

ESG Industry Report Card: Transportation Infrastructure

June 3, 2019

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

Key Takeaways

- The most meaningful risk for the transportation infrastructure sector relates to governance issues, in particular due to government relations with and regulatory oversight of concessions.
- Environmental risks focus on the sector's pure infrastructure nature, although there is indirect exposure to users (autos, ships, and airlines), which all have more meaningful exposure to environmental changes.
- Social risks for transport infrastructure operators are moderate, and stem from their social role for and opposition from communities, notably from noise or air pollution. This is even more significant for airports trying to expand. Another key area of focus lies on safety, notably on low-probability but high-severity accidents on tunnels or bridges.

The ESG Risk Atlas

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

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Environmental Exposure (Risk Atlas: 3)

The moderate environmental exposure of transportation infrastructure reflects mainly its indirect exposure to emissions and pollution from the transportation industry itself, such as from cars, ships, and planes. Given the strong global mobility trends, we expect that underlying demand for these assets will not change fundamentally over the next decade, even as regulators impose significant emission constraints.

Extreme weather events, whether or not insurable, have the ability to disrupt business, typically for shorter timeframes. Airports and ports particularly can see their operations affected by weather. We see the risk of rising sea levels as a remote but potentially high-impact long-term risk.

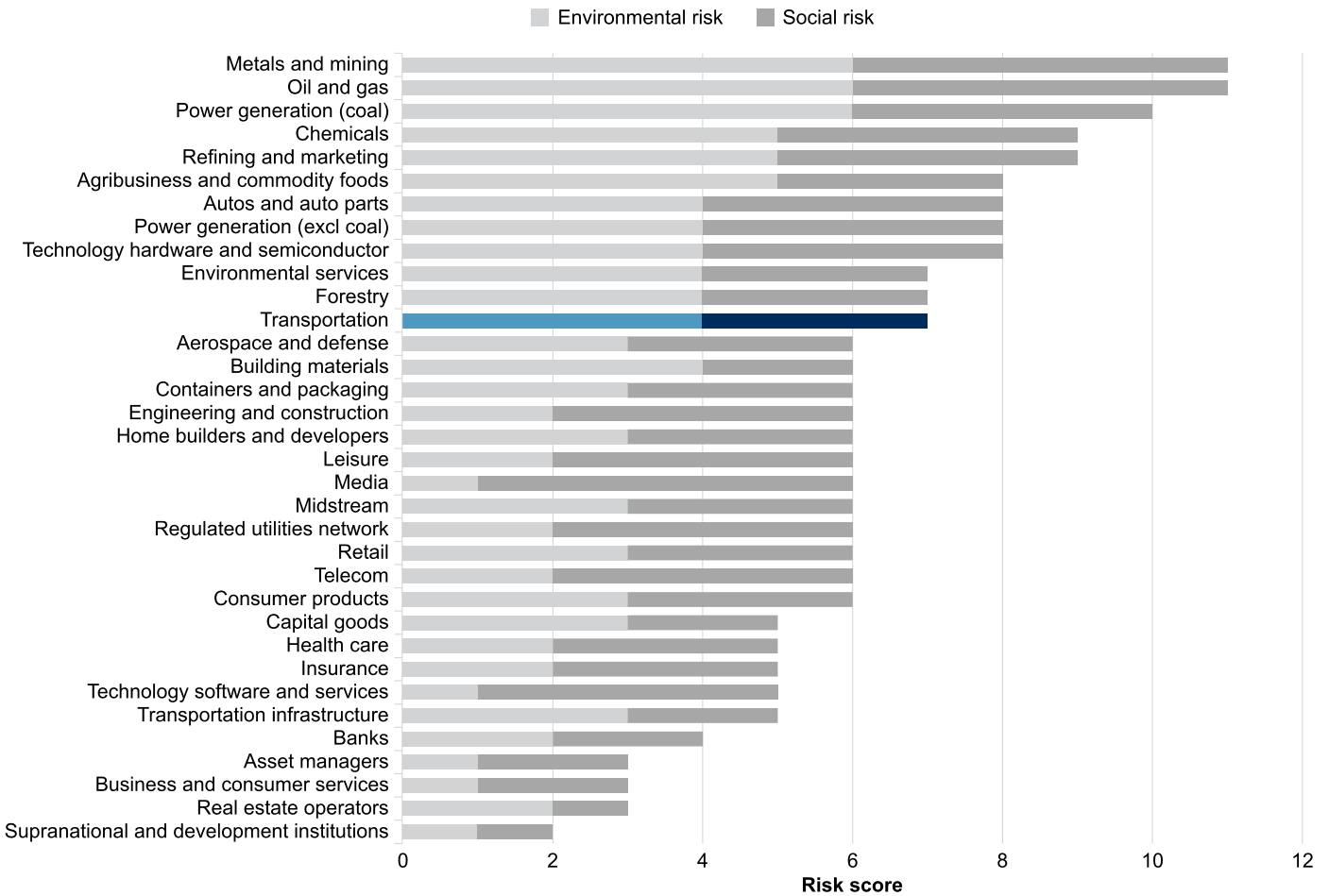
Land use can be a risk factor in the case of expansions, extensions and new developments. Transport infrastructure businesses are often in highly populated urban areas. Planning and approvals for developments requiring new land or more intensive use of existing land can be more difficult to achieve as government bodies in some jurisdictions respond to the views of increasingly vocal communities and potential environmental impact related to the construction works.

