increases, driving the high risk associated with demographic and social trends. In addition, there are public safety risks emanating from unintentional releases and potential concerns over violating indigenous population rights.

As the link between oil and gas producers and downstream participants such as refiners, electric utilities and local distribution companies, midstream companies have traditionally operated with relatively little consumer awareness. Companies in the sector typically lack a retail arm or known brand, which contributes to their relative anonymity among the general public and limits the sector's exposure to social risks. In recent years, a number of high-profile pipeline projects (for example, Keystone, Dakota Access, Rover and Trans Mountain) have encountered strong opposition from a variety of constituencies including local communities, climate activists, regulators and indigenous populations. In some cases, institutions funding such projects have also come under pressure to withdraw and/or stop lending to pipeline projects. In addition, regulatory hurdles and public opposition to the construction of new midstream projects, and in some cases even existing midstream projects, have increased. These hurdles, along with the carbon transition risk, could limit growth opportunities for the midstream sector. The sector comprises several activities, including long-haul transportation, gathering, processing, fractionation, terminalling, storage and distribution. The explosive nature of the products being conveyed means companies need to exercise heightened vigilance to protect the safety of the communities in which they operate. While rare, equipment failures can result in large explosions and fatalities. Midstream companies continuously monitor their lines to prevent accidents occurring.

Total Debt:

\$401 billion

Moderate Risk

Oil & Gas - Oilfield Services



Key Issue:

The increasing social and regulatory pressure to move away from hydrocarbons will lead to decreasing demand for oil, and therefore less capital spending to find and develop resources.

Oilfield services companies face social risks similar to those of the exploration and production (E&P) companies that are their customers. The increasing social and regulatory pressure to move away from hydrocarbons will lead to decreasing demand for oil, and therefore less capital spending to find and develop resources. Less capital spending would reduce demand for services and weaken the pricing power of the services companies, depressing cash flow generation. However, we expect some of the large services companies with technology know-how to transition at least a portion of their service offering toward renewable energy development.

Oilfield service (OFS) companies also face health and safety risks. The most likely time for a serious accident at a wellsite is when the well is being drilled and completed, which are activities that OFS companies perform, and the sector is consequently subject to substantial health and safety regulation. Levels of noncompliance are low overall and OFS companies prioritize worker health and safety, with the result that serious accidents and fatalities are lower than for heavy industries overall.

Total Debt:

\$141 billion

Site development and drilling and the completion of wells can give rise to public nuisances such as noise, odour, vibration, dust, increased road burden and air quality, while equipment movement and supporting services such as water-handling can strain roads and local infrastructure. Poor performance in these facets of the business can cause reputational damage and affect service providers' prospects. However, the long-term community relationship typically resides with the contractor who owns the lease, secures the permits and will operate the wellsite for many years to come.

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



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DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Moderate Risk

Packaging Manufacturers: Metal, Glass, and Plastics



Key Issue:

The sector faces an overall moderate level of social risk, driven by moderate health and safety risks

Customer relations risk is low because of the industry's business model of manufacturing to given specifications. Although the design may disclose customer marketing and other strategic information, disclosure is limited and the information is not accessible online.

While current negative sentiment towards plastic packaging raises the possibility of fallout for packaging manufacturers, the risk is low because consumer products companies decide the substrates and are usually the focus of consumer campaigns. Human capital risk is also low, reflecting the sector's low level of unionization and companies' generally good relations with active unions. Low human capital risk also reflects that most plants are located in rural areas, as well as a lack of alternative local employment. Most employees require only a low level of technical or other training.

Total Debt:

\$121 billion

Moderate health and safety risk reflects common risks in a manufacturing environment, offset by a lack of exposure to toxic substances or dangerous processes. The level of risk also reflects US Occupational Safety and Health Administration regulations, to which all manufacturers are subject. Responsible production risk is moderate because of the current focus on the sustainability of plastic packaging and volatility in resin prices. Demographic and societal trends risks is high because of the current focus on plastic packaging. Demographic trends represent a moderate risk because of the predominance of food and beverage packaging.

Moderate Risk

Paper and Forest Products



Key Issue:

Global paper and forest products companies face moderate social risks overall

We have set the overall social risks score at "moderate" rather than "low" to reflect our view that, as a manufacturing-intensive industry, companies are more exposed to human capital, health and safety and responsible production risks than companies in the services industry. Because other businesses are typically the direct customers, most paper and forest products companies are not notably vulnerable to risks associated with product disclosure and labelling, or risks associated with maintaining a high level of personal and/or confidential information.

Total Debt:

\$76 billion

Most companies have moderate exposure to labor relations and health and safety risks at their timberlands or manufacturing facilities. Rules, regulations and certifications are in place at the majority of mills to protect employees and contractors. Health and safety risks are unlikely to materially affect companies' overall credit quality as most rated companies have incorporated health and safety compliance into their operational planning and business models.

Good community relations are an important consideration because most mills are located in rural areas and can occasionally be a source of pollution and/or unpleasant odors. However, the fact that mills are often the only local employer means there is typically community pressure to support them and ensure they remain competitive. Some commodity paper companies continue to face the ongoing challenge of repurposing assets, as consumer preferences switch away from paper to digital alternatives. Although the industry is sensitive to socially driven policy agendas in respect of sustainability, most companies have committed to sustainable practices. Certain socially driven policies, such as reducing single-use plastic items, have benefited the industry, with its ability to supply paper-based alternatives.

PRIVATE SECTOR CATEGORIES

RESPONSIBLE
PRODUCTIONHEALTH AND
SAFETYDEMOGRAPHIC &
SOCIETAL TRENDSCUSTOMER
RELATIONSHUMAN
CAPITAL

PUBLIC SECTOR CATEGORIES

DEMOGRAPHICS

HEALTH AND
SAFETY

EDUCATION

HOUSING

LABOR &
INCOMEACCESS TO
BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Moderate Risk

Passenger Railways



Key Issue:

The sector's moderate exposure to social risk mostly reflects high human capital risk and moderate demographic risk

Passenger railways have high exposure to human capital risk because many employees are unionized, particularly in Europe. Because strikes can be very visible and effective, passenger railways are highly exposed to the risk of collective bargaining and industrial action, and strikes can have reputational and financial consequences. Human capital risk is higher in Europe than it is in Asia and Russia, where strikes are less common.