Social Exposure (Risk Atlas: 2)

In our view, the impact on local communities in relation to lifestyle, congestion, noise, and air quality is being increasingly highlighted and brought to the attention of media, businesses, investors, governments and regulators. Given the critical nature of existing road, airport, and port operations, we see these risks as limited, but recognize exposure is likely significant for growth expansions or new projects. Airport and road operations are also exposed to customer service levels. Any disruption to these services would trigger potential negative political pressures, expose them to penalties, or (in a worst-case scenario) possibly put at risk their concessions. For toll road operators, the social acceptability and affordability of tolls is an increasingly important factor.

Safety management is also an important issue for the sector because secure passage of customers and freight is essential to performance. Businesses typically have prescriptive policies and procedures that govern the activities of employees and contractors. Safety risk is particularly relevant for low-probability, high-impact events related to tunnels and bridges, as seen by deadly accidents surrounding the Mont Blanc tunnel and more recently, the Genoa bridge. Airport security against terrorism attacks are of utmost importance to maintain the confidence of all stakeholders and overall sector operations. Security concerns and customer focus are also very relevant for rail operators, similar to airports.

ESG Sector Risk Atlas



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Governance

Overall, governance risk is mostly specific to companies. Still at the sector level, governance factors include specifically the ability to oversee and manage interactions with governments and communities, in light of the public-private partnerships, concession agreements, or status as provider of an essential basic service. Proactively managing safety and maintaining related records and policies are particularly important when dealing with regulatory and political risks in case of accidents.

ESG Risks In The Transportation Infrastructure Industry

Airports

Issuer/Rating/Comments	Country	Analyst
<p>Aéroports de Paris (ADP) (A+/Stable/--)</p> <p>Governance factors are integral part of our credit analysis on ADP and we perceive the company has managed regulatory and political risks. ADP has made strong progress in reducing carbon dioxide emissions, by 70% per passenger compared with 2009 levels. About two-thirds of an airport's carbon footprint comes from aircrafts, the rest coming from passengers and employees. Paris Aeroport is responsible directly for only 4% of the total carbon dioxide emissions of its platform. From 2016-2020, ADP has about €44 million investment plans in sustainable development measures. Amongst other initiatives, ADP increased its car fleet to add electric and hybrid vehicles. On the social factors, we believe Paris airports are less exposed to additional noise restrictions or opposition in our view, compared with other European airports. This is evidenced by the long operational track-record and bearing in mind that its main airport, Charles de Gaulle, is relatively far from the city center.</p>	France	Tania Tsoneva
<p>Airport Authority Hong Kong (AAHK) (AA+/Stable/--)</p> <p>We believe the environmental risk could drive Airport Authority Hong Kong's (AAHK) credit quality. This, to a large extent, relates to the construction of Three Runway System (3RS), which aims to meet growing demand and lift the current capacity constraint of Hong Kong International Airport (HKIA). This HK\$141.5 billion (about \$18.1 billion) megaproject, with scheduled completion by 2024, has potential environment impacts, especially from reclamation work and processing the contaminated mud pits in deep sea. AAHK has adopted mitigation and enhancement measures, and about 40% of total capital expenditure of the 3RS are associated with reclamation and related works. Airport security and safety management is very important for AAHK and its operation. It is also exposed to inclement weather especially typhoons, and outbreak of contagious diseases, such as Severe Acute Respiratory Syndrome in 2003. That said, HKIA's passenger volume usually recovers quickly because of strong demand for this gateway airport. We believe AAHK has a strong governance framework, reflecting its solid strategic planning process and management's experience and expertise in managing the HKIA, comprehensive governance framework, and satisfactory transparency and disclosure in reporting.</p>	Hong Kong	Gloria Lu
<p>Gatwick Funding Ltd. (BBB+/Negative/--)</p> <p>As with most airport companies, Gatwick's highest-risk exposure relates to ensuring safety and security of flights. While the disruption by drones in December 2018 was considered by Civil Aviation Authority as beyond its control, airports could one day face financial liabilities, in addition to suffering damage to service quality or reputation. We do not foresee major environmental or social risks at this stage, because the airport has run at maximum capacity for a number of years. Gatwick delivered 50% reduction carbon emissions from fuel and energy in seven years (2010-2017) and was accredited carbon neutral. It has continued operation well below annual mean air quality limits for both nitrous oxide and particulate matter.</p>	U.K.	Beata Spierling-Tyler
<p>Heathrow Funding Ltd. (A-/Negative/--)</p> <p>Heathrow's exposure to ensuring safety and security of flights is more prominent compared with other U.K. airports, but measures are in place to mitigate these risks. This is both in the context of potential terror attacks and flying objects, in particular drones, entering restricted airspace around the aerodomes. A second risk stems from environmental requirements. Heathrow's expansion must not result in an increase in carbon emission so significant that it would jeopardize the U.K. meeting carbon reduction targets. The airport targets to be carbon-neutral by 2020, achieve no carbon emission by 2050, and reduce the number of people affected by noise. To achieve that, Heathrow is encouraging airlines to use of quieter, more fuel-efficient modern planes by adjusting the composition of the aeronautical charges, and is replacing the routine stacking with designing an optimum combination of arrivals and sequencing. It is also working toward increasing the share of passengers using public transport. Finally, Heathrow is developing the next generation of high-quality, cost-effective carbon offsetting. We believe the favorable regulatory framework, combined with strong management, and potential support from the shareholders, will enable the company to accommodate any financial impact of the above risks within current financial metrics.</p>	U.K.	Beata Spierling-Tyler
<p>Royal Schiphol Group N.V. (A+/Stable/--)</p> <p>We believe Schiphol is most affected versus hub airport peers in Europe with regards to noise pollution. This is because Schiphol's growth is constrained by noise regulations that limit the number of Air Traffic Management (ATM) to 500,000 (already reached in 2018). This limitation, along with shortage in terminal capacity, is straining service levels and operational costs. The ATM cap could be lifted after 2020; however, Schiphol and the relevant government authorities have not agreed on this yet. This could put</p>	The Netherlands	Tania Tsoneva