Operators in developed countries are not materially exposed to on-the-job health and safety issues because the sector is generally subject to regulatory oversight and quality standards. However, employees working directly on operational maintenance face a risk of electricity shocks, particularly in developing countries, where levels of regulatory oversight are lower. Extensive testing limits the risk of product (rolling stock) defects.

Total Debt:

\$191 billion

The increasing polarization of wealth and cost-consciousness are moderate risks for passenger railways. While operators need to adapt their offer to include low-cost trains, which generate lower margins, they face increasing competition from low-cost airlines, long-distance buses and car-sharing. Demographic changes, particularly urbanization, could affect the distribution of rail traffic across countries, which could in turn lead to incremental investment in urban areas and the need to operate unprofitable empty services in deserted rural areas. However, government intervention to subsidize non-profitable lines generally mitigates this risk.

The fact that railway operators often provide a public service exposes them to the socially driven policy agenda. Social policies usually support railway transport through ticket or capital expenditure subsidies to modernize fleets. However, they also expose operators to the risk of changes in government policies, which could increase capital expenditure and erode revenue.

Passenger railways have limited exposure to customer relations risk. Users generally perceive them as a more convenient and reliable means of transport than road or air travel, limiting the risk of customer boycotts.

Moderate Risk

Pension Funds



Key Issue:

Pension managers face moderate social risks overall, largely driven by their inherent susceptibility to demographic changes

Funds' local beneficiary and government-sponsor constituents require continual assessment of their awareness in the community. Contributions fluctuate as the sponsor's underlying workforce changes, which may reflect demographic or social trends. Funds also face an aging demographic with an diminishing active to retired ratio. Activist pension members more recently have driven a more socially driven investment policy for pension management, and pension managers have sought to showcase their efforts in sustainable, environmental and responsible investment.

Total Debt:

\$148 billion

Professional investment management requires specialized talent, for which pension funds compete with other financial sectors such as banking and insurance. Management turnover tends to be higher than in other financial sectors because competition for talent is generally strong. Pension managers increasingly rely on other financial sectors for securities settlement and counterparty trades to manage risks in their investment portfolios, increasing the inherent risk in their supply chains

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



HEALTH AND SAFETY



DEMOGRAPHIC & SOCIETAL TRENDS



CUSTOMER RELATIONS



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PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Moderate Risk

Ports



Key Issue:

The main social risk that ports face relates to the socially driven policy agenda

The very local nature of ports' operations exposes them to specific community relations risks, such as reducing emissions or community opposition to expansion. In addition, the physically intensive nature of work at ports causes physical wear and tear over time, limiting most workers' longevity, while also giving rise to a range of work-related health and safety regulations. Ports in some areas are exposed to social risks in the form of highly unionized and influential labor. They are also indirectly exposed to responsible production risk through customers who may be forced to reduce emissions, such as shipping lines, or as a result of changes to the scale of ships requiring investment by ports to accommodate them. Ports in developed countries support well-paying jobs, and actions to reduce jobs such as automation attract community attention. Demand for cargo is increasing as demographics change and more wealth is accumulated, though an aging population consuming less overall counterbalances this trend in some areas.

Total Debt:
\$40 billion

Ports only maintain key customer pricing and cargo information, which is important proprietary competitive information that is only useful to a limited number of companies. Most of the cargo information they handle consists of publicly available US customs information or a shipping bill of lading, which is generally publicly available. No personal data is stored because cruise lines manage their customer's data.

Moderate Risk

Power Generation Projects



Key Issue:

Social risks for power projects are moderate overall.

A continuous ability to source fuel, changes in supply and demand, and markets' adaptation to technological shifts are pressures facing the sector. Socially driven policy agendas and observable changing consumer preferences based on increased environmental awareness will continue to affect credit quality in the medium term.

Total Debt:
\$47 billion

Community relations and engagement are important factors in obtaining permits for new developments. Factors with the potential to affect service quality and reliability include supply chain logistics such as transmission lines, gas pipelines and other fuel transportation. In addition to health and safety risks relating to maintaining heavy equipment and machinery, the sector also faces event risks with social risk repercussions, such as nuclear and hydropower disasters.

Social risks associated with workforce longevity, recruitment and retention are moderate overall, but can be higher in locations where there is a shortage of specialized labor or where expatriate labor is required in the initial stages. In some countries or regions with unionized workers or where utilities employ a large percentage of the workforce, there may be political pressure to keep certain assets operating.

Power projects may be less exposed to customer relations risks because of their single asset or smaller portfolio relative to larger unregulated utilities' higher exposure. While electricity providers are increasingly engaging in green labeling in response to changing consumer preferences and regulatory requirements, this is not viewed as a significant social risk to the extent of backlash due to false labeling.

PRIVATE SECTOR CATEGORIES



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DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Moderate Risk

Property, Casualty and Reinsurance



Key Issue:

The sector's primary exposure to social risks stems from underwriting certain insurance products, though human capital risk is also significant

Property and casualty insurers and reinsurers have a moderate overall exposure to social risks. Companies are highly regulated and distribute most of their products through intermediaries. However, the sector's reliance on a highly trained, specialized workforce means that human capital risks, primarily relating to recruiting and retaining key employees, can be significant.

Property and casualty insurers and reinsurers are exposed to various social risks through their underwriting of certain insurance products, where claims can arise as a result of industrial accidents, health and safety incidents, product recalls and a wide range of liability claims against corporations. Although these risks are factored into the price of insurance policies, the ultimate level of claims arising under such policies is often not known for many years.

Total Debt:

\$225 billion

Moderate Risk

Protein and Agriculture



Key Issue:

Companies in the protein and agriculture sector face moderate social risks overall

Although companies have limited direct relationships with consumers, customer relations risk is moderate because of the reliance on brand perception, quality, and safety of products. Protein and agriculture companies need to continually adjust production and marketing practices to sustain good customer relations. The sectors may be subject to labelling and disclosure requirements, as well as boycotts and activism related to food origin or food safety.

While human capital risk varies across regions and segments, the sector is labor-intensive overall. The sector is reliant on a large amount of low-skilled, low-wage workers in agriculture, slaughterhouses and meat-processing plants. Some activities have high risk of fatality and injury, work-related lung diseases, noise-induced hearing loss, skin diseases and certain cancers associated with chemical use and, for employees that work outside such as fishing or on farms, prolonged exposure to the sun.

Increased scrutiny of product quality and exposure to external supply chains can heighten social risks. Extensive information gathering required to monitor and maintain a responsible supply chain requires ongoing investment. The protein industry also faces the risk of opposition to the operation of slaughterhouses and meat-processing plants near communities. Population growth and rising incomes continue to support increasing demand for protein despite changing dietary preferences such as veganism and vegetarianism.