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pressure on the group's capacity to grow, weakening its competitive position as a hub airport. The main challenge Schiphol and other airports faces is that the majority of the CO2 emissions are outside its immediate control, because it cannot control the planes used and the resulting fuel requirements. The group aims for a reduction of 35% in CO2 emissions from Dutch civil aviation originated in the Netherlands by 2030. That said, Schiphol issued €500 million in green bonds to finance investments to finance investments in commercial real estate, terminal building, and energy efficiency; and to support investments in clean transportation infrastructure (such as for electric vehicles). Despite additional leverage to fund investments to reduce its carbon footprint, this new debt resulted in slightly weaker cash flow metrics than anticipated.

Southern Cross Airports Corp. Holdings Ltd. (BBB+/Stable/--)

Australia

Meet N. Vora

For Sydney Airport (SYD), we consider social factors more material than environmental or governance factors. SYD is near the city's central business district and in the middle of residential areas, resulting in operating restrictions aimed at ultimately reducing noise and disturbance. Despite the restrictions, the airport has performed well operationally and we don't expect any change due to challenges with community engagement. While SYD's location means there is virtually no additional land available for expansion or developments as Sydney continues to grow, this is not a risk for the airport for at least the next decade, notwithstanding the development of a second airport in western Sydney. Conversely, limited land availability means that the opportunity cost of nearby land used for parking is high, ultimately resulting in comparatively higher parking charges at the airport, supporting cash flows. SYD is looking to reduce its carbon footprint, aiming to be carbon neutral by 2025. It is doing this via a power purchase agreement, contracting up to 75% of its electricity requirement from renewable sources.

Mass Transit

Issuer/Rating/Comments

Country

Analyst

Although we generally see transportation infrastructure with low social risk, benefiting the communities served, for mass transportation, social risk tends to have higher and disruptive impacts over the area served, so we see higher social risk compared with airports and roads.

Empresa de Transporte de Pasajeros Metro S.A. (A+/Stable)

Chile

Candela Macchi

Metro Santiago is the government's critical instrument in improving Santiago citizens' quality of life, because more than 60% of public transport users ride the Metro. In addition, the entity allows the government to channel its public transportation goals by expanding subway coverage, extending mass transportation to the capital city from surrounding areas. Therefore, the stand-alone credit profile on Metro Santiago is six notches lower than the issuer credit rating, given an extremely high likelihood of timely and extraordinary government support to the entity under a financial distress scenario. From an environmental perspective, Metro of Santiago plays a major role in the city, given that it's subject to air pollution. Expanding the subway network results reduced use of vehicles, mostly buses, which in turn helps reduce pollution. The latter is in line with the government's environmental policy and underpins the entity's importance as a public policy tool. In addition, about 70% of the company's energy consumption stems from renewable sources, as part of Chile's target to significantly reducing CO2 emissions. Metro of Santiago has also invested in efficient lighting and energy management systems in stations to conserve 60% of energy (2.17 million kilowatt-hours per year, according to the company's sustainability report). Although we view lower energy costs as a credit positive, there is no near-term rating impact because we still view Metro of Santiago as highly leveraged.

MTR Corp. Ltd. (AA+/Stable/--)

Hong Kong

Jason Lan

We consider ESG factors an important part of the credit profile of MTRC. By providing an efficient mass transit system, the company plays a very important role in reducing use of personal vehicles and associated pollution. MTRC is mandated to provide affordable public transportation, and the company operates under a robust regulatory framework and benefits from a transparent and predictable fare-adjustment mechanism. Governance has been an important factor in our recent reviews of MTRC. The construction scandal at the Hung Hom terminals reveals some deficiency in the company's oversight of this project. The government is investigating the process control issues. While the scope of MTRC's responsibility for these incidents is unclear, we believe this is a credit negative. If evidence points to a significant deficiency in the company's oversight framework, we could adjust our governance scores. In addition, severe governance deficiency could lead to financial penalties, negatively affecting MTRC's financial profile. That being said, we believe the company has demonstrated overall satisfactory governance through the set-up of its board and various committees, and reasonable transparency and reporting, as well as its long operating and construction track record. We view MTRC as one of the top metro operators in the world in terms of train punctuality and quality of construction.