Companies need to adjust product offerings to demographic and societal trends, but some trends are more favorable to the agriculture and protein industry globally including increasing meat consumption in developing countries and use of agricultural commodities and byproducts as fossil-fuel alternatives. Regulations typically focus on the health and security of the food supply, workplace conditions, and the sustainable production of agriculture and protein products.

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



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DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Moderate Risk

Public Sector Housing



Key Issue:

The sector has a high exposure to socially driven policy agendas in Europe, and demographic and societal trends in the US

The social housing sector in Europe is highly exposed to socially driven policy agendas, particularly those relating to income inequality and the affordability of social rents. Government-led policy in recent years has introduced cuts to social rents, restricting the operating margins of public sector housing companies. In the US, meanwhile, demographic and societal trends have a significant impact on public sector housing. Demand for single and multifamily loan products, as well as standalone military, student and affordable housing projects, reflects demographic and economic trends such as the rise of an aging, low-income population and demand from first-time millennial homebuyers. Customer relations and product quality can also affect public sector housing. Unhappy tenants can generate negative headlines, and in Europe can influence development permissions for new housing schemes.

Total Debt:

\$185 billion

Moderate Risk

Regional and Local Governments - Advanced Economies



Key Issue:

Advanced economy regional and local governments' vulnerability to social risks is moderate overall, but there are significant variations between countries, regions and local governments

Advanced economy regional and local governments are exposed to demographic risks as their populations age. Such risks can slow economic growth and increase demand for services, resulting in less dynamic fiscal revenue, increased social expenditure and unfunded pension liabilities. These pressures will build in the medium to long term for most countries. However, pension responsibilities tend to lie more at the sovereign level and equalization measures can mean that the exposure and effects of demographics may be less immediate for regional and local governments. Within the same time frame, poor employment growth prospects and labor participation may also pressure advanced economy RLGs' finances, particularly where the working-age population is contracting, along with high levels of income inequality and pressure on housing affordability (especially in big cities). In some countries, the central government plays a significant role in mitigating some of these pressures. While such risks can be material to credit quality in the medium to long term, they are likely to be broadly manageable in the short term. Advanced economy RLGs can mitigate some of the effects because their economies are relatively wealthy and diverse, providing fiscal flexibility.

Total Debt:

\$4,288 billion

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



HEALTH AND SAFETY



DEMOGRAPHIC & SOCIETAL TRENDS



CUSTOMER RELATIONS



HUMAN CAPITAL

PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Moderate Risk

Regulated and Self-Regulated Utilities with Generation



Key Issue:
Moderate risk score overall driven by exposures to health and safety, customer relations and demographic and societal trends

Customer relations exposure is moderate. Maintaining good customer relationships is important to utilities because this affects how the public perceive them, as well as the regulatory treatment they receive. Reliance on interconnected technology and confidential information is also high, while companies have high potential exposure to cyber risk. Risks related to product disclosure and labeling are low, with the exception of green electricity.

There is a moderate risk of boycotts and customer activism in the form of objections to pipelines and transmission lines, as well as social implications as a result of rate increases. Human capital risk is moderate, as is labor relations risk. The sector is heavily unionized, though this has not been an issue for utility companies. Labor retention risk is moderate because utility skills are generally not difficult to acquire, though nuclear plants require specialized skills and the workforce is aging. In common with other sectors, white males dominate management, though the sector has largely avoided lawsuits or controversies to date.

Working with gas and electricity can be dangerous, and there have been regular injuries and fatalities. Ongoing health issues are moderate because exposure to an industrial environment can affect human health over time. Government regulations in respect of worker health and safety are extensive, while the safety and reliability of utility services are very important to customers. Supply chain risk is moderate because companies depend on fuel supplies and natural resources, as well as suppliers of equipment such as transformers.

Demand for distributed generation and renewable energy is increasing, while the younger generation is more attuned to demand response technology and clean energy. Social policy agenda risk is moderate because energy policy initiatives are often implemented through utility operations.

Total Debt:
\$865 billion

Moderate Risk

Restaurants



Key Issue:
Social risks are moderate for restaurants overall, with moderate exposure to responsible production and demographic and societal changes

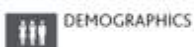
The restaurant sector has moderate exposure to social risks overall. In respect of customer relations risk, information gathered is generally limited to credit card information and a large part of the industry is cash-based. While nutritional information is required in some US states, mis-labelling in respect of allergens is the main risk restaurants face. Protests and boycotts, while not uncommon, mostly focus on a specific brand. While personnel turnover is high, the amount of training workers require is limited, though recruitment is a key problem. In addition, while the workforce is mostly non-unionized, there is significant momentum toward higher wages, and most companies are voluntarily increasing wages and incentives. Higher wages affect company margins, though technology and greater efficiencies mitigate the impact. Although the sector is subject to wide-ranging regulations and safety requirements, most focus on public health safety (contaminated food). Slips, falls, cuts and burns are the main safety hazards for personnel. Food safety concerns relate to the contamination of products in the supply chain. Despite a greater focus on healthy eating, companies overall have sufficient time to address and adjust to such changes.

Total Debt:
\$117 billion

PRIVATE SECTOR CATEGORIES



PUBLIC SECTOR CATEGORIES



Icon color key:

Very high

High

Moderate

Low

Moderate Risk

Retail and Apparel



Key Issue:

Social risks for the retail and apparel industry are moderate overall

The retail and apparel industries are reliant on customer relations. The rise of e-commerce implies the growing use of big data and customer data, which is vulnerable to breaches and can give rise to privacy and legal issues. The sector is also highly exposed to risks associated with demographic and societal changes. Changes in customer behavior, notably the shift to online, are challenges for retailers who currently lag in their e-commerce penetration resulting in eroding market shares and the need for future capital investment. Increased social media use among millennials is a challenge for fashion retailers in terms of customer loyalty and brand image. High regulatory burden or a meaningful exposure to products or concepts that are vulnerable to structural shifts in consumer demand due to new technologies such as electric vehicles or buying patterns can be credit negative. Over time, we believe that companies could adapt by passing on higher costs to consumers, and changing product offerings/mixes. While concerns over sustainability issues such as environmental impact and the treatment of workers may not translate into negative credit rating actions, retailers will seek to improve their brand image, sourcing transparency and investment in sustainable supply chains. Retailers' heavy reliance on external suppliers, implies responsible sourcing risks. While news of poor responsible sourcing practices can result in weaker demand or consumer boycotts they tend to have little long-term effect on consumer behavior, which underpins the credit quality of retail and apparel companies.

Total Debt:

\$619 billion

Moderate Risk

Shipping



Key Issue:

Health & safety and societal & demographic trends are the main social risks facing the shipping industry

The social considerations for shipping companies pertain mostly to safety and security, both onshore and at sea. Onshore, the risks might have to do with security (criminal activities, including cyberattacks, terrorism or armed conflicts) and health (major pandemics, such as COVID-19). At sea, there are risks associated with piracy in higher risk areas, such as the Indian Ocean, West Africa and Southeast Asia. The transportation of flammable or toxic materials may pose additional risks. The shipping industry also remains exposed to societal & demographic trends including societal pressure to reduce its carbon footprint. The industry transports a wide variety of goods and materials with different demand profiles including finished goods, iron ore, grains but also oil and coal. Companies may have to adapt but the long time horizon currently mitigates the risk.

Total Debt:

\$15 billion

Moderate Risk

Sovereigns - Advanced Economies



Key Issue:

Advanced economy sovereigns' exposure to social risks is moderate overall, but can vary significantly across regions and countries

Aging populations and the resulting fiscal and economic impact are the major social credit risks that developed nations face. An aging society that reduces the overall working-age population can reduce economic growth and increase fiscal pressure as revenue falls and aging-related expenditure rises. The risk is greatest in Japan and certain European countries: other advanced economies, such as the US and Canada, still benefit from higher fertility rates. Income inequality and labor-related challenges are other credit concerns for advanced economies. Income inequality is associated with lower and less stable economic growth, higher levels of corruption, increased demands for additional fiscal spending and greater political unrest. Education, housing, health and safety, and basic services all present low risks for developed sovereigns.

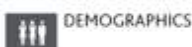
Total Debt:

\$29,706 billion

PRIVATE SECTOR CATEGORIES



PUBLIC SECTOR CATEGORIES



Icon color key:



Moderate Risk

Steel



Key Issue:

The social risks facing the steel industry vary on a country-by-country basis, but are moderate overall

Steel is produced in either blast or electric arc furnaces, and the metallurgical specifications for all its products are well identified. As a result, the industry is not prone to product recall or marketing or disclosure issues. We do not see a meaningful threat of demand substitution for most steel applications beyond those already in play. Building construction, which is the largest steel end-market, will continue to require steel even if regulation increases. In addition, while the auto industry increasingly uses aluminum for body-in-white and other automotive components, auto-grade aluminum capacity is limited and the process of creating aluminum-mining bauxite, processing the bauxite to make alumina and smelting the alumina to make aluminum is highly carbon-intensive.

Total Debt:

\$90 billion

The industry faces health and safety risks because it uses heavy equipment and high heat furnaces, for example. Unlike the coal industry, however, health issues such as Black Lung or those associated with asbestos are not present to the same degree. Regulatory requirements and supervision are significant, particularly in developed countries, and are increasing in other countries. Because steel is not easily replaced, particularly in industries such as construction, more likely areas of risk are the increase in battery electric vehicles, population migration to more urban areas and ride-sharing, reducing the need for automobiles.

While external supply chain disruptions occur, these tend to be company- or weather-specific and other necessary inputs exist globally, though prices may spike temporarily. The nature of steel production from a community relations perspective is an environmental issue to a greater extent. Even here, however, there has been a significant effort to reduce pollution and emissions, though the carbon transition remains a key risk for the industry.

Moderate Risk

Surface Transportation and Logistics



Key Issue:

Surface transportation and logistics companies face moderate social risks overall

The sector faces moderate social risks overall, given increasing environmental awareness and its impact on certain freight groups. Moderate social risk also reflects health and safety issues relating to industrial accidents, (e.g., the operation of heavy machinery) and health and safety regulations that are in place to protect employees against such risks.

While a number of companies are subject to collective bargaining agreements, industrial action is neither frequent nor protracted, though a persistent shortage of truck drivers in the US is putting upward pressure on wages. There remains a risk of industrial accidents (derailments), such as the fatal derailment of oil tank cars at Lac-Mégantic in Canada in 2013. Other social risks stem from indirect exposure to changing consumer behavior patterns as consumers become more environmentally aware and periodic supply chain congestion. We consider such risks to be moderate but manageable at this stage.

Total Debt:

\$271 billion

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



HEALTH AND SAFETY



DEMOGRAPHIC & SOCIETAL TRENDS



CUSTOMER RELATIONS



HUMAN CAPITAL

PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Moderate Risk

Technology Services and Software



Key Issue:

Software and technology services companies face moderate social risks from customer relations and human capital factors.

Software and technology services companies face moderate social risks from customer relations and human capital factors. The products and services offered by software and technology services businesses involve storage and processing of sensitive information about their customers and the customers, employees and suppliers of their customers. This increases the risk of reputational harm, high costs to remediate a breach, and/or legal liabilities resulting from potential information security breaches. The risks are mitigated by the significant investments the companies in this sector make to bolster information security of their products. As a result, most companies in the sector have a strong track record of maintaining the integrity of their information systems and protecting confidential information, despite increasing frequency and severity of cybersecurity threats. Software and technology services companies often sell products and services under contracts that typically have high renewal rates and the usage of their services by customers increases over time.

Total Debt:

\$1,392 billion

The sector's exposure to human capital considerations is moderately negative because software and technology services companies depend on highly skilled engineering talent, which is limited and in demand. At the same time, the companies in this sector have high operating profitability, which provides them the capacity to offer competitive compensation to attract technical talent. In addition, the business models of software and technology services businesses provide flexibility to manage demand for skilled talents by hiring globally, such as for product development and customer support services.

Demographic and social trends pose low risks to the sector because the sector benefits from secular growth driven by the increasing adoption of information technology by enterprises and consumers, digitization of service delivery, and digitization of financial flows.