Ports

Issuer/Rating/Comments	Country	Analyst
<p>Hutchison Port Holdings Trust (HPHT) (A-/Stable/--)</p> <p>Over the past decade, HPHT has invested in the conversion of traditional diesel- rubber-tired gantry cranes to run on electricity or hybrid energy, which reduced noise and carbon dioxide emissions. In 2018, Yantian International Container Terminals was one of the first five Chinese ports to voluntarily adopt green shore power technology by installing mobile shore power systems that can service 13 berths. This allows vessels to turn off their diesel engines and connect to the local electric grid while at berth, reducing noise and particle emissions. We have reflected these measures in our analysis of operating efficiency and the company's operating profit. HPHT has adequate governance processes to ensure strong oversight of its business activities and transparent disclosure, which meet the requirement by Singapore Stock Exchange. The management also sets clear and measureable goals and has a solid track record of achieving most financial and operational goals. For instance, the company has thus far delivered on its commitment to reduce debt by HK\$1 billion per year for five years starting from 2017.</p>	Hong Kong	Jason Lan
<p>QPH Finance Co. Pty. Ltd. (BBB/Stable/--)</p> <p>As a landlord port, Port of Brisbane's (PoB) environmental and social risks are benign compared with more operational type ports. PoB is exposed to weather-related events, such as storms or a prolonged drought, which could have a short- or long-term revenue impact. The port maintains shipping channels and carries out dredging activity, both of which could create environmental exposure. Given that PoB is generally not responsible for land or seaside contamination-related issues, the risk is largely mitigated. Although the port would be the first responder during any adverse incidents, it is typically the land lessors, shipping lines, or state authorities that assume the ultimate liabilities. PoB is less exposed to social factors compared with operating ports because industrial actions or shipping line disruptions would affect stevedores. The port is less likely to face a material secondary flow-on effect because volumes would move from one stevedore to another during these events.</p>	Australia	Sonia Agarwal

Railroads

Issuer/Rating/Comments	Country	Analyst
<p>Aurizon Holdings Ltd. (BBB+/Stable/--)</p> <p>For Aurizon, environmental and social factors pose relatively more credit-related risks because it predominantly hauls coal, and as a rail operator, its emissions relate primarily to operating its locomotives. Environmental risks and global energy policies that reduce demand for miners' products, particularly thermal coal, could stress transport volumes through Aurizon's rail network. Aurizon mitigates these risks to an extent with measures in its strategic planning and investing in technology for improving efficiency and reducing the environmental impact. Aurizon's status as a publically traded company and meaningful presence across Australian states underpin the importance of social risks for the company. The business remains somewhat exposed to industrial actions by unions, mainly at times of enterprise agreement renegotiations, disputes with regulators and industry authorities, as well as delays in tariff setting. However, we believe the company is well-positioned to manage any short-term disruptions.</p>	Australia	Sonia Agarwal
<p>Deutsche Bahn AG (DB) (AA-Stable/--)</p> <p>Environmental factors play an important role in our credit analysis linked to the need to attract more passengers to rail transport and thus to DB's trains to fulfil the German government's climate targets to reduce carbon dioxide emissions. They propel the large investments to modernize the rail infrastructure and fleet and the use of low-emission vehicles, which have negatively affected its credit metrics, despite receiving government subsidies that cover about two-thirds of the capital expenditure. Social factors, such as workforce, customer service, and noise, are more material to DB compared with other transportation infrastructure companies due to its size and social responsibility as one of Germany's largest employers. The company has relatively high fixed operating leverage where about 40% are staff costs, which in turn constrains DB's profitability. We expect profitability will continue under pressure, given plans of hiring additional staff in 2019 to improve reliability and punctuality, as well as salary increases under new wage agreements with the union.</p>	Germany	Beata Sperling-Tyler
<p>Ferrovie dello Stato Italiane (FSI) (BBB/Negative/--)</p> <p>Governance plays the biggest role in our analysis of Italian integrated operator FSI. Although state ownership is a common element in the sector and generally credit neutral, the consolidation of Italian road operator Anas S.p.A. in 2018 and the potential acquisition of a stake in the "new Alitalia" in 2019 bring element of potential risks which in our view may put some pressure on the group's financial metrics. The influence of the state on FSI strategy mirrors the key strategic role the group exercises to its shareholder and</p>	Italy	Stefania Belisario