Moderate Risk

Telecommunications



Key Issue:

The global telecoms service provider sector is exposed to moderate social risks overall

The global telecoms sector is capital intensive, relies on changing technology and intense labor needs with changing skill profiles. This implies ongoing employee restructuring processes, which in some countries might raise some employee unrest. Demand for service is high, and customers require increasing speed, network capacity and security as demand for data and video grows exponentially. The industry is highly regulated but there are no relevant litigation issues. Governments are increasingly demanding greater investment in infrastructure and competitive intensity to maintain price competition. Social-related risks are moderate, though this could change as the industry evolves. The sector is exposed to continued restructuring efforts as a result of pressure on revenue. Technological innovations make operations more efficient, provide opportunities to automate (digitalization) and ultimately reduce the need for headcount. Incumbents are in permanent restructuring mode and challengers have much leaner workforces. Data security and data privacy issues are prominent in the sector and companies continue to preserve them through significant IT investments. Potential health concerns, relative to wireless radio emissions, could constrain the construction of new towers. However, these pose a medium-term rather than an imminent risk. Furthermore, electromagnetic radiation (for example, from mobile antennas or mobile handsets) is a responsible production consideration, though it is mitigated by the existing regulatory radiation limits in most countries, to ensure that there are no health risks.

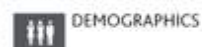
Total Debt:

\$1,187 billion

PRIVATE SECTOR CATEGORIES



PUBLIC SECTOR CATEGORIES



Icon color key:



Moderate Risk

Trading Companies



Key Issue:
Social risks for the trading company industry are moderate overall

Customer relations risk is low because companies have very limited direct relationships with customers. Human capital risk is moderate, with variation across sectors. There are no shortage of workers. Highly skilled employees are required to run trading and risk management operations, although the number of such individuals are low relative to the overall workforce.

Total Debt:
\$90 billion

The sector is not labor-intensive because technology has greatly reduced the manual labor needed to load and transport goods. The process of loading and transporting commodities is highly automated, reducing injury rates and fatalities, though dust from certain agricultural commodities and many energy commodities are flammable and/or explosive. The sector nevertheless has some industrial sites requiring use of hazardous materials, resulting in moderate risk for health and safety.

Although responsible production is largely limited to supplier due diligence, companies rely on suppliers to produce the commodities they sell. All companies in the sector have access to a number of suppliers and are consequently not affected by production issues on the part of any one supplier. Operations nevertheless involve complex supply chains in transporting goods from exporting countries to importing countries, resulting in moderate risk for responsible production.

Demographic and societal risks are moderate, with requirements to work with suppliers that they can document sustainable sourcing, fair wage and child labor requirements. Changing consumer patterns, government regulations or industry standards have an impact on the types of commodities these companies transport, and the timing of these changes has allowed companies to shift or modify resources to handle new products or documentation requirements. Certain sectors such as agricultural commodities will benefit from global demographic changes and income growth in developing countries.

Low Risk

Airports



Key Issue:
Airports face potential community relations challenges as they expand, but their strategic importance to local communities mitigates overall exposure

Community relations connected to expansion are the primary social risk that airports face, though reduced demand in some regions as a result of changing demographics mitigates this risk to an extent. There are regional concentrations of high-risk areas, for example in Australia and the EMEA region, where airports are seeking to expand in urban areas and face community opposition and political interference. However, they generally face low social risks because airports are widely needed and help drive economic growth, particularly as incomes rise. Direct labor risks are limited with the exception of air traffic controllers, whose services are more specialized. Airports' monopolistic position and importance to regional economies mean they are generally able to manage local risks.

Total Debt:
\$172 billion

Although most airports do not store personal user information, some maintain personal user data and face the risk of a breach if their systems are hacked. Indirect risks relate to airlines scaling back their number of flights from an airport. Aging populations can be a drag on growth in some regions, but increasing wealth and demand for travel in emerging markets counter-balance this risk.

PRIVATE SECTOR CATEGORIES

RESPONSIBLE PRODUCTION

HEALTH AND SAFETY

DEMOGRAPHIC & SOCIETAL TRENDS

CUSTOMER RELATIONS

HUMAN CAPITAL

PUBLIC SECTOR CATEGORIES

DEMOGRAPHICS

HEALTH AND SAFETY

EDUCATION

HOUSING

LABOR & INCOME

ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Low Risk

Asset Backed Securities - Auto Loans, Auto Leases, Floorplan, Car & Truck Rental



Key Issue:

Auto-backed loans and leases securitized in auto ABS are largely decoupled from considerations affecting the sector.

Technological changes or obsolescence, shifting demand patterns and changes in government policy mean that some segments will experience greater volatility in recovery levels and residual values than has historically been the case. In addition, the increasing popularity of alternative fuel vehicles (AFVs) has introduced some uncertainty in respect of future price trends for both legacy engine types and AFVs because of technological evolutions and government incentives. However, these changes likely will not have a material credit impact over the life of the transactions given their short tenor.

Total Debt:

\$317 billion

While most transactions are backed by originations of captive finance companies with oversight of the dealer network, finance companies in markets such as the US also originate indirect loans to non-prime borrowers through their relationships with franchise and independent dealers, potentially generating limited responsible production risk for specific issuers.

Low Risk

Asset Backed Securities - Credit Cards



Key Issue:

Data security and customer privacy risk are challenges for credit card ABS

Customer relations risk stems from high interest rates, data security and customer privacy risk, though lenders are investing heavily in cybersecurity. Although credit cards could fall out of favor as alternative payment methods such as mobile and online payments become more popular, they have retained their relevance to date.

Total Debt:

\$76 billion

Low Risk

Asset Backed Securities - Equipment Leases and Loans



Key Issue:

Human capital risk in equipment ABS where labor shortages may impact obligors' business.

The overall risk is low but varies based on deal tenor and loan collateral, which vary by region and deal, as well as whether the underlying equipment is essential. In particular, in the US pools backing trucking equipment ABS have indirect exposure to the limited available numbers of licensed truck drivers. The obligors in the trucking transportation business may face driver shortages which could result in reduced freight volumes, operating profit and financial flexibility. However, since such shortages are an industrywide issue, obligors may be able to raise the freight rates to partially offset the reduced volume. In Europe, pools are very granular and diversified and similar to pools of SME ABS.

Total Debt:

\$48 billion

PRIVATE SECTOR CATEGORIES

RESPONSIBLE
PRODUCTIONHEALTH AND
SAFETYDEMOGRAPHIC &
SOCIAL TRENDSCUSTOMER
RELATIONSHUMAN
CAPITAL

PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS

HEALTH AND
SAFETY

EDUCATION



HOUSING

LABOR &
INCOMEACCESS TO
BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Low Risk

Asset Backed Securities - Utility Cost Recovery Charges



Key Issue:

Deal structures, true-up mechanisms and medium tenors limit risk

There is a moderate risk of customer activism as a result of rate increases. The higher the charges the greater the risk, because higher charges, both in absolute terms and as a percentage of the customer's energy bill, increase the economic incentive to challenge the charge and/or the legislation. However, we view the overall sector risk as low owing to the low likelihood that a state would take action to impair the charge which would violate the state non-impairment pledge as per the securitization law. Also, under the financing law the securitization is required to provide savings to the utilities ratepayers, compared with the traditional utility financing mechanism. In European transactions the ultimate risk is borne by the electricity system as a whole, which includes utility companies and system regulators among other agents. This mitigates any direct customer relations risk

Total Debt:
\$23 billion

Low Risk

Asset Backed Securities - Wireless Towers



Key Issue:

Social and demographic trends are generally positive for wireless tower ABS, but potential or perceived health risks could influence policies and community activism

Wireless data consumption is growing robustly as the use of mobile devices increases, raising the value of the collateral as wireless carriers expand their network coverage and capacity by placing more equipment on towers. Towers are an important component of wireless communication infrastructure, though the underlying collateral mostly consists of simple metal structures. The fact that tower operators' customers are mainly large wireless carriers limits transactions' exposure to customer relations risk. Potential or perceived health risks could influence policies and community activism in the long term.

Total Debt:
\$11 billion

Low Risk

Asset-Backed Commercial Paper



Key Issue:

Social risks are low because of the diversified nature of the collateral backing the ABCP, if applicable, and/or the low social risks of all primary sectors financed in the ABCP programs.

While some ABCP programs may have a higher concentration in industries, sectors and companies with greater exposure to social risks than other, the single industry, sector and company exposure in ABCP programs are currently low. Additionally, all ABCP programs have support from financial institutions. If an ABCP program has exposure to a single industry, sector or company then the overall sector risk score for ABCP would likely mirror the score of the applicable industry, sector or company.

Total Debt:
\$383 billion

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



HEALTH AND SAFETY



DEMOGRAPHIC & SOCIETAL TRENDS



CUSTOMER RELATIONS



HUMAN CAPITAL

PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Low Risk

Collateralised Loan and Bond Obligations



Key Issue:

Social risks are low because of the diversified nature of the collateral backing CDO/CLO transactions

While some transactions may have a higher collateral concentration in industries and companies with greater exposure to social risks than others, the single industry and company exposures in CDO and CLO transactions are still relatively low (the largest single industry exposures are typically 10%-15% and the largest typical single issuer exposures typically 2.0%-2.5%). The overall sector risk score is low and such risks are not material to our credit ratings.

Total Debt:

\$741 billion

Low Risk

Commercial Mortgage Backed Securities



Key Issue:

Demographic and societal trends are the main social risk facing CMBS

Externally driven demographic trends and societal preferences are the main social considerations affecting credit, and generally affect the operations of building owners in respect of demand for space. The most notable shifts have come in mature markets such as the US, such as the shift in retail shopping preferences online and the impact on office building use of long-term trends such as flexible/remote-working, greater amounts of shared office space, and a limited but increasing amount of co-working space. Technological advances such as artificial intelligence and augmented reality are likely to support these trends.

Total Debt:

\$399 billion

Demographic shifts will continue to affect demand for commercial real estate at the regional level. The most significant trends are the growing preference for renting over homeownership, urbanization, and the migration of an aging and retiring population. As the wealth and income gap continues to grow, local governments and regulatory agencies are likely to address housing affordability through incentive systems such as "smart zoning" and new tax benefits for affordable housing construction, as well as penalties such as rent control.

Low Risk

Distribution and Supply Chain Services



Key Issue:

Most distribution and supply chain services issuers have limited direct consumer exposure, contributing to low social risk overall

Most distribution and supply chain services issuers have limited direct consumer exposure because of their business-to-business focus, which contributes to an overall low level of social risk. Certain industries such as chemicals face moderate risks relating to regulation, while some companies in the groceries sector have workforces with union representation. Other social risks are generally low. Changing consumer preferences can increase or reduce volumes of a product being shipped, but diversified distributors are generally able to shift capacity to maintain revenue and mitigate the credit impact.

Total Debt:

\$120 billion

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



HEALTH AND SAFETY



DEMOGRAPHIC & SOCIETAL TRENDS



CUSTOMER RELATIONS



HUMAN CAPITAL

PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Low Risk

Equipment and Transportation Rentals



Key Issue:

Companies face limited social risks that could be material to their ratings

A provider's reputation is key in terms of hands-on customer service, possessing the right quality equipment, keeping the equipment in good condition and providing it when needed. Although companies serve a wide range of customers with information on types of work that could be compromised, the sector is not heavily technology-dependent. However, companies rely on a range of suppliers and a manufacturer's failure to perform is a critical risk. If a company depends on a supplier to provide a specific piece of equipment and that supplier has an issue, the company could be exposed to reputational risk. Operational risk could arise if the company cannot obtain the same piece of equipment from an alternative supplier.

Total Debt:

\$48 billion

Low Risk

Insurance Brokers and Service Companies



Key Issue:

Insurance brokers are exposed to low overall social risk

Insurance brokers are exposed to low overall social risk and they do not produce tangible physical products that could give rise to responsible production issues or employee health and safety risks, or have large labour forces that could give rise to labour relations issues. Fines and reputational damage for product misselling and other types of customer misconduct could be material in some situations, but overall, this risk is low compared to that of insurers. Many insurance brokers are focused on commercial business, further reducing customer relations risk, although the smaller number of retail-focused brokers face higher customer relations risk, including the related to privacy and security of customer data. Demand for brokers' services is aligned with demand for commercial P&C and employee benefits insurance, with the latter benefiting from an aging demographic and rising opportunities for brokers as they help businesses design and monitor pensions and retirement plans.

Total Debt:

\$93 billion

Low Risk

Mortgage Insurance



Key Issue:

Exposure to social risks arises from policies covering payment default risks, mostly for residential mortgages and the underwriting of certain insurance products

Mortgage insurers' exposure to social risks is low overall. Their primary exposure is to a US housing sector exposed to demographic and societal trends, though market diversification mitigates this risk. Customer relations are important because mortgage insurers are highly regulated and rely on their handling of customer data and privacy. Human capital risks are potentially significant and mainly relate to recruiting and retaining key employees. Changes to regulatory rules and practices within a market, as well as potential changes to regulation or the taxation of products, could affect the benefits of mortgage insurance as a credit enhancement or result in industry segments being restructured.