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the final rating on FSI remains strongly linked to our sovereign rating on Italy. This also reflects the reliance of the company on public subsidies, particularly to finance its large investment on the network. FSI focuses on promoting the modal shift to less carbon-intensive modes of transport and has developed a green bond framework. In December 2017, the company issued its first €600 million bond green bond to fund a regional and high speed rolling stock that pursues energy savings and reduced greenhouse emissions. In our view, this investment enhances the rail operator's ability to renegotiate regional service contracts by offering better services and protect itself against the upcoming competition envisaged by the Fourth Railway Package after 2020.

Getlink SE and Channel Link Enterprises Finance PLC (BB-/Negative/-- (Channel Link senior secured debt rating: BBB+/Negative)) **U.K.** **Beata Sperling-Tyler**

We view Getlink as more exposed to social factors than peers in the rail sector, given that it operates the only large-span transportation tunnel between U.K. and France. While the exclusive concession support our view of its strong competitive position, terrorism and the migrant crisis have disrupted and reduced traffic levels before. Although the risk of fires leading to a partial shutdown remains, after the incident in 2008, the company has reduced the risk with the addition of two SAFE firefighting stations in both tunnels. The financial impact is also partially mitigated by an insurance program covering material damage and business interruption, although proceeds might not be received on time. To guarantee a smooth crossing to transporters, Getlink remains engaged in a continuous review of the different means of security employed on its site. The company contributes only indirectly to reducing carbon dioxide emissions by providing an advantageous option to short-haul air. Operating under a binational environment, Getlink's management and governance is strong, in our view, based on the company's consistent good operating track record and efficient implementation of new border controls.

Open Joint Stock Co. (Russian Railways [RZD]) (BBB-/Stable/--) **Russia** **Elena Anankina**

Our assessment of RZD business includes social factors, notably the company's position of a large employer and provider of socially important services such as passenger transportation. As a government-related entity, RZD could be exposed to political influence or investment mandates that pressure cash flow, although these factors create incentives for the government to provide support to the company if needed. Therefore, we add one notch of support to RZD's stand-alone credit profile, considering an extremely high likelihood of timely and extraordinary support from the Russian government. Environmental issues relate to volumes from commodities, including oil products and coal. We believe they may be relatively volatile because of general commodity cyclicity and customers' environmental concerns. For example, China has a policy to reduce coal usage, which could affect RZD's thermal coal freight volume, although coal is only one of many commodities that RZD transports. In the long term, the company's business benefits from rail being a greener mode of transport compared with trucks or airplane and from RZD's investment in electrification that reduces its carbon footprint.

Pacific National Holdings Pty Ltd. (PN) (BBB-/Stable/--) **Australia** **Parvathy Iyer**

For PN, environmental and social factors are more pertinent due to the company's large footprint in coal haulage rail services that contributes about 50% of its revenue. Of the coal business, about 50% stems from thermal coal and 50% metallurgical, both of which come from high quality coal deposits in Australia relative to global suppliers. With no viable alternative to metallurgical coal for steel production, we see this segment as fairly secure. Demand for thermal coal could present a challenge if Asian countries transition from coal-based generation to other forms of generation. As one of the largest intermodal rail operators (contributing 50% of revenues) PN is actively seeking to further the transition to rail-based freight from road. This helps to ease the pressure of congestion within Australian cities by reducing truck movements and is significantly less emissions-intensive than trucks. PN appropriately manages noise and air quality (diesel emissions and coal dust), factors that could affect its capacity to operate, and we expect the company to manage these appropriately under any changes to regulations. Due to the nature of its industry, PN is also exposed to industrial action. However, the company has historically managed this risk well.