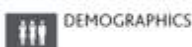
Total Debt:

\$8 billion

PRIVATE SECTOR CATEGORIES



PUBLIC SECTOR CATEGORIES



Icon color key:

Very high

High

Moderate

Low

Low Risk

Multilateral Development Banks



Key Issue:
Low risks as a sector, though individual issuers might be exposed to certain social risk categories.

Multilateral development banks' exposure to social risks is low because the nature of their policy mandate, which generally entails economic and social development policy goals. For the sector as a whole, social risks are unlikely to translate into a meaningful credit impact undermining the institutions' reputation, shareholders' support or access to financing because usually MDBs are characterized by diverse and inclusive workforce environment, limited health and safety risks given reliance on knowledge workers, and tend to meet responsible production expectations given the nature of their mission though such risks may vary with the primary operating environment and the policy mandate of the specific institution.

Total Debt:
\$1,765 billion

Low Risk

Privately Financed Public Infrastructure Projects (PPPs)



Key Issue:
While upfront risk allocation reduces exposure, the sector is nonetheless exposed to issues relating to community engagement and sensitivity to the socially driven policy agenda

The sector's broad nature means that different types of projects may have different exposures to some of the macro drivers of social risk. A project agreement is typically entered into between the public party and the private party, and identifies/allocates the key project risks and unknown items upfront. These provisions mitigate public-private partnerships' (PPPs) exposure to certain human capital risks, though different provisions can apply depending on the jurisdiction concerned, resulting in different risk exposures. Project companies' key construction and operational responsibilities are typically passed on to third parties on a "turnkey" and fixed-price basis, substantially insulating the projects from key risks and complexities. As such, PPPs are sensitive to the performance and quality of the operators/subcontractors.

The public nature of the assets being constructed and operated by PPPs means that the sector is exposed to potential community engagement issues and somewhat sensitive to the socially driven policy agenda, which varies depending on the country. For example, the opposition Labor Party in the UK has proposed nationalizing PPPs as part of plans to reduce the private sector's involvement in public services. However, contractual provisions requiring the public sector to repay the debt in full where a project agreement is terminated and the project company has not defaulted mitigate credit risk. The sector's low social risk scores reflect that most of the issuers we rate are based in countries whose institutional strength we assess as strong.

Total Debt:
\$44 billion

Low Risk

Real Estate Trusts & Other Commercial Property Firms



Key Issue:
Externally driven demographic trends and societal preferences are the main social considerations affecting credit, with the exception of US prison REITS

Demographic shifts will continue to affect demand for commercial real estate at the regional level. The most notable trends are a moderate shift in preference toward renting over home ownership, urbanization and the migration of an aging and retiring population. Our ratings for prison REITs incorporate the potential for adverse policy actions and prevailing negative investor sentiment toward the private prison business model, though drastic changes to regulation and criminal justice reform could meaningfully alter the economics for private prison landlords.

The industry's social license to operate is broadly governed by legislation such as zoning requirements for the use of real property, and zoning is generally resistant and slow to change. Notably, existing properties have generally grandfathered use. As the wealth and income gap continues to widen, local governments and regulatory agencies are likely to address housing affordability through incentive systems such as "smart zoning" and new tax benefits for affordable housing construction, as well as penalties such as rent control.

Total Debt:
\$483 billion

PRIVATE SECTOR CATEGORIES

RESPONSIBLE
PRODUCTIONHEALTH AND
SAFETYDEMOGRAPHIC &
SOCIAL TRENDSCUSTOMER
RELATIONSHUMAN
CAPITAL

PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS

HEALTH AND
SAFETY

EDUCATION



HOUSING

LABOR &
INCOMEACCESS TO
BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Low Risk

Residential Mortgage Backed Securities



Key Issue:
Mortgage loans securitized in RMBS transactions are moderately exposed to demographic and societal trends

Changing demographics trends such as aging, urbanization, population declines and ways of living trends in general have different consequences from the demand side in the mortgage market. For example, an aging "baby boomer" generation would likely increase demand for reverse mortgages, while millennials choosing to rent rather than own, or vice versa, would affect demand for single-family rentals, with implications for credit quality. Social issues have been very present in the political agenda related to housing and consumer protection, particularly in down cycles. Borrower-friendly legislation in reaction to such cycles can affect both the underwriting and the servicing of mortgage loans being securitized. Decisions driven by social policy, such as reducing underwriting standards at government-sponsored enterprises to increase home ownership, would reduce the credit quality of RMBS. In addition, a push to ease credit to lower-income borrowers could result in the acceptance of credit score methodologies that allow scores for borrowers without significant credit history, potentially reducing the credit quality of certain types of loans. Factors related to confidentiality and data protection in general may also pose a moderate risk.

Total Debt:
\$2,645 billion

Low Risk

Securities Firms and Market Infrastructure Providers



Key Issue:
The sector faces low social risks because customers are generally other financial and nonfinancial institutions

Companies in the sector do not produce tangible physical products that could give rise to responsible production issues or employee health and safety risks. They also employ relatively higher-skilled personnel, and there are no significant labor-relations issues. Those firms that have retail customers may have moderate risks associated with data security and customer privacy, since they may have access to large amounts of their customers' personal data and are more prone to cyberattacks. This risk is partly mitigated by sizeable technology investments and a long track record of appropriately handling sensitive client data. Fines and reputational damage due to product mis-selling or other types of mis-conduct may also be important considerations.

Total Debt:
\$275 billion

Low Risk

Semiconductors & Technology Hardware



Key Issue:
The sector faces moderate human capital risk due to dependence on highly skilled technical and engineering talent characteristic of the sector globally

Overall, social risk for the semiconductor and technology hardware sector is low. The sector, however, faces moderate human capital risk due to dependence on highly skilled technical and engineering talent characteristic of the sector globally, though there are some regional differences in availability and recruitment of talent.

Companies with more of a retail focus may be exposed to potential cyber breaches that result in fines, reputational damage and loss of market share. An enterprise that stores significant amounts of personal data or confidential information may have greater potential risk exposure. Conversely, many firms benefit from the positive impact from intermediate to long term societal trends driving expanded computing needs, digital automation, and data creation, requiring expanded production of sophisticated semiconductors, technology hardware, and related software.

Total Debt:
\$589 billion

PRIVATE SECTOR CATEGORIES



RESPONSIBLE PRODUCTION



HEALTH AND SAFETY



DEMOGRAPHIC & SOCIETAL TRENDS



CUSTOMER RELATIONS



HUMAN CAPITAL

PUBLIC SECTOR CATEGORIES



DEMOGRAPHICS



HEALTH AND SAFETY



EDUCATION



HOUSING



LABOR & INCOME



ACCESS TO BASIC SERVICES

Icon color key:

Very high

High

Moderate

Low

Low Risk

Title and Trade Credit Insurance



Key Issue:
Social risks such as changing consumer preferences are prevalent in many of the underlying sectors that trade credit insurers cover

Trade credit insurers are exposed to social risks, both through their own operations and through the insurance exposures they underwrite for debtors in a wide variety of industries. Trade credit is a highly specialized and relatively niche business that requires the ability to assess the credit risk of individual companies across the globe, driving the need to recruit and retain specialized skills. Social pressures affecting the wide variety of sectors that use trade credit insurance have an impact on credit insurers, but the impact is low because of the exposures' short-term nature and extensive diversification.

Total Debt:
\$4 billion

Title insurers are exposed to a high level of political and legal scrutiny, particularly around the pricing of their products, because of their consumer orientation and links to real estate. Increasing trade tensions affecting global trade volumes will affect credit insurers, but not to an unexpected extent within the normal cyclical nature of the business.

Low Risk

Toll Roads



Key Issue:
The toll roads sector has low exposure to social risks overall

Traffic volumes are a key revenue driver for issuers and fundamentally linked to macroeconomic trends and business sentiment. More broadly, they are influenced by demographic and societal trends, as well as consumers' mobility preferences. Concession contracts in some jurisdictions include rebalancing provisions under which issuers are entitled to compensation if actual traffic falls below expectations.

Total Debt:
\$242 billion

Community relations and sensitivity to the socially driven policy agenda are potential channels for social risk, though issuers' exposure can vary depending on geography. In particular, issuers are exposed to the risk of political interference in the toll-setting process, though the fact that tariff-adjustment formulas and procedures are usually contractually agreed with grantors in the concession agreements partly mitigates this risk. In some jurisdictions, multi-year toll increases have been approved by legislation. The overall risk of political interference is heightened during election cycles.

The sector is exposed to customer activism in the form of potential reductions in traffic in response to toll increases. This risk is partly mitigated by the fact that toll roads managed by issuers are often strategic assets in terms of meeting users' mobility needs and alternatives can be limited and/or more expensive.

Low Risk

Water and Wastewater Utilities



Key Issue:
The overall factor score of "Low" accounts for mitigants and the potential impact on credit. All sub-factors are analyzed as nominal exposure

Overall social and customer relations risks are moderate. Interconnected technology and companies' holding of personal confidential information and usage patterns means that their potential exposure to cyber risk is high. Labor relations risk is moderate because the sector is heavily unionized, though labor activism has generally not been a problem overall. Labor retention risk is moderate, reflecting that utility skills are generally not difficult to acquire. White males dominate senior positions in the water sector, in common with other sectors, though the sector has largely avoided lawsuits and controversies to date. On-the-job safety risk is moderate, though exposure to an industrial environment can affect workers' health over time. Government health and safety regulations are extensive. Product quality is high, and the safety and reliability of utility services are very important to customers. Supply chain risk is low. Community relations risk is moderate, reflecting the importance of maintaining good customer relationships from both a reputational and regulatory perspective. With respect to social policies, energy policy initiatives are often implemented through utility operations.

Total Debt:
\$388 billion

Moody's related publications

ESG methodology, heat map and classification

- » [General Principles for Assessing Environmental, Social and Governance Risks Methodology](#), 19 October 2021
- » [ESG – Global: Heat map: Social considerations pose high credit risk for 14 sectors, \\$8 trillion debt](#), 31 October 2019
- » [Cross-sector: Social issues can be material to private issuers' credit quality but are not typically the primary driver](#), 20 February 2019
- » [Cross-sector: Social issues have multiple impacts on government credit quality](#), 28 November 2018

Sector research

- » [Health Insurance — US: Industry focus on behavioral and mental health will help control medical costs](#), 26 April 2022
- » [Sovereigns – Global: Prolonged high inflation would hurt debt affordability, raise social risk](#), 25 April 2022
- » [State and Local Government – US: Federal aid accelerating efforts to address social risks, but funding is temporary](#), 25 April 2022
- » [Regulated Electric and Gas Utilities – US: Persistent elevated electric and gas prices will increase social risks](#), 14 February 2022
- » [Banks – Emerging markets: Demographic trends will drive divergence of growth and profitability prospects](#), 8 December 2021
- » [Government Policy – China: 'Common prosperity' agenda will create transition risks, with longer-term benefits if well implemented](#), 20 October 2021
- » [Demographics – Japan: Prefectures, banks outside population centers will bear brunt of bad demographics](#), 7 October 2021
- » [Automotive manufacturing – Global: Transformational shifts in production and consumer demand pose elevated social risk](#), 8 July 2021
- » [Coal – Global: Social risks accelerate decline in developed markets as public, investor concerns mount](#), 7 July 2021
- » [Social Risks – Australian mining sector: Maintaining social license from Indigenous communities is a rising credit risk](#), 29 June 2021
- » [Regional and local governments – Emerging markets: Infrastructure gap, inequality, weak labor markets underpin exposure to social risks](#), 22 June 2021
- » [Fashion Retail & Apparel – Global: Growing environmental & social scrutiny will drive long-term sector challenges](#), 7 April 2021
- » [Banks – Commonwealth of Independent States: Civil unrest and demographic changes pose substantial social risks](#), 7 April 2021
- » [Public Finance – US: Covid's hit to women's employment poses economic, social risks across public finance](#), 31 March 2021
- » [Social Risks – Chile: FAQ on the credit effects of Chile's recent social unrest](#), 2 March 2020
- » [Pharmaceuticals – Global: Drug pricing policies and legal exposures drive high social risk](#), 2 March 2021
- » [Higher Education – Global: Changing demographics, shifting societal preferences heighten social risks](#), 1 December 2020
- » [Not-for-profit and public healthcare – US: Aging population and lower reimbursement drive high social risk](#), 1 December 2020
- » [Health Insurance – US: Policy drive toward transformation of health insurance poses risks to profitability](#), 19 October 2020
- » [Student Loan ABS – US: Student loan burdens drive high social risk](#), 12 October 2020
- » [Tobacco – Global: Health implications drive high social credit risks but impact varies by product](#), 15 June 2020
- » [Gaming — Global: Problem gambling and crime prevention drive high social credit risk but impact varies](#), 10 June 2020

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