SNCF Mobilités (AA-/Stable/--) **France** **Stefania Belisario**

We believe that social factors are the highest risk for SNCF Mobilités, in the first place because of its large and unionized workforce in France, which have resulted in significant loss of revenues in the past few years. French rail unions have vocally opposed the government's reforms facilitating the opening of the monopoly market to competition resulting in 39 days of strikes in 2018 and 24 days in 2016, resulting in €700 million-800 million and €500 million in lost revenue, respectively. Although we expect social turmoil to calm down after the rail reform announced in 2018 is completed, our stand-alone credit profile on the company reflects the negative impact that social elements on which the company has no meaningful control have on its performance. Environmental factors are mainly reflected in our analysis as part of the company's large capital expenditure plan that includes investment in electric rolling stocks. In our view, this could support higher operating efficiency in the long term. Governance factors are generally neutral to our assessment given SNCF Mobilités' full state ownership although the multiyear performance contract signed with the state sets service and efficiency targets that helps the company in pursuing the objectives of a public service provider.

Roads

Issuer/Rating/Comments	Country	Analyst
<p>Abertis Infraestructuras S.A. (BBB/Stable/--)</p> <p>Governance factors are an integral part of our credit analysis of Abertis because its strategy is based on stable and predictable cash flows from public-private partnerships, mainly in the form of limited-time concessions and based on agreements with governments. We recognize the supportive contractual arrangements in Abertis' key markets of Spain, France, Chile, and to a lesser extent, Brazil. A key factor affecting the company's competitive position is its relationship with the grantors and the capacity of the group to carry out its concessional obligations and investment commitments. Abertis' management has proved effective in negotiating contract extensions, where possible, in exchange for new investments that could mitigate the agreements' limited life nature. For example, in 2017, the company negotiated €147 million in projects in France against tariff increases, and \$430 million of additional investments in Argentina to improve its road network.</p>	Spain	Tania Tsoneva
<p>Atlantia SpA (BBB/Negative/--)</p> <p>Atlantia's high exposure to safety and governance is exacerbated following the collapse of a bridge in Genoa operated by Autostrade per L'Italia (ASPI) in August 2018. It is illustrated by the strained relationship with the Ministry of Infrastructure and Transport (MIT)--the grantor of the concession for its Italian toll roads under ASPI. The accident caused 43 casualties, and led to about €509 million in damage costs and provisions recognized in 2018. As result, ASPI provided voluntary contributions to the Genoa community and put an extraordinary action to monitor 130 most important constructions, relying on specialized external companies. Our rating reflects the continuing uncertainty surrounding the operating environment and potential toughening of concession terms on new investments. Although we assess the concession contract as having strong protective features, we believe that ASPI remains exposed to potential penalties contractually capped at €150 million if is found to be in breach of the concession contract. We believe terminating the concession agreement as unlikely. Finding a replacement concession or taking over the operations of such a large toll road network (2,850 kilometers, or 52% of Italy's motorways) could deter the government on practical grounds, in our view. The concession contract also provides for a formula to estimate the termination value. Still one cannot exclude whether the investigation into the causes of the bridge collapse could lead to litigation and material legal fines, which are difficult to quantify ahead of time. We will monitor developments with respect to the cause of the collapse, the MIT's opinion on ASPI's maintenance record and the potential resumption of dialogue with the government. In the meantime, safety remains a priority commitment of the Atlantia Group's operations (which includes Spain-based toll road operator Abertis and Italy-based Aeroporti di Roma). Since privatization in 1999 to 2017 on ASPI's network, the mortality rate has fallen by 77% and the overall accident rate by 55%.</p>	Italy	Tania Tsoneva
<p>Transurban Ltd. (BBB+/Stable/--)</p> <p>Governance is an important factor for Transurban given the need to manage key relationships with governments and concession authorities. The company does this well and this has assisted in both supporting its existing business and growing the company through expansions and extension of its existing toll roads. Transurban is taking measures to reduce emissions and climate change exposures. Solar panels at some sites generate renewable energy, which the company uses directly onsite. For fiscal 2018, Transurban's total renewable energy use was 3,387 megawatt-hours, reportedly saving 2,811 tons of carbon dioxide greenhouse gas emissions. The company also focuses on improving road efficiencies and reducing emissions by attempting to reduce the amount of time vehicles idle in traffic and advocating for electric vehicles. Transurban's social license to operate and reputation among users and local communities is a key component of its business. The company established a Customer and Communities Advocate role in 2017 to address community concerns.</p>	Australia	Richard Timbs
<p>Vinci S.A. (A-/Positive/--)</p> <p>The main ESG consideration for Vinci is governance and social factors. We believe the group faces limited risk of direct regulatory or political intervention in its French toll road activities (about 65% of Vinci's total EBITDA). This is because of France's strong rule of law and the contractual protections under the toll road's concession agreements. We see the French regulator as more supportive than toll road peers in other countries, because it has allowed some additional tariff increases to compensate for tax rises and, following a court dispute, for the tariff freeze in 2015. As a public service provider, Vinci is exposed to the risk of social tension that often manifests itself in France in the form of strikes. The recent gilets jaunes (yellow vests) protests in France and at a number of ASF's highway toll booths resulted in weaker end-of-year traffic on French toll roads. Vinci's diversity, particularly the strong growth of the contracting activities following integration of previous acquisitions, has mitigated this. Other important factors relate to safety standards, because Vinci is a major construction company and operator of a significant number of tunnels and bridges. The company is committed to a zero accident policy. Environmental factors are more relevant for Vinci's contracting businesses, with the key risks monitored by the company being extreme climate events, pollution and deterioration in environmental quality, and rarity of raw materials.</p>	France	Tania Tsoneva

Waterways

Issuer/Rating/Comments	Country	Analyst
<p>Autoridad del Canal de Panama (A/Stable/--)</p> <p>Governance is a key factor for ACP's credit quality. The entity's legal setup and articles of incorporation, the Constitution of Panama, and international treaties provide a framework that allows the rating on ACP to be two notches higher than on the Republic of Panama. According to the Constitution, ACP is a legally autonomous entity with a transparent structure of corporate governance and track record of autonomous business decision-making. In our view, several governance factors reduce, and will continue to do so, the government's control of ACP. Environmental and social issues are also relevant, mostly regarding water treatment. The conservation of natural resources is an essential element in ACP's strategy. It contemplates, along with other priorities, guaranteeing the quantity and quality of water that's key for consumption for the local population but also key for the sustainability of the business in the long term, given that vessels transit through the canal depend on the resource's reliability. Therefore, the company has taken measures to secure resource availability, as seen in the 18 innovative water-savings basins incorporated with the new set of locks that recycle 60% of the water used per lockage, saving 7% more water than the original locks. For the next two-to-three years, we expect ACP to prioritize investments related to the execution of the contracts with the Ministry of the Environment. These consists of the studies and development of the conceptual designs for multipurpose reservoirs that are expected to be financed at the government level, and that have as ultimate goal of contributing to the water availability. ACP's solid finances enable the entity to absorb additional capital expenditures without weakening its credit metrics.</p>	Panama	Candela Macchi

Appendix: Components In The Sector ES Risk Atlas

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

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

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

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

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

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

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

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

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

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

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

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

This report does not constitute a rating action.

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